**S2 File:**

Extensible Markup Language (XML) file of the process (modeling and feature selection) as presented in this paper. Copy and paste this code into the RapidMiner XML view (remove the previous xml code), click the green check symbol and switch back to the normal Process (diagram) view.

<?xml version="1.0" encoding="UTF-8" standalone="no"?>

<process version="6.5.002">

<context>

<input/>

<output/>

<macros>

<macro>

<key>basepath</key>

<value>C:\Users\Martin\.RapidMiner\repositories\MIMIC II\</value>

</macro>

</macros>

</context>

<operator activated="true" class="process" compatibility="6.5.002" expanded="true" name="Process">

<parameter key="resultfile" value="/Users/svenvanpoucke/Documents/BigData2015/ArtikelMaud/MIMICplateletsMartin.res"/>

<process expanded="true">

<operator activated="true" class="read\_csv" compatibility="6.5.002" expanded="true" height="60" name="Read ICUdetail" width="90" x="45" y="120">

<parameter key="csv\_file" value="/Users/svenvanpoucke/Documents/BigData2015/ArtikelMaud/icudetail"/>

<parameter key="first\_row\_as\_names" value="false"/>

<list key="annotations">

<parameter key="0" value="Name"/>

</list>

<parameter key="encoding" value="US-ASCII"/>

<list key="data\_set\_meta\_data\_information">

<parameter key="0" value="icustay\_id.true.integer.attribute"/>

<parameter key="1" value="subject\_id.true.integer.id"/>

<parameter key="2" value="gender.true.polynominal.attribute"/>

<parameter key="3" value="dob.true.polynominal.attribute"/>

<parameter key="4" value="dod.true.polynominal.attribute"/>

<parameter key="5" value="expire\_flg.true.polynominal.attribute"/>

<parameter key="6" value="subject\_icustay\_total\_num.true.integer.attribute"/>

<parameter key="7" value="subject\_icustay\_seq.true.integer.attribute"/>

<parameter key="8" value="hadm\_id.true.integer.attribute"/>

<parameter key="9" value="hospital\_total\_num.true.integer.attribute"/>

<parameter key="10" value="hospital\_seq.true.integer.attribute"/>

<parameter key="11" value="hospital\_first\_flg.true.polynominal.attribute"/>

<parameter key="12" value="hospital\_last\_flg.true.polynominal.attribute"/>

<parameter key="13" value="hospital\_admit\_dt.true.polynominal.attribute"/>

<parameter key="14" value="hospital\_disch\_dt.true.polynominal.attribute"/>

<parameter key="15" value="hospital\_los.true.integer.attribute"/>

<parameter key="16" value="hospital\_expire\_flg.true.polynominal.attribute"/>

<parameter key="17" value="icustay\_total\_num.true.integer.attribute"/>

<parameter key="18" value="icustay\_seq.true.integer.attribute"/>

<parameter key="19" value="icustay\_first\_flg.true.polynominal.attribute"/>

<parameter key="20" value="icustay\_last\_flg.true.polynominal.attribute"/>

<parameter key="21" value="icustay\_intime.true.polynominal.attribute"/>

<parameter key="22" value="icustay\_outtime.true.polynominal.attribute"/>

<parameter key="23" value="icustay\_admit\_age.true.real.attribute"/>

<parameter key="24" value="icustay\_age\_group.true.polynominal.attribute"/>

<parameter key="25" value="icustay\_los.true.integer.attribute"/>

<parameter key="26" value="icustay\_expire\_flg.true.polynominal.label"/>

<parameter key="27" value="icustay\_first\_careunit.true.polynominal.attribute"/>

<parameter key="28" value="icustay\_last\_careunit.true.polynominal.attribute"/>

<parameter key="29" value="icustay\_first\_service.true.polynominal.attribute"/>

<parameter key="30" value="icustay\_last\_service.true.polynominal.attribute"/>

<parameter key="31" value="height.true.real.attribute"/>

<parameter key="32" value="weight\_first.true.real.attribute"/>

<parameter key="33" value="weight\_min.true.real.attribute"/>

<parameter key="34" value="weight\_max.true.real.attribute"/>

<parameter key="35" value="sapsi\_first.true.integer.attribute"/>

<parameter key="36" value="sapsi\_min.true.integer.attribute"/>

<parameter key="37" value="sapsi\_max.true.integer.attribute"/>

<parameter key="38" value="sofa\_first.true.integer.attribute"/>

<parameter key="39" value="sofa\_min.true.integer.attribute"/>

<parameter key="40" value="sofa\_max.true.integer.attribute"/>

</list>

</operator>

<operator activated="true" class="read\_csv" compatibility="6.5.002" expanded="true" height="60" name="Platelet count" width="90" x="45" y="300">

<parameter key="csv\_file" value="/Users/svenvanpoucke/Documents/BigData2015/ArtikelMaud/Plateletmeanmaxmin0.csv"/>

<parameter key="date\_format" value="YYYY-MM-DD hh:mm"/>

<parameter key="first\_row\_as\_names" value="false"/>

<list key="annotations">

<parameter key="0" value="Name"/>

</list>

<parameter key="encoding" value="US-ASCII"/>

<list key="data\_set\_meta\_data\_information">

<parameter key="0" value="Subject\_ID.true.integer.attribute"/>

<parameter key="1" value="Pcmean.true.integer.attribute"/>

<parameter key="2" value="Pcmin.true.integer.attribute"/>

<parameter key="3" value="Pcmax.true.integer.attribute"/>

<parameter key="4" value="PcT0.true.integer.attribute"/>

</list>

</operator>

<operator activated="true" class="read\_csv" compatibility="6.5.002" expanded="true" height="60" name="Comorbidity CSV " width="90" x="45" y="210">

<parameter key="csv\_file" value="/Users/svenvanpoucke/Documents/BigData2015/ArtikelMaud/comorbidity"/>

<parameter key="first\_row\_as\_names" value="false"/>

<list key="annotations">

<parameter key="0" value="Name"/>

</list>

<parameter key="encoding" value="US-ASCII"/>

<list key="data\_set\_meta\_data\_information">

<parameter key="0" value="subject\_id.true.integer.id"/>

<parameter key="1" value="hadm\_id.true.integer.attribute"/>

<parameter key="2" value="category.true.polynominal.attribute"/>

<parameter key="3" value="congestive\_heart\_failure.true.binominal.attribute"/>

<parameter key="4" value="cardiac\_arrhythmias.true.binominal.attribute"/>

<parameter key="5" value="valvular\_disease.true.binominal.attribute"/>

<parameter key="6" value="pulmonary\_circulation.true.binominal.attribute"/>

<parameter key="7" value="peripheral\_vascular.true.binominal.attribute"/>

<parameter key="8" value="hypertension.true.binominal.attribute"/>

<parameter key="9" value="paralysis.true.binominal.attribute"/>

<parameter key="10" value="other\_neurological.true.binominal.attribute"/>

<parameter key="11" value="chronic\_pulmonary.true.binominal.attribute"/>

<parameter key="12" value="diabetes\_uncomplicated.true.binominal.attribute"/>

<parameter key="13" value="diabetes\_complicated.true.binominal.attribute"/>

<parameter key="14" value="hypothyroidism.true.binominal.attribute"/>

<parameter key="15" value="renal\_failure.true.binominal.attribute"/>

<parameter key="16" value="liver\_disease.true.binominal.attribute"/>

<parameter key="17" value="peptic\_ulcer.true.binominal.attribute"/>

<parameter key="18" value="aids.true.binominal.attribute"/>

<parameter key="19" value="lymphoma.true.binominal.attribute"/>

<parameter key="20" value="metastatic\_cancer.true.binominal.attribute"/>

<parameter key="21" value="solid\_tumor.true.binominal.attribute"/>

<parameter key="22" value="rheumatoid\_arthritis.true.binominal.attribute"/>

<parameter key="23" value="coagulopathy.true.binominal.attribute"/>

<parameter key="24" value="obesity.true.binominal.attribute"/>

<parameter key="25" value="weight\_loss.true.binominal.attribute"/>

<parameter key="26" value="fluid\_electrolyte.true.binominal.attribute"/>

<parameter key="27" value="blood\_loss\_anemia.true.binominal.attribute"/>

<parameter key="28" value="deficiency\_anemias.true.binominal.attribute"/>

<parameter key="29" value="alcohol\_abuse.true.binominal.attribute"/>

<parameter key="30" value="drug\_abuse.true.binominal.attribute"/>

<parameter key="31" value="psychoses.true.binominal.attribute"/>

<parameter key="32" value="depression.true.binominal.attribute"/>

</list>

</operator>

<operator activated="true" class="subprocess" compatibility="6.5.002" expanded="true" height="112" name="Data preparation" width="90" x="246" y="165">

<parameter key="parallelize\_nested\_process" value="true"/>

<process expanded="true">

<operator activated="true" class="join" compatibility="6.5.002" expanded="true" height="76" name="Join" width="90" x="45" y="300">

<list key="key\_attributes"/>

</operator>

<operator activated="true" class="subprocess" compatibility="6.5.002" expanded="true" height="76" name="Age (Dod-Dob)" width="90" x="178" y="300">

<process expanded="true">

<operator activated="true" class="set\_role" compatibility="6.5.002" expanded="true" height="76" name="Set Role" width="90" x="45" y="120">

<parameter key="attribute\_name" value="icustay\_id"/>

<parameter key="target\_role" value="id"/>

<list key="set\_additional\_roles">

<parameter key="icustay\_expire\_flg" value="label"/>

</list>

</operator>

<operator activated="true" class="guess\_types" compatibility="6.5.002" expanded="true" height="76" name="Guess Types" width="90" x="179" y="120">

<parameter key="attribute\_filter\_type" value="subset"/>

<parameter key="attributes" value="dob|dod|hospital\_disch\_dt|hospital\_admit\_dt|icustay\_intime|icustay\_outtime"/>

</operator>

<operator activated="true" class="nominal\_to\_date" compatibility="6.5.002" expanded="true" height="76" name="Nominal to Date" width="90" x="313" y="120">

<parameter key="attribute\_name" value="dob"/>

<parameter key="date\_format" value="YYYY-MM-DD HH:MM:SS"/>

</operator>

<operator activated="true" class="nominal\_to\_date" compatibility="6.5.002" expanded="true" height="76" name="Nominal to Date (2)" width="90" x="447" y="120">

<parameter key="attribute\_name" value="dod"/>

<parameter key="date\_format" value="YYYY-MM-DD HH:MM:SS"/>

</operator>

<operator activated="true" class="generate\_attributes" compatibility="6.4.000" expanded="true" height="76" name="Generate Attributes" width="90" x="581" y="120">

<list key="function\_descriptions">

<parameter key="Age" value="date\_diff(dob,dod)/31556952000"/>

</list>

</operator>

<connect from\_port="in 1" to\_op="Set Role" to\_port="example set input"/>

<connect from\_op="Set Role" from\_port="example set output" to\_op="Guess Types" to\_port="example set input"/>

<connect from\_op="Guess Types" from\_port="example set output" to\_op="Nominal to Date" to\_port="example set input"/>

<connect from\_op="Nominal to Date" from\_port="example set output" to\_op="Nominal to Date (2)" to\_port="example set input"/>

<connect from\_op="Nominal to Date (2)" from\_port="example set output" to\_op="Generate Attributes" to\_port="example set input"/>

<connect from\_op="Generate Attributes" from\_port="example set output" to\_port="out 1"/>

<portSpacing port="source\_in 1" spacing="0"/>

<portSpacing port="source\_in 2" spacing="0"/>

<portSpacing port="sink\_out 1" spacing="0"/>

<portSpacing port="sink\_out 2" spacing="0"/>

</process>

</operator>

<operator activated="true" class="filter\_examples" compatibility="6.4.000" expanded="true" height="94" name="Filter Adults" width="90" x="318" y="300">

<list key="filters\_list">

<parameter key="filters\_entry\_key" value="icustay\_age\_group.equals.adult"/>

</list>

</operator>

<operator activated="true" class="guess\_types" compatibility="6.5.002" expanded="true" height="76" name="Guess Types (2)" width="90" x="44" y="435">

<parameter key="include\_special\_attributes" value="true"/>

</operator>

<operator activated="true" class="join" compatibility="6.5.002" expanded="true" height="76" name="Join All" width="90" x="447" y="300">

<parameter key="join\_type" value="left"/>

<parameter key="use\_id\_attribute\_as\_key" value="false"/>

<list key="key\_attributes">

<parameter key="subject\_id" value="Subject\_ID"/>

</list>

</operator>

<operator activated="true" class="select\_attributes" compatibility="6.5.002" expanded="true" height="76" name="Select Attributes" width="90" x="581" y="300">

<parameter key="attribute\_filter\_type" value="subset"/>

<parameter key="attributes" value="category|dob|dod|expire\_flg|hadm\_id|height|hospital\_admit\_dt|hospital\_disch\_dt|hospital\_expire\_flg|hospital\_first\_flg|hospital\_last\_flg|hospital\_los|hospital\_seq|hospital\_total\_num|icustay\_age\_group|icustay\_first\_careunit|icustay\_first\_flg|icustay\_intime|icustay\_last\_careunit|icustay\_last\_flg|icustay\_last\_service|icustay\_los|icustay\_outtime|icustay\_seq|icustay\_total\_num|subject\_icustay\_seq|subject\_icustay\_total\_num|subject\_id|Age|icustay\_admit\_age|icustay\_id"/>

<parameter key="invert\_selection" value="true"/>

<parameter key="include\_special\_attributes" value="true"/>

</operator>

<operator activated="true" class="replace\_missing\_values" compatibility="6.5.002" expanded="true" height="94" name="Replace Missing Values" width="90" x="715" y="300">

<parameter key="include\_special\_attributes" value="true"/>

<list key="columns"/>

</operator>

<operator activated="true" class="nominal\_to\_numerical" compatibility="6.5.002" expanded="true" height="94" name="Nominal to Numerical (3)" width="90" x="830" y="301">

<parameter key="attribute\_filter\_type" value="value\_type"/>

<parameter key="value\_type" value="polynominal"/>

<list key="comparison\_groups"/>

</operator>

<operator activated="true" class="nominal\_to\_numerical" compatibility="6.5.002" expanded="true" height="94" name="Nominal to Numerical (4)" width="90" x="953" y="299">

<parameter key="attribute\_filter\_type" value="value\_type"/>

<parameter key="value\_type" value="binominal"/>

<parameter key="coding\_type" value="unique integers"/>

<list key="comparison\_groups"/>

</operator>

<operator activated="true" class="nominal\_to\_binominal" compatibility="6.5.002" expanded="true" height="94" name="Nominal to Binominal" width="90" x="1088" y="297">

<parameter key="attribute\_filter\_type" value="single"/>

<parameter key="attribute" value="icustay\_expire\_flg"/>

<parameter key="include\_special\_attributes" value="true"/>

</operator>

<operator activated="true" class="remap\_binominals" compatibility="6.5.002" expanded="true" height="76" name="Remap Binominals" width="90" x="1230" y="299">

<parameter key="attribute\_filter\_type" value="single"/>

<parameter key="attribute" value="icustay\_expire\_flg"/>

<parameter key="include\_special\_attributes" value="true"/>

<parameter key="negative\_value" value="N"/>

<parameter key="positive\_value" value="Y"/>

</operator>

<operator activated="true" class="split\_data" compatibility="6.5.002" expanded="true" height="94" name="Split Data (3)" width="90" x="1367" y="298">

<enumeration key="partitions">

<parameter key="ratio" value="0.7"/>

<parameter key="ratio" value="0.3"/>

</enumeration>

<parameter key="sampling\_type" value="stratified sampling"/>

<parameter key="use\_local\_random\_seed" value="true"/>

</operator>

<connect from\_port="in 1" to\_op="Join" to\_port="left"/>

<connect from\_port="in 2" to\_op="Join" to\_port="right"/>

<connect from\_port="in 3" to\_op="Guess Types (2)" to\_port="example set input"/>

<connect from\_op="Join" from\_port="join" to\_op="Age (Dod-Dob)" to\_port="in 1"/>

<connect from\_op="Age (Dod-Dob)" from\_port="out 1" to\_op="Filter Adults" to\_port="example set input"/>

<connect from\_op="Filter Adults" from\_port="example set output" to\_op="Join All" to\_port="left"/>

<connect from\_op="Guess Types (2)" from\_port="example set output" to\_op="Join All" to\_port="right"/>

<connect from\_op="Join All" from\_port="join" to\_op="Select Attributes" to\_port="example set input"/>

<connect from\_op="Select Attributes" from\_port="example set output" to\_op="Replace Missing Values" to\_port="example set input"/>

<connect from\_op="Replace Missing Values" from\_port="example set output" to\_op="Nominal to Numerical (3)" to\_port="example set input"/>

<connect from\_op="Nominal to Numerical (3)" from\_port="example set output" to\_op="Nominal to Numerical (4)" to\_port="example set input"/>

<connect from\_op="Nominal to Numerical (4)" from\_port="example set output" to\_op="Nominal to Binominal" to\_port="example set input"/>

<connect from\_op="Nominal to Binominal" from\_port="example set output" to\_op="Remap Binominals" to\_port="example set input"/>

<connect from\_op="Remap Binominals" from\_port="example set output" to\_op="Split Data (3)" to\_port="example set"/>

<connect from\_op="Split Data (3)" from\_port="partition 1" to\_port="out 1"/>

<connect from\_op="Split Data (3)" from\_port="partition 2" to\_port="out 2"/>

<portSpacing port="source\_in 1" spacing="0"/>

<portSpacing port="source\_in 2" spacing="0"/>

<portSpacing port="source\_in 3" spacing="0"/>

<portSpacing port="source\_in 4" spacing="0"/>

<portSpacing port="sink\_out 1" spacing="0"/>

<portSpacing port="sink\_out 2" spacing="0"/>

<portSpacing port="sink\_out 3" spacing="0"/>

</process>

</operator>

<operator activated="true" class="loop" compatibility="6.5.002" expanded="true" height="94" name="Loop (2)" width="90" x="447" y="165">

<parameter key="set\_iteration\_macro" value="true"/>

<parameter key="macro\_name" value="iterationWeights"/>

<parameter key="iterations" value="6"/>

<parameter key="parallelize\_iteration" value="true"/>

<process expanded="true">

<operator activated="true" class="loop" compatibility="6.5.002" expanded="true" height="94" name="Loop" width="90" x="313" y="30">

<parameter key="set\_iteration\_macro" value="true"/>

<parameter key="macro\_start\_value" value="16"/>

<parameter key="parallelize\_iteration" value="true"/>

<process expanded="true">

<operator activated="false" class="loop\_parameters" compatibility="6.5.002" expanded="true" height="112" name="Loop Parameters" width="90" x="313" y="390">

<list key="parameters">

<parameter key="Select by Weights (3).k" value="[5;75;14;linear]"/>

</list>

<parameter key="parallelize\_subprocess" value="true"/>

<process expanded="true">

<operator activated="true" class="select\_by\_weights" compatibility="6.5.002" expanded="true" height="94" name="Select by Weights (3)" width="90" x="112" y="165">

<parameter key="weight\_relation" value="top k"/>

<parameter key="k" value="55"/>

</operator>

<operator activated="true" class="store" compatibility="6.5.002" expanded="true" height="60" name="Store (2)" width="90" x="246" y="345">

<parameter key="repository\_entry" value="FilterWeights/weights%{iterationWeights}"/>

</operator>

<operator activated="true" class="select\_subprocess" compatibility="6.5.002" expanded="true" height="76" name="Algorithms" width="90" x="447" y="165">

<parameter key="select\_which" value="%{iteration}"/>

<parameter key="parallelize\_selection\_1" value="true"/>

<parameter key="parallelize\_selection\_2" value="true"/>

<process expanded="true">

<operator activated="true" class="weka:W-DecisionStump" compatibility="5.3.001" expanded="true" height="76" name="W-DecisionStump" width="90" x="45" y="75"/>

<connect from\_port="input 1" to\_op="W-DecisionStump" to\_port="training set"/>

<connect from\_op="W-DecisionStump" from\_port="model" to\_port="output 1"/>

<portSpacing port="source\_input 1" spacing="0"/>

<portSpacing port="source\_input 2" spacing="0"/>

<portSpacing port="sink\_output 1" spacing="0"/>

<portSpacing port="sink\_output 2" spacing="0"/>

</process>

<process expanded="true">

<operator activated="true" class="decision\_stump" compatibility="6.5.002" expanded="true" height="76" name="Decision Stump" width="90" x="45" y="30"/>

<connect from\_port="input 1" to\_op="Decision Stump" to\_port="training set"/>

<connect from\_op="Decision Stump" from\_port="model" to\_port="output 1"/>

<portSpacing port="source\_input 1" spacing="0"/>

<portSpacing port="source\_input 2" spacing="0"/>

<portSpacing port="sink\_output 1" spacing="0"/>

<portSpacing port="sink\_output 2" spacing="0"/>

</process>

<process expanded="true">

<operator activated="true" class="weka:W-J48" compatibility="5.3.001" expanded="true" height="76" name="W-J48" width="90" x="112" y="30"/>

<connect from\_port="input 1" to\_op="W-J48" to\_port="training set"/>

<connect from\_op="W-J48" from\_port="model" to\_port="output 1"/>

<portSpacing port="source\_input 1" spacing="0"/>

<portSpacing port="source\_input 2" spacing="0"/>

<portSpacing port="sink\_output 1" spacing="0"/>

<portSpacing port="sink\_output 2" spacing="0"/>

</process>

<process expanded="true">

<operator activated="true" class="naive\_bayes" compatibility="6.5.002" expanded="true" height="76" name="Naive Bayes (6)" width="90" x="112" y="30"/>

<connect from\_port="input 1" to\_op="Naive Bayes (6)" to\_port="training set"/>

<connect from\_op="Naive Bayes (6)" from\_port="model" to\_port="output 1"/>

<portSpacing port="source\_input 1" spacing="0"/>

<portSpacing port="source\_input 2" spacing="0"/>

<portSpacing port="sink\_output 1" spacing="0"/>

<portSpacing port="sink\_output 2" spacing="0"/>

</process>

<process expanded="true">

<operator activated="true" class="weka:W-Logistic" compatibility="5.3.001" expanded="true" height="76" name="W-Logistic" width="90" x="45" y="30"/>

<connect from\_port="input 1" to\_op="W-Logistic" to\_port="training set"/>

<connect from\_op="W-Logistic" from\_port="model" to\_port="output 1"/>

<portSpacing port="source\_input 1" spacing="0"/>

<portSpacing port="source\_input 2" spacing="0"/>

<portSpacing port="sink\_output 1" spacing="0"/>

<portSpacing port="sink\_output 2" spacing="0"/>

</process>

<process expanded="true">

<operator activated="true" class="parallel\_random\_forest" compatibility="6.5.002" expanded="true" height="76" name="RF - Rapid" width="90" x="45" y="30">

<parameter key="number\_of\_trees" value="30"/>

</operator>

<connect from\_port="input 1" to\_op="RF - Rapid" to\_port="training set"/>

<connect from\_op="RF - Rapid" from\_port="model" to\_port="output 1"/>

<portSpacing port="source\_input 1" spacing="0"/>

<portSpacing port="source\_input 2" spacing="0"/>

<portSpacing port="sink\_output 1" spacing="0"/>

<portSpacing port="sink\_output 2" spacing="0"/>

</process>

<process expanded="true">

<operator activated="true" class="weka:W-RandomForest" compatibility="5.3.001" expanded="true" height="76" name="RF - Weka" width="90" x="45" y="30"/>

<connect from\_port="input 1" to\_op="RF - Weka" to\_port="training set"/>

<connect from\_op="RF - Weka" from\_port="model" to\_port="output 1"/>

<portSpacing port="source\_input 1" spacing="0"/>

<portSpacing port="source\_input 2" spacing="0"/>

<portSpacing port="sink\_output 1" spacing="0"/>

<portSpacing port="sink\_output 2" spacing="0"/>

</process>

<process expanded="true">

<operator activated="true" class="adaboost" compatibility="6.5.002" expanded="true" height="76" name="AdaBoost (DS)" width="90" x="45" y="30">

<parameter key="parallelize\_learning\_process" value="true"/>

<process expanded="true">

<operator activated="true" class="decision\_stump" compatibility="6.5.002" expanded="true" height="76" name="Decision Stump (2)" width="90" x="112" y="75"/>

<connect from\_port="training set" to\_op="Decision Stump (2)" to\_port="training set"/>

<connect from\_op="Decision Stump (2)" from\_port="model" to\_port="model"/>

<portSpacing port="source\_training set" spacing="0"/>

<portSpacing port="sink\_model" spacing="0"/>

</process>

</operator>

<connect from\_port="input 1" to\_op="AdaBoost (DS)" to\_port="training set"/>

<connect from\_op="AdaBoost (DS)" from\_port="model" to\_port="output 1"/>

<portSpacing port="source\_input 1" spacing="0"/>

<portSpacing port="source\_input 2" spacing="0"/>

<portSpacing port="sink\_output 1" spacing="0"/>

<portSpacing port="sink\_output 2" spacing="0"/>

</process>

<process expanded="true">

<operator activated="true" class="adaboost" compatibility="6.5.002" expanded="true" height="76" name="AdaBoost (J4.8)" width="90" x="45" y="30">

<parameter key="parallelize\_learning\_process" value="true"/>

<process expanded="true">

<operator activated="true" class="weka:W-J48" compatibility="5.3.001" expanded="true" height="76" name="W-J48 (2)" width="90" x="380" y="75"/>

<connect from\_port="training set" to\_op="W-J48 (2)" to\_port="training set"/>

<connect from\_op="W-J48 (2)" from\_port="model" to\_port="model"/>

<portSpacing port="source\_training set" spacing="0"/>

<portSpacing port="sink\_model" spacing="0"/>

</process>

</operator>

<connect from\_port="input 1" to\_op="AdaBoost (J4.8)" to\_port="training set"/>

<connect from\_op="AdaBoost (J4.8)" from\_port="model" to\_port="output 1"/>

<portSpacing port="source\_input 1" spacing="0"/>

<portSpacing port="source\_input 2" spacing="0"/>

<portSpacing port="sink\_output 1" spacing="0"/>

<portSpacing port="sink\_output 2" spacing="0"/>

</process>

<process expanded="true">

<operator activated="true" class="adaboost" compatibility="6.5.002" expanded="true" height="76" name="AdaBoost (NB)" width="90" x="45" y="30">

<parameter key="parallelize\_learning\_process" value="true"/>

<process expanded="true">

<operator activated="true" class="naive\_bayes" compatibility="6.5.002" expanded="true" height="76" name="Naive Bayes (8)" width="90" x="313" y="75"/>

<connect from\_port="training set" to\_op="Naive Bayes (8)" to\_port="training set"/>

<connect from\_op="Naive Bayes (8)" from\_port="model" to\_port="model"/>

<portSpacing port="source\_training set" spacing="0"/>

<portSpacing port="sink\_model" spacing="0"/>

</process>

</operator>

<connect from\_port="input 1" to\_op="AdaBoost (NB)" to\_port="training set"/>

<connect from\_op="AdaBoost (NB)" from\_port="model" to\_port="output 1"/>

<portSpacing port="source\_input 1" spacing="0"/>

<portSpacing port="source\_input 2" spacing="0"/>

<portSpacing port="sink\_output 1" spacing="0"/>

<portSpacing port="sink\_output 2" spacing="0"/>

</process>

<process expanded="true">

<operator activated="true" class="adaboost" compatibility="6.5.002" expanded="true" height="76" name="AdaBoost (LR)" width="90" x="45" y="30">

<parameter key="parallelize\_learning\_process" value="true"/>

<process expanded="true">

<operator activated="true" class="weka:W-Logistic" compatibility="5.3.001" expanded="true" height="76" name="W-Logistic (5)" width="90" x="313" y="75"/>

<connect from\_port="training set" to\_op="W-Logistic (5)" to\_port="training set"/>

<connect from\_op="W-Logistic (5)" from\_port="model" to\_port="model"/>

<portSpacing port="source\_training set" spacing="0"/>

<portSpacing port="sink\_model" spacing="0"/>

</process>

</operator>

<connect from\_port="input 1" to\_op="AdaBoost (LR)" to\_port="training set"/>

<connect from\_op="AdaBoost (LR)" from\_port="model" to\_port="output 1"/>

<portSpacing port="source\_input 1" spacing="0"/>

<portSpacing port="source\_input 2" spacing="0"/>

<portSpacing port="sink\_output 1" spacing="0"/>

<portSpacing port="sink\_output 2" spacing="0"/>

</process>

<process expanded="true">

<operator activated="true" class="bagging" compatibility="6.5.002" expanded="true" height="76" name="Bagging (DS)" width="90" x="112" y="30">

<parameter key="sample\_ratio" value="0.7"/>

<parameter key="use\_local\_random\_seed" value="true"/>

<parameter key="parallelize\_learning\_process" value="true"/>

<process expanded="true">

<operator activated="true" class="decision\_stump" compatibility="6.5.002" expanded="true" height="76" name="Decision Stump (3)" width="90" x="313" y="75"/>

<connect from\_port="training set" to\_op="Decision Stump (3)" to\_port="training set"/>

<connect from\_op="Decision Stump (3)" from\_port="model" to\_port="model"/>

<portSpacing port="source\_training set" spacing="0"/>

<portSpacing port="sink\_model" spacing="0"/>

</process>

</operator>

<connect from\_port="input 1" to\_op="Bagging (DS)" to\_port="training set"/>

<connect from\_op="Bagging (DS)" from\_port="model" to\_port="output 1"/>

<portSpacing port="source\_input 1" spacing="0"/>

<portSpacing port="source\_input 2" spacing="0"/>

<portSpacing port="sink\_output 1" spacing="0"/>

<portSpacing port="sink\_output 2" spacing="0"/>

</process>

<process expanded="true">

<operator activated="true" class="bagging" compatibility="6.5.002" expanded="true" height="76" name="Bagging (J4.8)" width="90" x="45" y="30">

<parameter key="sample\_ratio" value="0.7"/>

<parameter key="use\_local\_random\_seed" value="true"/>

<parameter key="parallelize\_learning\_process" value="true"/>

<process expanded="true">

<operator activated="true" class="weka:W-J48" compatibility="5.3.001" expanded="true" height="76" name="W-J48 (4)" width="90" x="246" y="75"/>

<connect from\_port="training set" to\_op="W-J48 (4)" to\_port="training set"/>

<connect from\_op="W-J48 (4)" from\_port="model" to\_port="model"/>

<portSpacing port="source\_training set" spacing="0"/>

<portSpacing port="sink\_model" spacing="0"/>

</process>

</operator>

<connect from\_port="input 1" to\_op="Bagging (J4.8)" to\_port="training set"/>

<connect from\_op="Bagging (J4.8)" from\_port="model" to\_port="output 1"/>

<portSpacing port="source\_input 1" spacing="0"/>

<portSpacing port="source\_input 2" spacing="0"/>

<portSpacing port="sink\_output 1" spacing="0"/>

<portSpacing port="sink\_output 2" spacing="0"/>

</process>

<process expanded="true">

<operator activated="true" class="bagging" compatibility="6.5.002" expanded="true" height="76" name="Bagging (NB)" width="90" x="85" y="30">

<parameter key="sample\_ratio" value="0.7"/>

<process expanded="true">

<operator activated="true" class="naive\_bayes" compatibility="6.5.002" expanded="true" height="76" name="Naive Bayes (9)" width="90" x="380" y="75"/>

<connect from\_port="training set" to\_op="Naive Bayes (9)" to\_port="training set"/>

<connect from\_op="Naive Bayes (9)" from\_port="model" to\_port="model"/>

<portSpacing port="source\_training set" spacing="0"/>

<portSpacing port="sink\_model" spacing="0"/>

</process>

</operator>

<connect from\_port="input 1" to\_op="Bagging (NB)" to\_port="training set"/>

<connect from\_op="Bagging (NB)" from\_port="model" to\_port="output 1"/>

<portSpacing port="source\_input 1" spacing="0"/>

<portSpacing port="source\_input 2" spacing="0"/>

<portSpacing port="sink\_output 1" spacing="0"/>

<portSpacing port="sink\_output 2" spacing="0"/>

</process>

<process expanded="true">

<operator activated="true" class="bagging" compatibility="6.5.002" expanded="true" height="76" name="Bagging (LR)" width="90" x="45" y="30">

<parameter key="sample\_ratio" value="0.7"/>

<parameter key="use\_local\_random\_seed" value="true"/>

<parameter key="parallelize\_learning\_process" value="true"/>

<process expanded="true">

<operator activated="true" class="weka:W-Logistic" compatibility="5.3.001" expanded="true" height="76" name="W-Logistic (4)" width="90" x="313" y="75"/>

<connect from\_port="training set" to\_op="W-Logistic (4)" to\_port="training set"/>

<connect from\_op="W-Logistic (4)" from\_port="model" to\_port="model"/>

<portSpacing port="source\_training set" spacing="0"/>

<portSpacing port="sink\_model" spacing="0"/>

</process>

</operator>

<connect from\_port="input 1" to\_op="Bagging (LR)" to\_port="training set"/>

<connect from\_op="Bagging (LR)" from\_port="model" to\_port="output 1"/>

<portSpacing port="source\_input 1" spacing="0"/>

<portSpacing port="source\_input 2" spacing="0"/>

<portSpacing port="sink\_output 1" spacing="0"/>

<portSpacing port="sink\_output 2" spacing="0"/>

</process>

<process expanded="true">

<operator activated="true" class="stacking" compatibility="6.5.002" expanded="true" height="60" name="Stacking (NB J4.8 LR)" width="90" x="45" y="30">

<parameter key="parallelize\_base\_learner" value="true"/>

<parameter key="parallelize\_stacking\_model\_learner" value="true"/>

<process expanded="true">

<operator activated="true" class="naive\_bayes" compatibility="6.5.002" expanded="true" height="76" name="Naive Bayes (7)" width="90" x="112" y="75"/>

<operator activated="true" class="weka:W-Logistic" compatibility="5.3.001" expanded="true" height="76" name="W-Logistic (2)" width="90" x="112" y="210"/>

<operator activated="true" class="weka:W-J48" compatibility="5.3.001" expanded="true" height="76" name="W-J48 (3)" width="90" x="112" y="300"/>

<connect from\_port="training set 1" to\_op="Naive Bayes (7)" to\_port="training set"/>

<connect from\_port="training set 2" to\_op="W-Logistic (2)" to\_port="training set"/>

<connect from\_port="training set 3" to\_op="W-J48 (3)" to\_port="training set"/>

<connect from\_op="Naive Bayes (7)" from\_port="model" to\_port="base model 1"/>

<connect from\_op="W-Logistic (2)" from\_port="model" to\_port="base model 2"/>

<connect from\_op="W-J48 (3)" from\_port="model" to\_port="base model 3"/>

<portSpacing port="source\_training set 1" spacing="0"/>

<portSpacing port="source\_training set 2" spacing="0"/>

<portSpacing port="source\_training set 3" spacing="0"/>

<portSpacing port="source\_training set 4" spacing="0"/>

<portSpacing port="sink\_base model 1" spacing="0"/>

<portSpacing port="sink\_base model 2" spacing="0"/>

<portSpacing port="sink\_base model 3" spacing="0"/>

<portSpacing port="sink\_base model 4" spacing="0"/>

</process>

<process expanded="true">

<operator activated="true" class="weka:W-J48" compatibility="5.3.001" expanded="true" height="76" name="W-J48 (5)" width="90" x="112" y="75"/>

<connect from\_port="stacking examples" to\_op="W-J48 (5)" to\_port="training set"/>

<connect from\_op="W-J48 (5)" from\_port="model" to\_port="stacking model"/>

<portSpacing port="source\_stacking examples" spacing="0"/>

<portSpacing port="sink\_stacking model" spacing="0"/>

</process>

</operator>

<connect from\_port="input 1" to\_op="Stacking (NB J4.8 LR)" to\_port="training set"/>

<connect from\_op="Stacking (NB J4.8 LR)" from\_port="model" to\_port="output 1"/>

<portSpacing port="source\_input 1" spacing="0"/>

<portSpacing port="source\_input 2" spacing="0"/>

<portSpacing port="sink\_output 1" spacing="0"/>

<portSpacing port="sink\_output 2" spacing="0"/>

</process>

<process expanded="true">

<operator activated="true" class="multiply" compatibility="6.5.002" expanded="true" height="94" name="Multiply (5)" width="90" x="45" y="165"/>

<operator activated="true" class="optimize\_parameters\_evolutionary" compatibility="6.5.002" expanded="true" height="112" name="Optimize SVM" width="90" x="112" y="30">

<list key="parameters">

<parameter key="SVM (Linear).C" value="[0.000000001;100000]"/>

</list>

<parameter key="max\_generations" value="10"/>

<parameter key="use\_early\_stopping" value="true"/>

<parameter key="population\_size" value="10"/>

<parameter key="use\_local\_random\_seed" value="true"/>

<parameter key="parallelize\_optimization\_process" value="true"/>

<process expanded="true">

<operator activated="true" class="parallel:x\_validation\_parallel" compatibility="5.3.000" expanded="true" height="112" name="Validation (5)" width="90" x="246" y="120">

<parameter key="number\_of\_validations" value="5"/>

<parameter key="use\_local\_random\_seed" value="true"/>

<parameter key="parallelize\_training" value="true"/>

<parameter key="parallelize\_testing" value="true"/>

<process expanded="true">

<operator activated="true" class="support\_vector\_machine\_linear" compatibility="6.5.002" expanded="true" height="76" name="SVM (Linear)" width="90" x="179" y="75">

<parameter key="C" value="6120.417050152911"/>

</operator>

<connect from\_port="training" to\_op="SVM (Linear)" to\_port="training set"/>

<connect from\_op="SVM (Linear)" from\_port="model" to\_port="model"/>

<portSpacing port="source\_training" spacing="0"/>

<portSpacing port="sink\_model" spacing="0"/>

<portSpacing port="sink\_through 1" spacing="0"/>

</process>

<process expanded="true">

<operator activated="true" class="apply\_model" compatibility="6.5.002" expanded="true" height="76" name="Apply Model (7)" width="90" x="112" y="120">

<list key="application\_parameters"/>

</operator>

<operator activated="true" class="subprocess" compatibility="6.5.002" expanded="true" height="76" name="AUPRC Optim param I" width="90" x="246" y="120">

<process expanded="true">

<operator activated="true" class="rename" compatibility="6.5.002" expanded="true" height="76" name="Rename (2)" width="90" x="45" y="30">

<parameter key="old\_name" value="confidence(N)"/>

<parameter key="new\_name" value="noconf"/>

<list key="rename\_additional\_attributes">

<parameter key="confidence(Y)" value="yesconf"/>

</list>

</operator>

<operator activated="true" class="r\_scripting:execute\_r" compatibility="6.5.000" expanded="true" height="76" name="Execute R (2)" width="90" x="179" y="30">

<parameter key="script" value="# rm\_main is a mandatory function, &#10;# the number of arguments has to be the number of input ports (can be none)&#10;rm\_main = function(data)&#10;{&#10; library(PRROC)&#10; data$class[data$icustay\_expire\_flg== &quot;Y&quot;]&lt;-1 &#10; data$class[data$icustay\_expire\_flg== &quot;N&quot;]&lt;-0&#10; data$class &lt;- as.numeric(data$class)&#10; x=pr.curve(scores.class0 = data$yesconf, weights.class0 = data$class)&#10; #y=roc.curve(scores.class0 = data$yesconf, weights.class0 = data$class)&#10; &#10; #a&lt;-x$auc.integral&#10; data$AUPRC&lt;- x$auc.integral&#10; #data$AUC &lt;- y$auc.integral&#10; metaData$data$AUPRC &lt;&lt;- list(type=&quot;numeric&quot;, role=&quot;performance&quot;)&#10; #metaData$data$AUC &lt;&lt;- list(type=&quot;numeric&quot;, role=&quot;performance&quot;)&#10; return(data)&#10;}&#10;"/>

</operator>

<operator activated="true" class="extract\_performance" compatibility="6.5.002" expanded="true" height="76" name="AUPRC (2)" width="90" x="313" y="30">

<parameter key="performance\_type" value="data\_value"/>

<parameter key="attribute\_name" value="AUPRC"/>

<parameter key="example\_index" value="1"/>

</operator>

<connect from\_port="in 1" to\_op="Rename (2)" to\_port="example set input"/>

<connect from\_op="Rename (2)" from\_port="example set output" to\_op="Execute R (2)" to\_port="input 1"/>

<connect from\_op="Execute R (2)" from\_port="output 1" to\_op="AUPRC (2)" to\_port="example set"/>

<connect from\_op="AUPRC (2)" from\_port="performance" to\_port="out 1"/>

<portSpacing port="source\_in 1" spacing="0"/>

<portSpacing port="source\_in 2" spacing="0"/>

<portSpacing port="sink\_out 1" spacing="0"/>

<portSpacing port="sink\_out 2" spacing="0"/>

</process>

</operator>

<operator activated="false" class="performance\_binominal\_classification" compatibility="6.5.002" expanded="true" height="76" name="Performance (6)" width="90" x="246" y="300">

<parameter key="accuracy" value="false"/>

<parameter key="f\_measure" value="true"/>

</operator>

<connect from\_port="model" to\_op="Apply Model (7)" to\_port="model"/>

<connect from\_port="test set" to\_op="Apply Model (7)" to\_port="unlabelled data"/>

<connect from\_op="Apply Model (7)" from\_port="labelled data" to\_op="AUPRC Optim param I" to\_port="in 1"/>

<connect from\_op="AUPRC Optim param I" from\_port="out 1" to\_port="averagable 1"/>

<portSpacing port="source\_model" spacing="0"/>

<portSpacing port="source\_test set" spacing="0"/>

<portSpacing port="source\_through 1" spacing="0"/>

<portSpacing port="sink\_averagable 1" spacing="0"/>

<portSpacing port="sink\_averagable 2" spacing="0"/>

</process>

</operator>

<connect from\_port="input 1" to\_op="Validation (5)" to\_port="training"/>

<connect from\_op="Validation (5)" from\_port="model" to\_port="result 1"/>

<connect from\_op="Validation (5)" from\_port="averagable 1" to\_port="performance"/>

<portSpacing port="source\_input 1" spacing="0"/>

<portSpacing port="source\_input 2" spacing="0"/>

<portSpacing port="sink\_performance" spacing="0"/>

<portSpacing port="sink\_result 1" spacing="0"/>

<portSpacing port="sink\_result 2" spacing="0"/>

</process>

</operator>

<operator activated="true" class="set\_parameters" compatibility="6.5.002" expanded="true" height="76" name="Set Parameters" width="90" x="246" y="165">

<list key="name\_map">

<parameter key="SVM (Linear)" value=" Optimal SVM Linear"/>

</list>

</operator>

<operator activated="true" class="support\_vector\_machine\_linear" compatibility="6.5.002" expanded="true" height="76" name="Optimal SVM Linear" width="90" x="179" y="300"/>

<connect from\_port="input 1" to\_op="Multiply (5)" to\_port="input"/>

<connect from\_op="Multiply (5)" from\_port="output 1" to\_op="Optimize SVM" to\_port="input 1"/>

<connect from\_op="Multiply (5)" from\_port="output 2" to\_op="Optimal SVM Linear" to\_port="training set"/>

<connect from\_op="Optimize SVM" from\_port="parameter" to\_op="Set Parameters" to\_port="parameter set"/>

<connect from\_op="Optimal SVM Linear" from\_port="model" to\_port="output 1"/>

<portSpacing port="source\_input 1" spacing="0"/>

<portSpacing port="source\_input 2" spacing="0"/>

<portSpacing port="sink\_output 1" spacing="0"/>

<portSpacing port="sink\_output 2" spacing="0"/>

</process>

<process expanded="true">

<operator activated="true" class="multiply" compatibility="6.5.002" expanded="true" height="94" name="Multiply (6)" width="90" x="45" y="165"/>

<operator activated="true" class="support\_vector\_machine\_libsvm" compatibility="6.5.002" expanded="true" height="76" name="Optimal SVM rbf" width="90" x="246" y="300">

<parameter key="C" value="68146.13250384372"/>

<parameter key="nu" value="0.12334713683253792"/>

<list key="class\_weights"/>

</operator>

<operator activated="true" class="optimize\_parameters\_evolutionary" compatibility="6.5.002" expanded="true" height="112" name="Optimize Parameters (5)" width="90" x="112" y="30">

<list key="parameters">

<parameter key="SVM (rbf).C" value="[0.000000001;100000]"/>

<parameter key="SVM (rbf).nu" value="[0.001;2]"/>

</list>

<parameter key="max\_generations" value="10"/>

<parameter key="use\_early\_stopping" value="true"/>

<parameter key="population\_size" value="10"/>

<parameter key="use\_local\_random\_seed" value="true"/>

<parameter key="parallelize\_optimization\_process" value="true"/>

<process expanded="true">

<operator activated="true" class="parallel:x\_validation\_parallel" compatibility="5.3.000" expanded="true" height="112" name="Validation (7)" width="90" x="380" y="120">

<parameter key="number\_of\_validations" value="5"/>

<parameter key="use\_local\_random\_seed" value="true"/>

<parameter key="parallelize\_training" value="true"/>

<parameter key="parallelize\_testing" value="true"/>

<process expanded="true">

<operator activated="true" class="support\_vector\_machine\_libsvm" compatibility="6.5.002" expanded="true" height="76" name="SVM (rbf)" width="90" x="179" y="75">

<parameter key="C" value="68146.13250384372"/>

<parameter key="nu" value="0.12334713683253792"/>

<list key="class\_weights"/>

</operator>

<connect from\_port="training" to\_op="SVM (rbf)" to\_port="training set"/>

<connect from\_op="SVM (rbf)" from\_port="model" to\_port="model"/>

<portSpacing port="source\_training" spacing="0"/>

<portSpacing port="sink\_model" spacing="0"/>

<portSpacing port="sink\_through 1" spacing="0"/>

</process>

<process expanded="true">

<operator activated="true" class="apply\_model" compatibility="6.5.002" expanded="true" height="76" name="Apply Model (9)" width="90" x="112" y="120">

<list key="application\_parameters"/>

</operator>

<operator activated="true" class="subprocess" compatibility="6.5.002" expanded="true" height="76" name="AUPRC Param Optim II" width="90" x="246" y="120">

<process expanded="true">

<operator activated="true" class="rename" compatibility="6.5.002" expanded="true" height="76" name="Rename (3)" width="90" x="45" y="30">

<parameter key="old\_name" value="confidence(N)"/>

<parameter key="new\_name" value="noconf"/>

<list key="rename\_additional\_attributes">

<parameter key="confidence(Y)" value="yesconf"/>

</list>

</operator>

<operator activated="true" class="r\_scripting:execute\_r" compatibility="6.5.000" expanded="true" height="76" name="Execute R (4)" width="90" x="179" y="30">

<parameter key="script" value="# rm\_main is a mandatory function, &#10;# the number of arguments has to be the number of input ports (can be none)&#10;rm\_main = function(data)&#10;{&#10; library(PRROC)&#10; data$class[data$icustay\_expire\_flg== &quot;Y&quot;]&lt;-1 &#10; data$class[data$icustay\_expire\_flg== &quot;N&quot;]&lt;-0&#10; data$class &lt;- as.numeric(data$class)&#10; x=pr.curve(scores.class0 = data$yesconf, weights.class0 = data$class)&#10; #y=roc.curve(scores.class0 = data$yesconf, weights.class0 = data$class)&#10; &#10; #a&lt;-x$auc.integral&#10; data$AUPRC&lt;- x$auc.integral&#10; #data$AUC &lt;- y$auc.integral&#10; metaData$data$AUPRC &lt;&lt;- list(type=&quot;numeric&quot;, role=&quot;performance&quot;)&#10; #metaData$data$AUC &lt;&lt;- list(type=&quot;numeric&quot;, role=&quot;performance&quot;)&#10; return(data)&#10;}&#10;"/>

</operator>

<operator activated="true" class="extract\_performance" compatibility="6.5.002" expanded="true" height="76" name="AUPRC (3)" width="90" x="313" y="30">

<parameter key="performance\_type" value="data\_value"/>

<parameter key="attribute\_name" value="AUPRC"/>

<parameter key="example\_index" value="1"/>

</operator>

<connect from\_port="in 1" to\_op="Rename (3)" to\_port="example set input"/>

<connect from\_op="Rename (3)" from\_port="example set output" to\_op="Execute R (4)" to\_port="input 1"/>

<connect from\_op="Execute R (4)" from\_port="output 1" to\_op="AUPRC (3)" to\_port="example set"/>

<connect from\_op="AUPRC (3)" from\_port="performance" to\_port="out 1"/>

<portSpacing port="source\_in 1" spacing="0"/>

<portSpacing port="source\_in 2" spacing="0"/>

<portSpacing port="sink\_out 1" spacing="0"/>

<portSpacing port="sink\_out 2" spacing="0"/>

</process>

</operator>

<operator activated="false" class="performance\_binominal\_classification" compatibility="6.5.002" expanded="true" height="76" name="Performance (8)" width="90" x="246" y="345">

<parameter key="accuracy" value="false"/>

<parameter key="f\_measure" value="true"/>

</operator>

<connect from\_port="model" to\_op="Apply Model (9)" to\_port="model"/>

<connect from\_port="test set" to\_op="Apply Model (9)" to\_port="unlabelled data"/>

<connect from\_op="Apply Model (9)" from\_port="labelled data" to\_op="AUPRC Param Optim II" to\_port="in 1"/>

<connect from\_op="AUPRC Param Optim II" from\_port="out 1" to\_port="averagable 1"/>

<portSpacing port="source\_model" spacing="0"/>

<portSpacing port="source\_test set" spacing="0"/>

<portSpacing port="source\_through 1" spacing="0"/>

<portSpacing port="sink\_averagable 1" spacing="0"/>

<portSpacing port="sink\_averagable 2" spacing="0"/>

</process>

</operator>

<connect from\_port="input 1" to\_op="Validation (7)" to\_port="training"/>

<connect from\_op="Validation (7)" from\_port="model" to\_port="result 1"/>

<connect from\_op="Validation (7)" from\_port="averagable 1" to\_port="performance"/>

<portSpacing port="source\_input 1" spacing="0"/>

<portSpacing port="source\_input 2" spacing="0"/>

<portSpacing port="sink\_performance" spacing="0"/>

<portSpacing port="sink\_result 1" spacing="0"/>

<portSpacing port="sink\_result 2" spacing="0"/>

</process>

</operator>

<operator activated="true" class="set\_parameters" compatibility="6.5.002" expanded="true" height="76" name="Set Parameters (2)" width="90" x="246" y="120">

<list key="name\_map">

<parameter key="SVM (rbf)" value="Optimal SVM rbf"/>

</list>

</operator>

<connect from\_port="input 1" to\_op="Multiply (6)" to\_port="input"/>

<connect from\_op="Multiply (6)" from\_port="output 1" to\_op="Optimize Parameters (5)" to\_port="input 1"/>

<connect from\_op="Multiply (6)" from\_port="output 2" to\_op="Optimal SVM rbf" to\_port="training set"/>

<connect from\_op="Optimal SVM rbf" from\_port="model" to\_port="output 1"/>

<connect from\_op="Optimize Parameters (5)" from\_port="parameter" to\_op="Set Parameters (2)" to\_port="parameter set"/>

<portSpacing port="source\_input 1" spacing="0"/>

<portSpacing port="source\_input 2" spacing="0"/>

<portSpacing port="sink\_output 1" spacing="0"/>

<portSpacing port="sink\_output 2" spacing="0"/>

</process>

<process expanded="true">

<operator activated="true" class="weka:W-SMO" compatibility="5.3.001" expanded="true" height="76" name="W-SMO" width="90" x="45" y="120"/>

<connect from\_port="input 1" to\_op="W-SMO" to\_port="training set"/>

<connect from\_op="W-SMO" from\_port="model" to\_port="output 1"/>

<portSpacing port="source\_input 1" spacing="0"/>

<portSpacing port="source\_input 2" spacing="0"/>

<portSpacing port="sink\_output 1" spacing="0"/>

<portSpacing port="sink\_output 2" spacing="0"/>

</process>

</operator>

<operator activated="true" class="apply\_model" compatibility="6.5.002" expanded="true" height="76" name="Apply Model (6)" width="90" x="648" y="255">

<list key="application\_parameters"/>

</operator>

<operator activated="true" class="subprocess" compatibility="6.5.002" expanded="true" height="76" name="Subprocess (2)" width="90" x="782" y="255">

<parameter key="parallelize\_nested\_process" value="true"/>

<process expanded="true">

<operator activated="true" class="rename" compatibility="6.5.002" expanded="true" height="76" name="Rename" width="90" x="45" y="30">

<parameter key="old\_name" value="confidence(N)"/>

<parameter key="new\_name" value="noconf"/>

<list key="rename\_additional\_attributes">

<parameter key="confidence(Y)" value="yesconf"/>

</list>

</operator>

<operator activated="true" class="r\_scripting:execute\_r" compatibility="6.5.000" expanded="true" height="76" name="Execute R (3)" width="90" x="179" y="30">

<parameter key="script" value="# rm\_main is a mandatory function, &#10;# the number of arguments has to be the number of input ports (can be none)&#10;rm\_main = function(data)&#10;{&#10; library(PRROC)&#10; data$class[data$icustay\_expire\_flg== &quot;Y&quot;]&lt;-1 &#10; data$class[data$icustay\_expire\_flg== &quot;N&quot;]&lt;-0&#10; data$class &lt;- as.numeric(data$class)&#10; x=pr.curve(scores.class0 = data$yesconf, weights.class0 = data$class)&#10; #y=roc.curve(scores.class0 = data$yesconf, weights.class0 = data$class)&#10; &#10; #a&lt;-x$auc.integral&#10; data$AUPRC&lt;- x$auc.integral&#10; #data$AUC &lt;- y$auc.integral&#10; metaData$data$AUPRC &lt;&lt;- list(type=&quot;numeric&quot;, role=&quot;performance&quot;)&#10; #metaData$data$AUC &lt;&lt;- list(type=&quot;numeric&quot;, role=&quot;performance&quot;)&#10; return(data)&#10;}&#10;"/>

</operator>

<operator activated="true" class="extract\_performance" compatibility="6.5.002" expanded="true" height="76" name="AUPRC" width="90" x="313" y="30">

<parameter key="performance\_type" value="data\_value"/>

<parameter key="attribute\_name" value="AUPRC"/>

<parameter key="example\_index" value="1"/>

</operator>

<connect from\_port="in 1" to\_op="Rename" to\_port="example set input"/>

<connect from\_op="Rename" from\_port="example set output" to\_op="Execute R (3)" to\_port="input 1"/>

<connect from\_op="Execute R (3)" from\_port="output 1" to\_op="AUPRC" to\_port="example set"/>

<connect from\_op="AUPRC" from\_port="performance" to\_port="out 1"/>

<portSpacing port="source\_in 1" spacing="0"/>

<portSpacing port="source\_in 2" spacing="0"/>

<portSpacing port="sink\_out 1" spacing="0"/>

<portSpacing port="sink\_out 2" spacing="0"/>

</process>

</operator>

<operator activated="true" class="log" compatibility="6.5.002" expanded="true" height="76" name="Log (2)" width="90" x="916" y="255">

<parameter key="filename" value="C:\Users\Milan Vukicevic\Dropbox\SCOPES\Papers\Sven\MIMIC II\results\LogLastWeights.log"/>

<list key="log">

<parameter key="AUC" value="operator.Performance (3).value.AUC"/>

<parameter key="F measure" value="operator.Performance (3).value.f\_measure"/>

<parameter key="Recall" value="operator.Performance (3).value.recall"/>

<parameter key="Precision" value="operator.Performance (3).value.precision"/>

<parameter key="Sensitivity" value="operator.Performance (3).value.sensitivity"/>

<parameter key="Specificity" value="operator.Performance (3).value.specificity"/>

<parameter key="Algorithm" value="operator.Loop.value.iteration"/>

<parameter key="FS method" value="operator.Loop (2).value.iteration"/>

<parameter key="Parameters" value="operator.Loop Parameters.value.iteration"/>

</list>

<parameter key="persistent" value="true"/>

</operator>

<connect from\_port="input 1" to\_op="Select by Weights (3)" to\_port="example set input"/>

<connect from\_port="input 2" to\_op="Select by Weights (3)" to\_port="weights"/>

<connect from\_port="input 3" to\_op="Apply Model (6)" to\_port="unlabelled data"/>

<connect from\_op="Select by Weights (3)" from\_port="example set output" to\_op="Algorithms" to\_port="input 1"/>

<connect from\_op="Select by Weights (3)" from\_port="weights" to\_op="Store (2)" to\_port="input"/>

<connect from\_op="Algorithms" from\_port="output 1" to\_op="Apply Model (6)" to\_port="model"/>

<connect from\_op="Apply Model (6)" from\_port="labelled data" to\_op="Subprocess (2)" to\_port="in 1"/>

<connect from\_op="Subprocess (2)" from\_port="out 1" to\_op="Log (2)" to\_port="through 1"/>

<connect from\_op="Log (2)" from\_port="through 1" to\_port="performance"/>

<portSpacing port="source\_input 1" spacing="0"/>

<portSpacing port="source\_input 2" spacing="0"/>

<portSpacing port="source\_input 3" spacing="0"/>

<portSpacing port="source\_input 4" spacing="0"/>

<portSpacing port="sink\_performance" spacing="0"/>

<portSpacing port="sink\_result 1" spacing="0"/>

</process>

</operator>

<operator activated="true" class="select\_subprocess" compatibility="6.5.002" expanded="true" height="112" name="Select Subprocess (2)" width="90" x="45" y="120">

<parameter key="select\_which" value="%{iterationWeights}"/>

<parameter key="parallelize\_selection\_1" value="true"/>

<parameter key="parallelize\_selection\_2" value="true"/>

<process expanded="true">

<operator activated="true" class="weight\_by\_information\_gain\_ratio" compatibility="6.5.002" expanded="true" height="76" name="Weight by Information Gain Ratio (2)" width="90" x="45" y="30">

<parameter key="normalize\_weights" value="true"/>

<parameter key="sort\_direction" value="descending"/>

</operator>

<connect from\_port="input 1" to\_op="Weight by Information Gain Ratio (2)" to\_port="example set"/>

<connect from\_port="input 2" to\_port="output 3"/>

<connect from\_op="Weight by Information Gain Ratio (2)" from\_port="weights" to\_port="output 2"/>

<connect from\_op="Weight by Information Gain Ratio (2)" from\_port="example set" to\_port="output 1"/>

<portSpacing port="source\_input 1" spacing="0"/>

<portSpacing port="source\_input 2" spacing="0"/>

<portSpacing port="source\_input 3" spacing="0"/>

<portSpacing port="sink\_output 1" spacing="0"/>

<portSpacing port="sink\_output 2" spacing="0"/>

<portSpacing port="sink\_output 3" spacing="0"/>

<portSpacing port="sink\_output 4" spacing="0"/>

</process>

<process expanded="true">

<operator activated="true" class="weka:W-ReliefFAttributeEval" compatibility="5.3.001" expanded="true" height="76" name="W-ReliefFAttributeEval (2)" width="90" x="112" y="30">

<parameter key="normalize\_weights" value="true"/>

<parameter key="sort\_direction" value="descending"/>

</operator>

<connect from\_port="input 1" to\_op="W-ReliefFAttributeEval (2)" to\_port="example set"/>

<connect from\_port="input 2" to\_port="output 3"/>

<connect from\_op="W-ReliefFAttributeEval (2)" from\_port="weights" to\_port="output 2"/>

<connect from\_op="W-ReliefFAttributeEval (2)" from\_port="example set" to\_port="output 1"/>

<portSpacing port="source\_input 1" spacing="0"/>

<portSpacing port="source\_input 2" spacing="0"/>

<portSpacing port="source\_input 3" spacing="0"/>

<portSpacing port="sink\_output 1" spacing="0"/>

<portSpacing port="sink\_output 2" spacing="0"/>

<portSpacing port="sink\_output 3" spacing="0"/>

<portSpacing port="sink\_output 4" spacing="0"/>

</process>

<process expanded="true">

<operator activated="true" class="featselext:mrmr\_feature\_selection" compatibility="1.1.004" expanded="true" height="76" name="MRMR-FS (2)" width="90" x="112" y="30">

<parameter key="normalize\_weights" value="true"/>

<parameter key="sort\_direction" value="descending"/>

</operator>

<connect from\_port="input 1" to\_op="MRMR-FS (2)" to\_port="example set"/>

<connect from\_port="input 2" to\_port="output 3"/>

<connect from\_op="MRMR-FS (2)" from\_port="weights" to\_port="output 2"/>

<connect from\_op="MRMR-FS (2)" from\_port="example set" to\_port="output 1"/>

<portSpacing port="source\_input 1" spacing="0"/>

<portSpacing port="source\_input 2" spacing="0"/>

<portSpacing port="source\_input 3" spacing="0"/>

<portSpacing port="sink\_output 1" spacing="0"/>

<portSpacing port="sink\_output 2" spacing="0"/>

<portSpacing port="sink\_output 3" spacing="0"/>

<portSpacing port="sink\_output 4" spacing="0"/>

</process>

<process expanded="true">

<operator activated="true" class="weight\_by\_correlation" compatibility="6.5.002" expanded="true" height="76" name="Weight by Correlation (2)" width="90" x="45" y="30">

<parameter key="normalize\_weights" value="true"/>

<parameter key="sort\_direction" value="descending"/>

</operator>

<connect from\_port="input 1" to\_op="Weight by Correlation (2)" to\_port="example set"/>

<connect from\_port="input 2" to\_port="output 3"/>

<connect from\_op="Weight by Correlation (2)" from\_port="weights" to\_port="output 2"/>

<connect from\_op="Weight by Correlation (2)" from\_port="example set" to\_port="output 1"/>

<portSpacing port="source\_input 1" spacing="0"/>

<portSpacing port="source\_input 2" spacing="0"/>

<portSpacing port="source\_input 3" spacing="0"/>

<portSpacing port="sink\_output 1" spacing="0"/>

<portSpacing port="sink\_output 2" spacing="0"/>

<portSpacing port="sink\_output 3" spacing="0"/>

<portSpacing port="sink\_output 4" spacing="0"/>

</process>

<process expanded="true">

<operator activated="true" class="weight\_by\_gini\_index" compatibility="6.5.002" expanded="true" height="76" name="Weight by Gini Index (2)" width="90" x="45" y="30">

<parameter key="normalize\_weights" value="true"/>

<parameter key="sort\_direction" value="descending"/>

</operator>

<connect from\_port="input 1" to\_op="Weight by Gini Index (2)" to\_port="example set"/>

<connect from\_port="input 2" to\_port="output 3"/>

<connect from\_op="Weight by Gini Index (2)" from\_port="weights" to\_port="output 2"/>

<connect from\_op="Weight by Gini Index (2)" from\_port="example set" to\_port="output 1"/>

<portSpacing port="source\_input 1" spacing="0"/>

<portSpacing port="source\_input 2" spacing="0"/>

<portSpacing port="source\_input 3" spacing="0"/>

<portSpacing port="sink\_output 1" spacing="0"/>

<portSpacing port="sink\_output 2" spacing="0"/>

<portSpacing port="sink\_output 3" spacing="0"/>

<portSpacing port="sink\_output 4" spacing="0"/>

</process>

<process expanded="true">

<operator activated="true" class="featselext:t\_test" compatibility="1.1.004" expanded="true" height="76" name="t-Test (2)" width="90" x="45" y="30"/>

<connect from\_port="input 1" to\_op="t-Test (2)" to\_port="example set"/>

<connect from\_port="input 2" to\_port="output 3"/>

<connect from\_op="t-Test (2)" from\_port="weights" to\_port="output 2"/>

<connect from\_op="t-Test (2)" from\_port="example set" to\_port="output 1"/>

<portSpacing port="source\_input 1" spacing="0"/>

<portSpacing port="source\_input 2" spacing="0"/>

<portSpacing port="source\_input 3" spacing="0"/>

<portSpacing port="sink\_output 1" spacing="0"/>

<portSpacing port="sink\_output 2" spacing="0"/>

<portSpacing port="sink\_output 3" spacing="0"/>

<portSpacing port="sink\_output 4" spacing="0"/>

</process>

</operator>

<operator activated="true" class="store" compatibility="6.5.002" expanded="true" height="60" name="Store (3)" width="90" x="179" y="300">

<parameter key="repository\_entry" value="FilterResults/Weights/weights%{iterationWeights}"/>

</operator>

<operator activated="true" class="optimize\_parameters\_grid" compatibility="6.5.002" expanded="true" height="94" name="Optimize Parameters (3)" width="90" x="246" y="120">

<list key="parameters">

<parameter key="OptimizeK.k" value="[5;75;14;linear]"/>

</list>

<parameter key="parallelize\_optimization\_process" value="true"/>

<process expanded="true">

<operator activated="true" class="x\_validation" compatibility="6.5.002" expanded="true" height="112" name="Validation (4)" width="90" x="246" y="75">

<parameter key="number\_of\_validations" value="5"/>

<parameter key="use\_local\_random\_seed" value="true"/>

<parameter key="parallelize\_training" value="true"/>

<parameter key="parallelize\_testing" value="true"/>

<process expanded="true">

<operator activated="true" class="retrieve" compatibility="6.5.002" expanded="true" height="60" name="Retrieve" width="90" x="45" y="165">

<parameter key="repository\_entry" value="FilterResults/Weights/weights%{iterationWeights}"/>

</operator>

<operator activated="true" class="select\_by\_weights" compatibility="6.5.002" expanded="true" height="94" name="OptimizeK" width="90" x="179" y="75">

<parameter key="weight\_relation" value="top k"/>

<parameter key="k" value="5"/>

</operator>

<operator activated="true" class="select\_subprocess" compatibility="6.5.002" expanded="true" height="76" name="Algorithms (2)" width="90" x="313" y="75">

<parameter key="select\_which" value="%{iteration}"/>

<parameter key="parallelize\_selection\_1" value="true"/>

<parameter key="parallelize\_selection\_2" value="true"/>

<process expanded="true">

<operator activated="true" class="weka:W-DecisionStump" compatibility="5.3.001" expanded="true" height="76" name="W-DecisionStump (2)" width="90" x="45" y="30"/>

<connect from\_port="input 1" to\_op="W-DecisionStump (2)" to\_port="training set"/>

<connect from\_op="W-DecisionStump (2)" from\_port="model" to\_port="output 1"/>

<portSpacing port="source\_input 1" spacing="0"/>

<portSpacing port="source\_input 2" spacing="0"/>

<portSpacing port="sink\_output 1" spacing="0"/>

<portSpacing port="sink\_output 2" spacing="0"/>

</process>

<process expanded="true">

<operator activated="true" class="decision\_stump" compatibility="6.5.002" expanded="true" height="76" name="Decision Stump (4)" width="90" x="45" y="30"/>

<connect from\_port="input 1" to\_op="Decision Stump (4)" to\_port="training set"/>

<connect from\_op="Decision Stump (4)" from\_port="model" to\_port="output 1"/>

<portSpacing port="source\_input 1" spacing="0"/>

<portSpacing port="source\_input 2" spacing="0"/>

<portSpacing port="sink\_output 1" spacing="0"/>

<portSpacing port="sink\_output 2" spacing="0"/>

</process>

<process expanded="true">

<operator activated="true" class="weka:W-J48" compatibility="5.3.001" expanded="true" height="76" name="W-J48 (6)" width="90" x="112" y="30"/>

<connect from\_port="input 1" to\_op="W-J48 (6)" to\_port="training set"/>

<connect from\_op="W-J48 (6)" from\_port="model" to\_port="output 1"/>

<portSpacing port="source\_input 1" spacing="0"/>

<portSpacing port="source\_input 2" spacing="0"/>

<portSpacing port="sink\_output 1" spacing="0"/>

<portSpacing port="sink\_output 2" spacing="0"/>

</process>

<process expanded="true">

<operator activated="true" class="naive\_bayes" compatibility="6.5.002" expanded="true" height="76" name="Naive Bayes (5)" width="90" x="112" y="30"/>

<connect from\_port="input 1" to\_op="Naive Bayes (5)" to\_port="training set"/>

<connect from\_op="Naive Bayes (5)" from\_port="model" to\_port="output 1"/>

<portSpacing port="source\_input 1" spacing="0"/>

<portSpacing port="source\_input 2" spacing="0"/>

<portSpacing port="sink\_output 1" spacing="0"/>

<portSpacing port="sink\_output 2" spacing="0"/>

</process>

<process expanded="true">

<operator activated="true" class="weka:W-Logistic" compatibility="5.3.001" expanded="true" height="76" name="W-Logistic (3)" width="90" x="45" y="30"/>

<connect from\_port="input 1" to\_op="W-Logistic (3)" to\_port="training set"/>

<connect from\_op="W-Logistic (3)" from\_port="model" to\_port="output 1"/>

<portSpacing port="source\_input 1" spacing="0"/>

<portSpacing port="source\_input 2" spacing="0"/>

<portSpacing port="sink\_output 1" spacing="0"/>

<portSpacing port="sink\_output 2" spacing="0"/>

</process>

<process expanded="true">

<operator activated="true" class="parallel\_random\_forest" compatibility="6.5.002" expanded="true" height="76" name="RF - Rapid (2)" width="90" x="45" y="30">

<parameter key="number\_of\_trees" value="30"/>

</operator>

<connect from\_port="input 1" to\_op="RF - Rapid (2)" to\_port="training set"/>

<connect from\_op="RF - Rapid (2)" from\_port="model" to\_port="output 1"/>

<portSpacing port="source\_input 1" spacing="0"/>

<portSpacing port="source\_input 2" spacing="0"/>

<portSpacing port="sink\_output 1" spacing="0"/>

<portSpacing port="sink\_output 2" spacing="0"/>

</process>

<process expanded="true">

<operator activated="true" class="weka:W-RandomForest" compatibility="5.3.001" expanded="true" height="76" name="RF - Weka (2)" width="90" x="45" y="30"/>

<connect from\_port="input 1" to\_op="RF - Weka (2)" to\_port="training set"/>

<connect from\_op="RF - Weka (2)" from\_port="model" to\_port="output 1"/>

<portSpacing port="source\_input 1" spacing="0"/>

<portSpacing port="source\_input 2" spacing="0"/>

<portSpacing port="sink\_output 1" spacing="0"/>

<portSpacing port="sink\_output 2" spacing="0"/>

</process>

<process expanded="true">

<operator activated="true" class="adaboost" compatibility="6.5.002" expanded="true" height="76" name="AdaBoost (2)" width="90" x="45" y="30">

<parameter key="parallelize\_learning\_process" value="true"/>

<process expanded="true">

<operator activated="true" class="decision\_stump" compatibility="6.5.002" expanded="true" height="76" name="Decision Stump (5)" width="90" x="112" y="75"/>

<connect from\_port="training set" to\_op="Decision Stump (5)" to\_port="training set"/>

<connect from\_op="Decision Stump (5)" from\_port="model" to\_port="model"/>

<portSpacing port="source\_training set" spacing="0"/>

<portSpacing port="sink\_model" spacing="0"/>

</process>

</operator>

<connect from\_port="input 1" to\_op="AdaBoost (2)" to\_port="training set"/>

<connect from\_op="AdaBoost (2)" from\_port="model" to\_port="output 1"/>

<portSpacing port="source\_input 1" spacing="0"/>

<portSpacing port="source\_input 2" spacing="0"/>

<portSpacing port="sink\_output 1" spacing="0"/>

<portSpacing port="sink\_output 2" spacing="0"/>

</process>

<process expanded="true">

<operator activated="true" class="adaboost" compatibility="6.5.002" expanded="true" height="76" name="AdaBoost (3)" width="90" x="45" y="30">

<parameter key="parallelize\_learning\_process" value="true"/>

<process expanded="true">

<operator activated="true" class="weka:W-J48" compatibility="5.3.001" expanded="true" height="76" name="W-J48 (7)" width="90" x="380" y="75"/>

<connect from\_port="training set" to\_op="W-J48 (7)" to\_port="training set"/>

<connect from\_op="W-J48 (7)" from\_port="model" to\_port="model"/>

<portSpacing port="source\_training set" spacing="0"/>

<portSpacing port="sink\_model" spacing="0"/>

</process>

</operator>

<connect from\_port="input 1" to\_op="AdaBoost (3)" to\_port="training set"/>

<connect from\_op="AdaBoost (3)" from\_port="model" to\_port="output 1"/>

<portSpacing port="source\_input 1" spacing="0"/>

<portSpacing port="source\_input 2" spacing="0"/>

<portSpacing port="sink\_output 1" spacing="0"/>

<portSpacing port="sink\_output 2" spacing="0"/>

</process>

<process expanded="true">

<operator activated="true" class="adaboost" compatibility="6.5.002" expanded="true" height="76" name="AdaBoost (4)" width="90" x="45" y="30">

<parameter key="parallelize\_learning\_process" value="true"/>

<process expanded="true">

<operator activated="true" class="naive\_bayes" compatibility="6.5.002" expanded="true" height="76" name="Naive Bayes (10)" width="90" x="313" y="75"/>

<connect from\_port="training set" to\_op="Naive Bayes (10)" to\_port="training set"/>

<connect from\_op="Naive Bayes (10)" from\_port="model" to\_port="model"/>

<portSpacing port="source\_training set" spacing="0"/>

<portSpacing port="sink\_model" spacing="0"/>

</process>

</operator>

<connect from\_port="input 1" to\_op="AdaBoost (4)" to\_port="training set"/>

<connect from\_op="AdaBoost (4)" from\_port="model" to\_port="output 1"/>

<portSpacing port="source\_input 1" spacing="0"/>

<portSpacing port="source\_input 2" spacing="0"/>

<portSpacing port="sink\_output 1" spacing="0"/>

<portSpacing port="sink\_output 2" spacing="0"/>

</process>

<process expanded="true">

<operator activated="true" class="adaboost" compatibility="6.5.002" expanded="true" height="76" name="AdaBoost (5)" width="90" x="45" y="30">

<parameter key="parallelize\_learning\_process" value="true"/>

<process expanded="true">

<operator activated="true" class="weka:W-Logistic" compatibility="5.3.001" expanded="true" height="76" name="W-Logistic (6)" width="90" x="313" y="75"/>

<connect from\_port="training set" to\_op="W-Logistic (6)" to\_port="training set"/>

<connect from\_op="W-Logistic (6)" from\_port="model" to\_port="model"/>

<portSpacing port="source\_training set" spacing="0"/>

<portSpacing port="sink\_model" spacing="0"/>

</process>

</operator>

<connect from\_port="input 1" to\_op="AdaBoost (5)" to\_port="training set"/>

<connect from\_op="AdaBoost (5)" from\_port="model" to\_port="output 1"/>

<portSpacing port="source\_input 1" spacing="0"/>

<portSpacing port="source\_input 2" spacing="0"/>

<portSpacing port="sink\_output 1" spacing="0"/>

<portSpacing port="sink\_output 2" spacing="0"/>

</process>

<process expanded="true">

<operator activated="true" class="bagging" compatibility="6.5.002" expanded="true" height="76" name="Bagging (2)" width="90" x="112" y="30">

<parameter key="sample\_ratio" value="0.7"/>

<parameter key="use\_local\_random\_seed" value="true"/>

<parameter key="parallelize\_learning\_process" value="true"/>

<process expanded="true">

<operator activated="true" class="decision\_stump" compatibility="6.5.002" expanded="true" height="76" name="Decision Stump (6)" width="90" x="313" y="75"/>

<connect from\_port="training set" to\_op="Decision Stump (6)" to\_port="training set"/>

<connect from\_op="Decision Stump (6)" from\_port="model" to\_port="model"/>

<portSpacing port="source\_training set" spacing="0"/>

<portSpacing port="sink\_model" spacing="0"/>

</process>

</operator>

<connect from\_port="input 1" to\_op="Bagging (2)" to\_port="training set"/>

<connect from\_op="Bagging (2)" from\_port="model" to\_port="output 1"/>

<portSpacing port="source\_input 1" spacing="0"/>

<portSpacing port="source\_input 2" spacing="0"/>

<portSpacing port="sink\_output 1" spacing="0"/>

<portSpacing port="sink\_output 2" spacing="0"/>

</process>

<process expanded="true">

<operator activated="true" class="bagging" compatibility="6.5.002" expanded="true" height="76" name="Bagging (3)" width="90" x="45" y="30">

<parameter key="sample\_ratio" value="0.7"/>

<parameter key="use\_local\_random\_seed" value="true"/>

<parameter key="parallelize\_learning\_process" value="true"/>

<process expanded="true">

<operator activated="true" class="weka:W-J48" compatibility="5.3.001" expanded="true" height="76" name="W-J48 (8)" width="90" x="246" y="75"/>

<connect from\_port="training set" to\_op="W-J48 (8)" to\_port="training set"/>

<connect from\_op="W-J48 (8)" from\_port="model" to\_port="model"/>

<portSpacing port="source\_training set" spacing="0"/>

<portSpacing port="sink\_model" spacing="0"/>

</process>

</operator>

<connect from\_port="input 1" to\_op="Bagging (3)" to\_port="training set"/>

<connect from\_op="Bagging (3)" from\_port="model" to\_port="output 1"/>

<portSpacing port="source\_input 1" spacing="0"/>

<portSpacing port="source\_input 2" spacing="0"/>

<portSpacing port="sink\_output 1" spacing="0"/>

<portSpacing port="sink\_output 2" spacing="0"/>

</process>

<process expanded="true">

<operator activated="true" class="bagging" compatibility="6.5.002" expanded="true" height="76" name="Bagging (4)" width="90" x="85" y="30">

<parameter key="sample\_ratio" value="0.7"/>

<process expanded="true">

<operator activated="true" class="naive\_bayes" compatibility="6.5.002" expanded="true" height="76" name="Naive Bayes (11)" width="90" x="380" y="75"/>

<connect from\_port="training set" to\_op="Naive Bayes (11)" to\_port="training set"/>

<connect from\_op="Naive Bayes (11)" from\_port="model" to\_port="model"/>

<portSpacing port="source\_training set" spacing="0"/>

<portSpacing port="sink\_model" spacing="0"/>

</process>

</operator>

<connect from\_port="input 1" to\_op="Bagging (4)" to\_port="training set"/>

<connect from\_op="Bagging (4)" from\_port="model" to\_port="output 1"/>

<portSpacing port="source\_input 1" spacing="0"/>

<portSpacing port="source\_input 2" spacing="0"/>

<portSpacing port="sink\_output 1" spacing="0"/>

<portSpacing port="sink\_output 2" spacing="0"/>

</process>

<process expanded="true">

<operator activated="true" class="bagging" compatibility="6.5.002" expanded="true" height="76" name="Bagging (5)" width="90" x="45" y="30">

<parameter key="sample\_ratio" value="0.7"/>

<parameter key="use\_local\_random\_seed" value="true"/>

<parameter key="parallelize\_learning\_process" value="true"/>

<process expanded="true">

<operator activated="true" class="weka:W-Logistic" compatibility="5.3.001" expanded="true" height="76" name="W-Logistic (7)" width="90" x="313" y="75"/>

<connect from\_port="training set" to\_op="W-Logistic (7)" to\_port="training set"/>

<connect from\_op="W-Logistic (7)" from\_port="model" to\_port="model"/>

<portSpacing port="source\_training set" spacing="0"/>

<portSpacing port="sink\_model" spacing="0"/>

</process>

</operator>

<connect from\_port="input 1" to\_op="Bagging (5)" to\_port="training set"/>

<connect from\_op="Bagging (5)" from\_port="model" to\_port="output 1"/>

<portSpacing port="source\_input 1" spacing="0"/>

<portSpacing port="source\_input 2" spacing="0"/>

<portSpacing port="sink\_output 1" spacing="0"/>

<portSpacing port="sink\_output 2" spacing="0"/>

</process>

<process expanded="true">

<operator activated="true" class="stacking" compatibility="6.5.002" expanded="true" height="60" name="Stacking (2)" width="90" x="45" y="30">

<parameter key="parallelize\_base\_learner" value="true"/>

<parameter key="parallelize\_stacking\_model\_learner" value="true"/>

<process expanded="true">

<operator activated="true" class="naive\_bayes" compatibility="6.5.002" expanded="true" height="76" name="Naive Bayes (12)" width="90" x="112" y="75"/>

<operator activated="true" class="weka:W-Logistic" compatibility="5.3.001" expanded="true" height="76" name="W-Logistic (8)" width="90" x="112" y="165"/>

<operator activated="true" class="weka:W-J48" compatibility="5.3.001" expanded="true" height="76" name="W-J48 (9)" width="90" x="112" y="255"/>

<connect from\_port="training set 1" to\_op="Naive Bayes (12)" to\_port="training set"/>

<connect from\_port="training set 2" to\_op="W-Logistic (8)" to\_port="training set"/>

<connect from\_port="training set 3" to\_op="W-J48 (9)" to\_port="training set"/>

<connect from\_op="Naive Bayes (12)" from\_port="model" to\_port="base model 1"/>

<connect from\_op="W-Logistic (8)" from\_port="model" to\_port="base model 2"/>

<connect from\_op="W-J48 (9)" from\_port="model" to\_port="base model 3"/>

<portSpacing port="source\_training set 1" spacing="0"/>

<portSpacing port="source\_training set 2" spacing="0"/>

<portSpacing port="source\_training set 3" spacing="0"/>

<portSpacing port="source\_training set 4" spacing="0"/>

<portSpacing port="sink\_base model 1" spacing="0"/>

<portSpacing port="sink\_base model 2" spacing="0"/>

<portSpacing port="sink\_base model 3" spacing="0"/>

<portSpacing port="sink\_base model 4" spacing="0"/>

</process>

<process expanded="true">

<operator activated="true" class="weka:W-J48" compatibility="5.3.001" expanded="true" height="76" name="W-J48 (10)" width="90" x="112" y="75"/>

<connect from\_port="stacking examples" to\_op="W-J48 (10)" to\_port="training set"/>

<connect from\_op="W-J48 (10)" from\_port="model" to\_port="stacking model"/>

<portSpacing port="source\_stacking examples" spacing="0"/>

<portSpacing port="sink\_stacking model" spacing="0"/>

</process>

</operator>

<connect from\_port="input 1" to\_op="Stacking (2)" to\_port="training set"/>

<connect from\_op="Stacking (2)" from\_port="model" to\_port="output 1"/>

<portSpacing port="source\_input 1" spacing="0"/>

<portSpacing port="source\_input 2" spacing="0"/>

<portSpacing port="sink\_output 1" spacing="0"/>

<portSpacing port="sink\_output 2" spacing="0"/>

</process>

<process expanded="true">

<operator activated="true" class="multiply" compatibility="6.5.002" expanded="true" height="94" name="Multiply (7)" width="90" x="45" y="165"/>

<operator activated="true" class="optimize\_parameters\_evolutionary" compatibility="6.5.002" expanded="true" height="112" name="Optimize SVM (2)" width="90" x="112" y="30">

<list key="parameters">

<parameter key="SVM (Linear).C" value="[0.000000001;100000]"/>

</list>

<parameter key="max\_generations" value="10"/>

<parameter key="use\_early\_stopping" value="true"/>

<parameter key="population\_size" value="10"/>

<parameter key="use\_local\_random\_seed" value="true"/>

<parameter key="parallelize\_optimization\_process" value="true"/>

<process expanded="true">

<operator activated="true" class="parallel:x\_validation\_parallel" compatibility="5.3.000" expanded="true" height="112" name="Validation (6)" width="90" x="246" y="120">

<parameter key="number\_of\_validations" value="5"/>

<parameter key="use\_local\_random\_seed" value="true"/>

<parameter key="parallelize\_training" value="true"/>

<parameter key="parallelize\_testing" value="true"/>

<process expanded="true">

<operator activated="true" class="support\_vector\_machine\_linear" compatibility="6.5.002" expanded="true" height="76" name="SVM (2)" width="90" x="179" y="75">

<parameter key="C" value="6120.417050152911"/>

</operator>

<connect from\_port="training" to\_op="SVM (2)" to\_port="training set"/>

<connect from\_op="SVM (2)" from\_port="model" to\_port="model"/>

<portSpacing port="source\_training" spacing="0"/>

<portSpacing port="sink\_model" spacing="0"/>

<portSpacing port="sink\_through 1" spacing="0"/>

</process>

<process expanded="true">

<operator activated="true" class="apply\_model" compatibility="6.5.002" expanded="true" height="76" name="Apply Model (8)" width="90" x="112" y="120">

<list key="application\_parameters"/>

</operator>

<operator activated="true" class="subprocess" compatibility="6.5.002" expanded="true" height="76" name="AUPRC Optim param I (2)" width="90" x="246" y="120">

<process expanded="true">

<operator activated="true" class="rename" compatibility="6.5.002" expanded="true" height="76" name="Rename (4)" width="90" x="45" y="30">

<parameter key="old\_name" value="confidence(N)"/>

<parameter key="new\_name" value="noconf"/>

<list key="rename\_additional\_attributes">

<parameter key="confidence(Y)" value="yesconf"/>

</list>

</operator>

<operator activated="true" class="r\_scripting:execute\_r" compatibility="6.5.000" expanded="true" height="76" name="Execute R (5)" width="90" x="179" y="30">

<parameter key="script" value="# rm\_main is a mandatory function, &#10;# the number of arguments has to be the number of input ports (can be none)&#10;rm\_main = function(data)&#10;{&#10; library(PRROC)&#10; data$class[data$icustay\_expire\_flg== &quot;Y&quot;]&lt;-1 &#10; data$class[data$icustay\_expire\_flg== &quot;N&quot;]&lt;-0&#10; data$class &lt;- as.numeric(data$class)&#10; x=pr.curve(scores.class0 = data$yesconf, weights.class0 = data$class)&#10; #y=roc.curve(scores.class0 = data$yesconf, weights.class0 = data$class)&#10; &#10; #a&lt;-x$auc.integral&#10; data$AUPRC&lt;- x$auc.integral&#10; #data$AUC &lt;- y$auc.integral&#10; metaData$data$AUPRC &lt;&lt;- list(type=&quot;numeric&quot;, role=&quot;performance&quot;)&#10; #metaData$data$AUC &lt;&lt;- list(type=&quot;numeric&quot;, role=&quot;performance&quot;)&#10; return(data)&#10;}&#10;"/>

</operator>

<operator activated="true" class="extract\_performance" compatibility="6.5.002" expanded="true" height="76" name="AUPRC (4)" width="90" x="313" y="30">

<parameter key="performance\_type" value="data\_value"/>

<parameter key="attribute\_name" value="AUPRC"/>

<parameter key="example\_index" value="1"/>

</operator>

<connect from\_port="in 1" to\_op="Rename (4)" to\_port="example set input"/>

<connect from\_op="Rename (4)" from\_port="example set output" to\_op="Execute R (5)" to\_port="input 1"/>

<connect from\_op="Execute R (5)" from\_port="output 1" to\_op="AUPRC (4)" to\_port="example set"/>

<connect from\_op="AUPRC (4)" from\_port="performance" to\_port="out 1"/>

<portSpacing port="source\_in 1" spacing="0"/>

<portSpacing port="source\_in 2" spacing="0"/>

<portSpacing port="sink\_out 1" spacing="0"/>

<portSpacing port="sink\_out 2" spacing="0"/>

</process>

</operator>

<operator activated="false" class="performance\_binominal\_classification" compatibility="6.5.002" expanded="true" height="76" name="Performance (3)" width="90" x="246" y="300">

<parameter key="accuracy" value="false"/>

<parameter key="f\_measure" value="true"/>

</operator>

<connect from\_port="model" to\_op="Apply Model (8)" to\_port="model"/>

<connect from\_port="test set" to\_op="Apply Model (8)" to\_port="unlabelled data"/>

<connect from\_op="Apply Model (8)" from\_port="labelled data" to\_op="AUPRC Optim param I (2)" to\_port="in 1"/>

<connect from\_op="AUPRC Optim param I (2)" from\_port="out 1" to\_port="averagable 1"/>

<portSpacing port="source\_model" spacing="0"/>

<portSpacing port="source\_test set" spacing="0"/>

<portSpacing port="source\_through 1" spacing="0"/>

<portSpacing port="sink\_averagable 1" spacing="0"/>

<portSpacing port="sink\_averagable 2" spacing="0"/>

</process>

</operator>

<connect from\_port="input 1" to\_op="Validation (6)" to\_port="training"/>

<connect from\_op="Validation (6)" from\_port="model" to\_port="result 1"/>

<connect from\_op="Validation (6)" from\_port="averagable 1" to\_port="performance"/>

<portSpacing port="source\_input 1" spacing="0"/>

<portSpacing port="source\_input 2" spacing="0"/>

<portSpacing port="sink\_performance" spacing="0"/>

<portSpacing port="sink\_result 1" spacing="0"/>

<portSpacing port="sink\_result 2" spacing="0"/>

</process>

</operator>

<operator activated="true" class="set\_parameters" compatibility="6.5.002" expanded="true" height="76" name="Set Parameters (3)" width="90" x="246" y="165">

<list key="name\_map">

<parameter key="SVM (Linear)" value=" Optimal SVM Linear"/>

</list>

</operator>

<operator activated="true" class="support\_vector\_machine\_linear" compatibility="6.5.002" expanded="true" height="76" name="Optimal SVM Linear (2)" width="90" x="179" y="300"/>

<connect from\_port="input 1" to\_op="Multiply (7)" to\_port="input"/>

<connect from\_op="Multiply (7)" from\_port="output 1" to\_op="Optimize SVM (2)" to\_port="input 1"/>

<connect from\_op="Multiply (7)" from\_port="output 2" to\_op="Optimal SVM Linear (2)" to\_port="training set"/>

<connect from\_op="Optimize SVM (2)" from\_port="parameter" to\_op="Set Parameters (3)" to\_port="parameter set"/>

<connect from\_op="Optimal SVM Linear (2)" from\_port="model" to\_port="output 1"/>

<portSpacing port="source\_input 1" spacing="0"/>

<portSpacing port="source\_input 2" spacing="0"/>

<portSpacing port="sink\_output 1" spacing="0"/>

<portSpacing port="sink\_output 2" spacing="0"/>

</process>

<process expanded="true">

<operator activated="true" class="multiply" compatibility="6.5.002" expanded="true" height="94" name="Multiply (8)" width="90" x="45" y="165"/>

<operator activated="true" class="support\_vector\_machine\_libsvm" compatibility="6.5.002" expanded="true" height="76" name="Optimal SVM rbf (2)" width="90" x="246" y="300">

<parameter key="C" value="68146.13250384372"/>

<parameter key="nu" value="0.12334713683253792"/>

<list key="class\_weights"/>

</operator>

<operator activated="true" class="optimize\_parameters\_evolutionary" compatibility="6.5.002" expanded="true" height="112" name="Optimize Parameters (4)" width="90" x="112" y="30">

<list key="parameters">

<parameter key="SVM (rbf).C" value="[0.000000001;100000]"/>

<parameter key="SVM (rbf).nu" value="[0.001;2]"/>

</list>

<parameter key="max\_generations" value="10"/>

<parameter key="use\_early\_stopping" value="true"/>

<parameter key="population\_size" value="10"/>

<parameter key="use\_local\_random\_seed" value="true"/>

<parameter key="parallelize\_optimization\_process" value="true"/>

<process expanded="true">

<operator activated="true" class="parallel:x\_validation\_parallel" compatibility="5.3.000" expanded="true" height="112" name="Validation (8)" width="90" x="380" y="120">

<parameter key="number\_of\_validations" value="5"/>

<parameter key="use\_local\_random\_seed" value="true"/>

<parameter key="parallelize\_training" value="true"/>

<parameter key="parallelize\_testing" value="true"/>

<process expanded="true">

<operator activated="true" class="support\_vector\_machine\_libsvm" compatibility="6.5.002" expanded="true" height="76" name="SVM (4)" width="90" x="179" y="75">

<parameter key="C" value="68146.13250384372"/>

<parameter key="nu" value="0.12334713683253792"/>

<list key="class\_weights"/>

</operator>

<connect from\_port="training" to\_op="SVM (4)" to\_port="training set"/>

<connect from\_op="SVM (4)" from\_port="model" to\_port="model"/>

<portSpacing port="source\_training" spacing="0"/>

<portSpacing port="sink\_model" spacing="0"/>

<portSpacing port="sink\_through 1" spacing="0"/>

</process>

<process expanded="true">

<operator activated="true" class="apply\_model" compatibility="6.5.002" expanded="true" height="76" name="Apply Model (10)" width="90" x="112" y="120">

<list key="application\_parameters"/>

</operator>

<operator activated="true" class="subprocess" compatibility="6.5.002" expanded="true" height="76" name="AUPRC Param Optim II (2)" width="90" x="246" y="120">

<process expanded="true">

<operator activated="true" class="rename" compatibility="6.5.002" expanded="true" height="76" name="Rename (5)" width="90" x="45" y="30">

<parameter key="old\_name" value="confidence(N)"/>

<parameter key="new\_name" value="noconf"/>

<list key="rename\_additional\_attributes">

<parameter key="confidence(Y)" value="yesconf"/>

</list>

</operator>

<operator activated="true" class="r\_scripting:execute\_r" compatibility="6.5.000" expanded="true" height="76" name="Execute R (6)" width="90" x="179" y="30">

<parameter key="script" value="# rm\_main is a mandatory function, &#10;# the number of arguments has to be the number of input ports (can be none)&#10;rm\_main = function(data)&#10;{&#10; library(PRROC)&#10; data$class[data$icustay\_expire\_flg== &quot;Y&quot;]&lt;-1 &#10; data$class[data$icustay\_expire\_flg== &quot;N&quot;]&lt;-0&#10; data$class &lt;- as.numeric(data$class)&#10; x=pr.curve(scores.class0 = data$yesconf, weights.class0 = data$class)&#10; #y=roc.curve(scores.class0 = data$yesconf, weights.class0 = data$class)&#10; &#10; #a&lt;-x$auc.integral&#10; data$AUPRC&lt;- x$auc.integral&#10; #data$AUC &lt;- y$auc.integral&#10; metaData$data$AUPRC &lt;&lt;- list(type=&quot;numeric&quot;, role=&quot;performance&quot;)&#10; #metaData$data$AUC &lt;&lt;- list(type=&quot;numeric&quot;, role=&quot;performance&quot;)&#10; return(data)&#10;}&#10;"/>

</operator>

<operator activated="true" class="extract\_performance" compatibility="6.5.002" expanded="true" height="76" name="AUPRC (5)" width="90" x="313" y="30">

<parameter key="performance\_type" value="data\_value"/>

<parameter key="attribute\_name" value="AUPRC"/>

<parameter key="example\_index" value="1"/>

</operator>

<connect from\_port="in 1" to\_op="Rename (5)" to\_port="example set input"/>

<connect from\_op="Rename (5)" from\_port="example set output" to\_op="Execute R (6)" to\_port="input 1"/>

<connect from\_op="Execute R (6)" from\_port="output 1" to\_op="AUPRC (5)" to\_port="example set"/>

<connect from\_op="AUPRC (5)" from\_port="performance" to\_port="out 1"/>

<portSpacing port="source\_in 1" spacing="0"/>

<portSpacing port="source\_in 2" spacing="0"/>

<portSpacing port="sink\_out 1" spacing="0"/>

<portSpacing port="sink\_out 2" spacing="0"/>

</process>

</operator>

<operator activated="false" class="performance\_binominal\_classification" compatibility="6.5.002" expanded="true" height="76" name="Performance (7)" width="90" x="246" y="345">

<parameter key="accuracy" value="false"/>

<parameter key="f\_measure" value="true"/>

</operator>

<connect from\_port="model" to\_op="Apply Model (10)" to\_port="model"/>

<connect from\_port="test set" to\_op="Apply Model (10)" to\_port="unlabelled data"/>

<connect from\_op="Apply Model (10)" from\_port="labelled data" to\_op="AUPRC Param Optim II (2)" to\_port="in 1"/>

<connect from\_op="AUPRC Param Optim II (2)" from\_port="out 1" to\_port="averagable 1"/>

<portSpacing port="source\_model" spacing="0"/>

<portSpacing port="source\_test set" spacing="0"/>

<portSpacing port="source\_through 1" spacing="0"/>

<portSpacing port="sink\_averagable 1" spacing="0"/>

<portSpacing port="sink\_averagable 2" spacing="0"/>

</process>

</operator>

<connect from\_port="input 1" to\_op="Validation (8)" to\_port="training"/>

<connect from\_op="Validation (8)" from\_port="model" to\_port="result 1"/>

<connect from\_op="Validation (8)" from\_port="averagable 1" to\_port="performance"/>

<portSpacing port="source\_input 1" spacing="0"/>

<portSpacing port="source\_input 2" spacing="0"/>

<portSpacing port="sink\_performance" spacing="0"/>

<portSpacing port="sink\_result 1" spacing="0"/>

<portSpacing port="sink\_result 2" spacing="0"/>

</process>

</operator>

<operator activated="true" class="set\_parameters" compatibility="6.5.002" expanded="true" height="76" name="Set Parameters (4)" width="90" x="246" y="120">

<list key="name\_map">

<parameter key="SVM (rbf)" value="Optimal SVM rbf"/>

</list>

</operator>

<connect from\_port="input 1" to\_op="Multiply (8)" to\_port="input"/>

<connect from\_op="Multiply (8)" from\_port="output 1" to\_op="Optimize Parameters (4)" to\_port="input 1"/>

<connect from\_op="Multiply (8)" from\_port="output 2" to\_op="Optimal SVM rbf (2)" to\_port="training set"/>

<connect from\_op="Optimal SVM rbf (2)" from\_port="model" to\_port="output 1"/>

<connect from\_op="Optimize Parameters (4)" from\_port="parameter" to\_op="Set Parameters (4)" to\_port="parameter set"/>

<portSpacing port="source\_input 1" spacing="0"/>

<portSpacing port="source\_input 2" spacing="0"/>

<portSpacing port="sink\_output 1" spacing="0"/>

<portSpacing port="sink\_output 2" spacing="0"/>

</process>

<process expanded="true">

<operator activated="true" class="weka:W-SMO" compatibility="5.3.001" expanded="true" height="76" name="W-SMO (2)" width="90" x="45" y="120"/>

<connect from\_port="input 1" to\_op="W-SMO (2)" to\_port="training set"/>

<connect from\_op="W-SMO (2)" from\_port="model" to\_port="output 1"/>

<portSpacing port="source\_input 1" spacing="0"/>

<portSpacing port="source\_input 2" spacing="0"/>

<portSpacing port="sink\_output 1" spacing="0"/>

<portSpacing port="sink\_output 2" spacing="0"/>

</process>

</operator>

<connect from\_port="training" to\_op="OptimizeK" to\_port="example set input"/>

<connect from\_op="Retrieve" from\_port="output" to\_op="OptimizeK" to\_port="weights"/>

<connect from\_op="OptimizeK" from\_port="example set output" to\_op="Algorithms (2)" to\_port="input 1"/>

<connect from\_op="Algorithms (2)" from\_port="output 1" to\_port="model"/>

<portSpacing port="source\_training" spacing="0"/>

<portSpacing port="sink\_model" spacing="0"/>

<portSpacing port="sink\_through 1" spacing="0"/>

</process>

<process expanded="true">

<operator activated="true" class="apply\_model" compatibility="6.5.002" expanded="true" height="76" name="Apply Model (11)" width="90" x="112" y="120">

<list key="application\_parameters"/>

</operator>

<operator activated="true" class="subprocess" compatibility="6.5.002" expanded="true" height="76" name="Subprocess (3)" width="90" x="246" y="120">

<parameter key="parallelize\_nested\_process" value="true"/>

<process expanded="true">

<operator activated="true" class="rename" compatibility="6.5.002" expanded="true" height="76" name="Rename (6)" width="90" x="45" y="30">

<parameter key="old\_name" value="confidence(N)"/>

<parameter key="new\_name" value="noconf"/>

<list key="rename\_additional\_attributes">

<parameter key="confidence(Y)" value="yesconf"/>

</list>

</operator>

<operator activated="true" class="r\_scripting:execute\_r" compatibility="6.5.000" expanded="true" height="76" name="Execute R (7)" width="90" x="179" y="30">

<parameter key="script" value="# rm\_main is a mandatory function, &#10;# the number of arguments has to be the number of input ports (can be none)&#10;rm\_main = function(data)&#10;{&#10; library(PRROC)&#10; data$class[data$icustay\_expire\_flg== &quot;Y&quot;]&lt;-1 &#10; data$class[data$icustay\_expire\_flg== &quot;N&quot;]&lt;-0&#10; data$class &lt;- as.numeric(data$class)&#10; x=pr.curve(scores.class0 = data$yesconf, weights.class0 = data$class)&#10; #y=roc.curve(scores.class0 = data$yesconf, weights.class0 = data$class)&#10; &#10; #a&lt;-x$auc.integral&#10; data$AUPRC&lt;- x$auc.integral&#10; #data$AUC &lt;- y$auc.integral&#10; metaData$data$AUPRC &lt;&lt;- list(type=&quot;numeric&quot;, role=&quot;performance&quot;)&#10; #metaData$data$AUC &lt;&lt;- list(type=&quot;numeric&quot;, role=&quot;performance&quot;)&#10; return(data)&#10;}&#10;"/>

</operator>

<operator activated="true" class="extract\_performance" compatibility="6.5.002" expanded="true" height="76" name="AUPRC (6)" width="90" x="313" y="30">

<parameter key="performance\_type" value="data\_value"/>

<parameter key="attribute\_name" value="AUPRC"/>

<parameter key="example\_index" value="1"/>

</operator>

<connect from\_port="in 1" to\_op="Rename (6)" to\_port="example set input"/>

<connect from\_op="Rename (6)" from\_port="example set output" to\_op="Execute R (7)" to\_port="input 1"/>

<connect from\_op="Execute R (7)" from\_port="output 1" to\_op="AUPRC (6)" to\_port="example set"/>

<connect from\_op="AUPRC (6)" from\_port="performance" to\_port="out 1"/>

<portSpacing port="source\_in 1" spacing="0"/>

<portSpacing port="source\_in 2" spacing="0"/>

<portSpacing port="sink\_out 1" spacing="0"/>

<portSpacing port="sink\_out 2" spacing="0"/>

</process>

</operator>

<connect from\_port="model" to\_op="Apply Model (11)" to\_port="model"/>

<connect from\_port="test set" to\_op="Apply Model (11)" to\_port="unlabelled data"/>

<connect from\_op="Apply Model (11)" from\_port="labelled data" to\_op="Subprocess (3)" to\_port="in 1"/>

<connect from\_op="Subprocess (3)" from\_port="out 1" to\_port="averagable 1"/>

<portSpacing port="source\_model" spacing="0"/>

<portSpacing port="source\_test set" spacing="0"/>

<portSpacing port="source\_through 1" spacing="0"/>

<portSpacing port="sink\_averagable 1" spacing="0"/>

<portSpacing port="sink\_averagable 2" spacing="0"/>

</process>

</operator>

<connect from\_port="input 1" to\_op="Validation (4)" to\_port="training"/>

<connect from\_op="Validation (4)" from\_port="averagable 1" to\_port="performance"/>

<portSpacing port="source\_input 1" spacing="0"/>

<portSpacing port="source\_input 2" spacing="0"/>

<portSpacing port="sink\_performance" spacing="0"/>

<portSpacing port="sink\_result 1" spacing="0"/>

</process>

</operator>

<operator activated="true" class="set\_parameters" compatibility="6.5.002" expanded="true" height="76" name="Set Parameters (5)" width="90" x="447" y="255">

<list key="name\_map">

<parameter key="OptimizeK" value="OptimalWeights"/>

</list>

</operator>

<operator activated="true" class="select\_by\_weights" compatibility="6.5.002" expanded="true" height="94" name="OptimalWeights" width="90" x="447" y="30">

<parameter key="weight\_relation" value="top k"/>

<parameter key="k" value="45"/>

</operator>

<operator activated="true" class="multiply" compatibility="6.5.002" expanded="true" height="94" name="Multiply" width="90" x="581" y="165"/>

<operator activated="true" class="select\_subprocess" compatibility="6.5.002" expanded="true" height="94" name="Algorithms (3)" width="90" x="648" y="30">

<parameter key="select\_which" value="%{iteration}"/>

<parameter key="parallelize\_selection\_1" value="true"/>

<parameter key="parallelize\_selection\_2" value="true"/>

<process expanded="true">

<operator activated="true" class="weka:W-DecisionStump" compatibility="5.3.001" expanded="true" height="76" name="W-DecisionStump (3)" width="90" x="45" y="30"/>

<connect from\_port="input 1" to\_op="W-DecisionStump (3)" to\_port="training set"/>

<connect from\_op="W-DecisionStump (3)" from\_port="model" to\_port="output 1"/>

<connect from\_op="W-DecisionStump (3)" from\_port="exampleSet" to\_port="output 2"/>

<portSpacing port="source\_input 1" spacing="0"/>

<portSpacing port="source\_input 2" spacing="0"/>

<portSpacing port="source\_input 3" spacing="0"/>

<portSpacing port="sink\_output 1" spacing="0"/>

<portSpacing port="sink\_output 2" spacing="0"/>

<portSpacing port="sink\_output 3" spacing="0"/>

</process>

<process expanded="true">

<operator activated="true" class="decision\_stump" compatibility="6.5.002" expanded="true" height="76" name="Decision Stump (7)" width="90" x="45" y="30"/>

<connect from\_port="input 1" to\_op="Decision Stump (7)" to\_port="training set"/>

<connect from\_op="Decision Stump (7)" from\_port="model" to\_port="output 1"/>

<connect from\_op="Decision Stump (7)" from\_port="exampleSet" to\_port="output 2"/>

<portSpacing port="source\_input 1" spacing="0"/>

<portSpacing port="source\_input 2" spacing="0"/>

<portSpacing port="source\_input 3" spacing="0"/>

<portSpacing port="sink\_output 1" spacing="0"/>

<portSpacing port="sink\_output 2" spacing="0"/>

<portSpacing port="sink\_output 3" spacing="0"/>

</process>

<process expanded="true">

<operator activated="true" class="weka:W-J48" compatibility="5.3.001" expanded="true" height="76" name="W-J48 (11)" width="90" x="112" y="30"/>

<connect from\_port="input 1" to\_op="W-J48 (11)" to\_port="training set"/>

<connect from\_op="W-J48 (11)" from\_port="model" to\_port="output 1"/>

<connect from\_op="W-J48 (11)" from\_port="exampleSet" to\_port="output 2"/>

<portSpacing port="source\_input 1" spacing="0"/>

<portSpacing port="source\_input 2" spacing="0"/>

<portSpacing port="source\_input 3" spacing="0"/>

<portSpacing port="sink\_output 1" spacing="0"/>

<portSpacing port="sink\_output 2" spacing="0"/>

<portSpacing port="sink\_output 3" spacing="0"/>

</process>

<process expanded="true">

<operator activated="true" class="naive\_bayes" compatibility="6.5.002" expanded="true" height="76" name="Naive Bayes (13)" width="90" x="112" y="30"/>

<connect from\_port="input 1" to\_op="Naive Bayes (13)" to\_port="training set"/>

<connect from\_op="Naive Bayes (13)" from\_port="model" to\_port="output 1"/>

<connect from\_op="Naive Bayes (13)" from\_port="exampleSet" to\_port="output 2"/>

<portSpacing port="source\_input 1" spacing="0"/>

<portSpacing port="source\_input 2" spacing="0"/>

<portSpacing port="source\_input 3" spacing="0"/>

<portSpacing port="sink\_output 1" spacing="0"/>

<portSpacing port="sink\_output 2" spacing="0"/>

<portSpacing port="sink\_output 3" spacing="0"/>

</process>

<process expanded="true">

<operator activated="true" class="weka:W-Logistic" compatibility="5.3.001" expanded="true" height="76" name="W-Logistic (9)" width="90" x="45" y="30"/>

<connect from\_port="input 1" to\_op="W-Logistic (9)" to\_port="training set"/>

<connect from\_op="W-Logistic (9)" from\_port="model" to\_port="output 1"/>

<connect from\_op="W-Logistic (9)" from\_port="exampleSet" to\_port="output 2"/>

<portSpacing port="source\_input 1" spacing="0"/>

<portSpacing port="source\_input 2" spacing="0"/>

<portSpacing port="source\_input 3" spacing="0"/>

<portSpacing port="sink\_output 1" spacing="0"/>

<portSpacing port="sink\_output 2" spacing="0"/>

<portSpacing port="sink\_output 3" spacing="0"/>

</process>

<process expanded="true">

<operator activated="true" class="parallel\_random\_forest" compatibility="6.5.002" expanded="true" height="76" name="RF - Rapid (3)" width="90" x="45" y="30">

<parameter key="number\_of\_trees" value="30"/>

</operator>

<connect from\_port="input 1" to\_op="RF - Rapid (3)" to\_port="training set"/>

<connect from\_op="RF - Rapid (3)" from\_port="model" to\_port="output 1"/>

<connect from\_op="RF - Rapid (3)" from\_port="exampleSet" to\_port="output 2"/>

<portSpacing port="source\_input 1" spacing="0"/>

<portSpacing port="source\_input 2" spacing="0"/>

<portSpacing port="source\_input 3" spacing="0"/>

<portSpacing port="sink\_output 1" spacing="0"/>

<portSpacing port="sink\_output 2" spacing="0"/>

<portSpacing port="sink\_output 3" spacing="0"/>

</process>

<process expanded="true">

<operator activated="true" class="weka:W-RandomForest" compatibility="5.3.001" expanded="true" height="76" name="RF - Weka (3)" width="90" x="45" y="30"/>

<connect from\_port="input 1" to\_op="RF - Weka (3)" to\_port="training set"/>

<connect from\_op="RF - Weka (3)" from\_port="model" to\_port="output 1"/>

<connect from\_op="RF - Weka (3)" from\_port="exampleSet" to\_port="output 2"/>

<portSpacing port="source\_input 1" spacing="0"/>

<portSpacing port="source\_input 2" spacing="0"/>

<portSpacing port="source\_input 3" spacing="0"/>

<portSpacing port="sink\_output 1" spacing="0"/>

<portSpacing port="sink\_output 2" spacing="0"/>

<portSpacing port="sink\_output 3" spacing="0"/>

</process>

<process expanded="true">

<operator activated="true" class="adaboost" compatibility="6.5.002" expanded="true" height="76" name="AdaBoost (6)" width="90" x="45" y="30">

<parameter key="parallelize\_learning\_process" value="true"/>

<process expanded="true">

<operator activated="true" class="decision\_stump" compatibility="6.5.002" expanded="true" height="76" name="Decision Stump (8)" width="90" x="112" y="75"/>

<connect from\_port="training set" to\_op="Decision Stump (8)" to\_port="training set"/>

<connect from\_op="Decision Stump (8)" from\_port="model" to\_port="model"/>

<portSpacing port="source\_training set" spacing="0"/>

<portSpacing port="sink\_model" spacing="0"/>

</process>

</operator>

<connect from\_port="input 1" to\_op="AdaBoost (6)" to\_port="training set"/>

<connect from\_op="AdaBoost (6)" from\_port="model" to\_port="output 1"/>

<connect from\_op="AdaBoost (6)" from\_port="example set" to\_port="output 2"/>

<portSpacing port="source\_input 1" spacing="0"/>

<portSpacing port="source\_input 2" spacing="0"/>

<portSpacing port="source\_input 3" spacing="0"/>

<portSpacing port="sink\_output 1" spacing="0"/>

<portSpacing port="sink\_output 2" spacing="0"/>

<portSpacing port="sink\_output 3" spacing="0"/>

</process>

<process expanded="true">

<operator activated="true" class="adaboost" compatibility="6.5.002" expanded="true" height="76" name="AdaBoost (7)" width="90" x="45" y="30">

<parameter key="parallelize\_learning\_process" value="true"/>

<process expanded="true">

<operator activated="true" class="weka:W-J48" compatibility="5.3.001" expanded="true" height="76" name="W-J48 (12)" width="90" x="380" y="75"/>

<connect from\_port="training set" to\_op="W-J48 (12)" to\_port="training set"/>

<connect from\_op="W-J48 (12)" from\_port="model" to\_port="model"/>

<portSpacing port="source\_training set" spacing="0"/>

<portSpacing port="sink\_model" spacing="0"/>

</process>

</operator>

<connect from\_port="input 1" to\_op="AdaBoost (7)" to\_port="training set"/>

<connect from\_op="AdaBoost (7)" from\_port="model" to\_port="output 1"/>

<connect from\_op="AdaBoost (7)" from\_port="example set" to\_port="output 2"/>

<portSpacing port="source\_input 1" spacing="0"/>

<portSpacing port="source\_input 2" spacing="0"/>

<portSpacing port="source\_input 3" spacing="0"/>

<portSpacing port="sink\_output 1" spacing="0"/>

<portSpacing port="sink\_output 2" spacing="0"/>

<portSpacing port="sink\_output 3" spacing="0"/>

</process>

<process expanded="true">

<operator activated="true" class="adaboost" compatibility="6.5.002" expanded="true" height="76" name="AdaBoost (8)" width="90" x="45" y="30">

<parameter key="parallelize\_learning\_process" value="true"/>

<process expanded="true">

<operator activated="true" class="naive\_bayes" compatibility="6.5.002" expanded="true" height="76" name="Naive Bayes (14)" width="90" x="313" y="75"/>

<connect from\_port="training set" to\_op="Naive Bayes (14)" to\_port="training set"/>

<connect from\_op="Naive Bayes (14)" from\_port="model" to\_port="model"/>

<portSpacing port="source\_training set" spacing="0"/>

<portSpacing port="sink\_model" spacing="0"/>

</process>

</operator>

<connect from\_port="input 1" to\_op="AdaBoost (8)" to\_port="training set"/>

<connect from\_op="AdaBoost (8)" from\_port="model" to\_port="output 1"/>

<connect from\_op="AdaBoost (8)" from\_port="example set" to\_port="output 2"/>

<portSpacing port="source\_input 1" spacing="0"/>

<portSpacing port="source\_input 2" spacing="0"/>

<portSpacing port="source\_input 3" spacing="0"/>

<portSpacing port="sink\_output 1" spacing="0"/>

<portSpacing port="sink\_output 2" spacing="0"/>

<portSpacing port="sink\_output 3" spacing="0"/>

</process>

<process expanded="true">

<operator activated="true" class="adaboost" compatibility="6.5.002" expanded="true" height="76" name="AdaBoost (9)" width="90" x="45" y="30">

<parameter key="parallelize\_learning\_process" value="true"/>

<process expanded="true">

<operator activated="true" class="weka:W-Logistic" compatibility="5.3.001" expanded="true" height="76" name="W-Logistic (10)" width="90" x="313" y="75"/>

<connect from\_port="training set" to\_op="W-Logistic (10)" to\_port="training set"/>

<connect from\_op="W-Logistic (10)" from\_port="model" to\_port="model"/>

<portSpacing port="source\_training set" spacing="0"/>

<portSpacing port="sink\_model" spacing="0"/>

</process>

</operator>

<connect from\_port="input 1" to\_op="AdaBoost (9)" to\_port="training set"/>

<connect from\_op="AdaBoost (9)" from\_port="model" to\_port="output 1"/>

<connect from\_op="AdaBoost (9)" from\_port="example set" to\_port="output 2"/>

<portSpacing port="source\_input 1" spacing="0"/>

<portSpacing port="source\_input 2" spacing="0"/>

<portSpacing port="source\_input 3" spacing="0"/>

<portSpacing port="sink\_output 1" spacing="0"/>

<portSpacing port="sink\_output 2" spacing="0"/>

<portSpacing port="sink\_output 3" spacing="0"/>

</process>

<process expanded="true">

<operator activated="true" class="bagging" compatibility="6.5.002" expanded="true" height="76" name="Bagging (6)" width="90" x="112" y="30">

<parameter key="sample\_ratio" value="0.7"/>

<parameter key="use\_local\_random\_seed" value="true"/>

<parameter key="parallelize\_learning\_process" value="true"/>

<process expanded="true">

<operator activated="true" class="decision\_stump" compatibility="6.5.002" expanded="true" height="76" name="Decision Stump (9)" width="90" x="313" y="75"/>

<connect from\_port="training set" to\_op="Decision Stump (9)" to\_port="training set"/>

<connect from\_op="Decision Stump (9)" from\_port="model" to\_port="model"/>

<portSpacing port="source\_training set" spacing="0"/>

<portSpacing port="sink\_model" spacing="0"/>

</process>

</operator>

<connect from\_port="input 1" to\_op="Bagging (6)" to\_port="training set"/>

<connect from\_op="Bagging (6)" from\_port="model" to\_port="output 1"/>

<connect from\_op="Bagging (6)" from\_port="example set" to\_port="output 2"/>

<portSpacing port="source\_input 1" spacing="0"/>

<portSpacing port="source\_input 2" spacing="0"/>

<portSpacing port="source\_input 3" spacing="0"/>

<portSpacing port="sink\_output 1" spacing="0"/>

<portSpacing port="sink\_output 2" spacing="0"/>

<portSpacing port="sink\_output 3" spacing="0"/>

</process>

<process expanded="true">

<operator activated="true" class="bagging" compatibility="6.5.002" expanded="true" height="76" name="Bagging (7)" width="90" x="45" y="30">

<parameter key="sample\_ratio" value="0.7"/>

<parameter key="use\_local\_random\_seed" value="true"/>

<parameter key="parallelize\_learning\_process" value="true"/>

<process expanded="true">

<operator activated="true" class="weka:W-J48" compatibility="5.3.001" expanded="true" height="76" name="W-J48 (13)" width="90" x="246" y="75"/>

<connect from\_port="training set" to\_op="W-J48 (13)" to\_port="training set"/>

<connect from\_op="W-J48 (13)" from\_port="model" to\_port="model"/>

<portSpacing port="source\_training set" spacing="0"/>

<portSpacing port="sink\_model" spacing="0"/>

</process>

</operator>

<connect from\_port="input 1" to\_op="Bagging (7)" to\_port="training set"/>

<connect from\_op="Bagging (7)" from\_port="model" to\_port="output 1"/>

<connect from\_op="Bagging (7)" from\_port="example set" to\_port="output 2"/>

<portSpacing port="source\_input 1" spacing="0"/>

<portSpacing port="source\_input 2" spacing="0"/>

<portSpacing port="source\_input 3" spacing="0"/>

<portSpacing port="sink\_output 1" spacing="0"/>

<portSpacing port="sink\_output 2" spacing="0"/>

<portSpacing port="sink\_output 3" spacing="0"/>

</process>

<process expanded="true">

<operator activated="true" class="bagging" compatibility="6.5.002" expanded="true" height="76" name="Bagging (8)" width="90" x="85" y="30">

<parameter key="sample\_ratio" value="0.7"/>

<process expanded="true">

<operator activated="true" class="naive\_bayes" compatibility="6.5.002" expanded="true" height="76" name="Naive Bayes (15)" width="90" x="380" y="75"/>

<connect from\_port="training set" to\_op="Naive Bayes (15)" to\_port="training set"/>

<connect from\_op="Naive Bayes (15)" from\_port="model" to\_port="model"/>

<portSpacing port="source\_training set" spacing="0"/>

<portSpacing port="sink\_model" spacing="0"/>

</process>

</operator>

<connect from\_port="input 1" to\_op="Bagging (8)" to\_port="training set"/>

<connect from\_op="Bagging (8)" from\_port="model" to\_port="output 1"/>

<connect from\_op="Bagging (8)" from\_port="example set" to\_port="output 2"/>

<portSpacing port="source\_input 1" spacing="0"/>

<portSpacing port="source\_input 2" spacing="0"/>

<portSpacing port="source\_input 3" spacing="0"/>

<portSpacing port="sink\_output 1" spacing="0"/>

<portSpacing port="sink\_output 2" spacing="0"/>

<portSpacing port="sink\_output 3" spacing="0"/>

</process>

<process expanded="true">

<operator activated="true" class="bagging" compatibility="6.5.002" expanded="true" height="76" name="Bagging (9)" width="90" x="45" y="30">

<parameter key="sample\_ratio" value="0.7"/>

<parameter key="use\_local\_random\_seed" value="true"/>

<parameter key="parallelize\_learning\_process" value="true"/>

<process expanded="true">

<operator activated="true" class="weka:W-Logistic" compatibility="5.3.001" expanded="true" height="76" name="W-Logistic (11)" width="90" x="313" y="75"/>

<connect from\_port="training set" to\_op="W-Logistic (11)" to\_port="training set"/>

<connect from\_op="W-Logistic (11)" from\_port="model" to\_port="model"/>

<portSpacing port="source\_training set" spacing="0"/>

<portSpacing port="sink\_model" spacing="0"/>

</process>

</operator>

<connect from\_port="input 1" to\_op="Bagging (9)" to\_port="training set"/>

<connect from\_op="Bagging (9)" from\_port="model" to\_port="output 1"/>

<connect from\_op="Bagging (9)" from\_port="example set" to\_port="output 2"/>

<portSpacing port="source\_input 1" spacing="0"/>

<portSpacing port="source\_input 2" spacing="0"/>

<portSpacing port="source\_input 3" spacing="0"/>

<portSpacing port="sink\_output 1" spacing="0"/>

<portSpacing port="sink\_output 2" spacing="0"/>

<portSpacing port="sink\_output 3" spacing="0"/>

</process>

<process expanded="true">

<operator activated="true" class="stacking" compatibility="6.5.002" expanded="true" height="60" name="Stacking (3)" width="90" x="45" y="30">

<parameter key="parallelize\_base\_learner" value="true"/>

<parameter key="parallelize\_stacking\_model\_learner" value="true"/>

<process expanded="true">

<operator activated="true" class="naive\_bayes" compatibility="6.5.002" expanded="true" height="76" name="Naive Bayes (16)" width="90" x="112" y="75"/>

<operator activated="true" class="weka:W-Logistic" compatibility="5.3.001" expanded="true" height="76" name="W-Logistic (12)" width="90" x="112" y="210"/>

<operator activated="true" class="weka:W-J48" compatibility="5.3.001" expanded="true" height="76" name="W-J48 (14)" width="90" x="112" y="300"/>

<connect from\_port="training set 1" to\_op="Naive Bayes (16)" to\_port="training set"/>

<connect from\_port="training set 2" to\_op="W-Logistic (12)" to\_port="training set"/>

<connect from\_port="training set 3" to\_op="W-J48 (14)" to\_port="training set"/>

<connect from\_op="Naive Bayes (16)" from\_port="model" to\_port="base model 1"/>

<connect from\_op="W-Logistic (12)" from\_port="model" to\_port="base model 2"/>

<connect from\_op="W-J48 (14)" from\_port="model" to\_port="base model 3"/>

<portSpacing port="source\_training set 1" spacing="0"/>

<portSpacing port="source\_training set 2" spacing="0"/>

<portSpacing port="source\_training set 3" spacing="0"/>

<portSpacing port="source\_training set 4" spacing="0"/>

<portSpacing port="sink\_base model 1" spacing="0"/>

<portSpacing port="sink\_base model 2" spacing="0"/>

<portSpacing port="sink\_base model 3" spacing="0"/>

<portSpacing port="sink\_base model 4" spacing="0"/>

</process>

<process expanded="true">

<operator activated="true" class="weka:W-J48" compatibility="5.3.001" expanded="true" height="76" name="W-J48 (15)" width="90" x="112" y="75"/>

<connect from\_port="stacking examples" to\_op="W-J48 (15)" to\_port="training set"/>

<connect from\_op="W-J48 (15)" from\_port="model" to\_port="stacking model"/>

<portSpacing port="source\_stacking examples" spacing="0"/>

<portSpacing port="sink\_stacking model" spacing="0"/>

</process>

</operator>

<connect from\_port="input 1" to\_op="Stacking (3)" to\_port="training set"/>

<connect from\_port="input 2" to\_port="output 2"/>

<connect from\_op="Stacking (3)" from\_port="model" to\_port="output 1"/>

<portSpacing port="source\_input 1" spacing="0"/>

<portSpacing port="source\_input 2" spacing="0"/>

<portSpacing port="source\_input 3" spacing="0"/>

<portSpacing port="sink\_output 1" spacing="0"/>

<portSpacing port="sink\_output 2" spacing="0"/>

<portSpacing port="sink\_output 3" spacing="0"/>

</process>

<process expanded="true">

<operator activated="true" class="multiply" compatibility="6.5.002" expanded="true" height="94" name="Multiply (9)" width="90" x="45" y="165"/>

<operator activated="true" class="optimize\_parameters\_evolutionary" compatibility="6.5.002" expanded="true" height="112" name="Optimize SVM (3)" width="90" x="112" y="30">

<list key="parameters">

<parameter key="SVM (Linear).C" value="[0.000000001;100000]"/>

</list>

<parameter key="max\_generations" value="10"/>

<parameter key="use\_early\_stopping" value="true"/>

<parameter key="population\_size" value="10"/>

<parameter key="use\_local\_random\_seed" value="true"/>

<parameter key="parallelize\_optimization\_process" value="true"/>

<process expanded="true">

<operator activated="true" class="parallel:x\_validation\_parallel" compatibility="5.3.000" expanded="true" height="112" name="Validation (9)" width="90" x="246" y="120">

<parameter key="number\_of\_validations" value="5"/>

<parameter key="use\_local\_random\_seed" value="true"/>

<parameter key="parallelize\_training" value="true"/>

<parameter key="parallelize\_testing" value="true"/>

<process expanded="true">

<operator activated="true" class="support\_vector\_machine\_linear" compatibility="6.5.002" expanded="true" height="76" name="SVM (5)" width="90" x="179" y="75">

<parameter key="C" value="6120.417050152911"/>

</operator>

<connect from\_port="training" to\_op="SVM (5)" to\_port="training set"/>

<connect from\_op="SVM (5)" from\_port="model" to\_port="model"/>

<portSpacing port="source\_training" spacing="0"/>

<portSpacing port="sink\_model" spacing="0"/>

<portSpacing port="sink\_through 1" spacing="0"/>

</process>

<process expanded="true">

<operator activated="true" class="apply\_model" compatibility="6.5.002" expanded="true" height="76" name="Apply Model (12)" width="90" x="112" y="120">

<list key="application\_parameters"/>

</operator>

<operator activated="true" class="subprocess" compatibility="6.5.002" expanded="true" height="76" name="AUPRC Optim param I (3)" width="90" x="246" y="120">

<process expanded="true">

<operator activated="true" class="rename" compatibility="6.5.002" expanded="true" height="76" name="Rename (7)" width="90" x="45" y="30">

<parameter key="old\_name" value="confidence(N)"/>

<parameter key="new\_name" value="noconf"/>

<list key="rename\_additional\_attributes">

<parameter key="confidence(Y)" value="yesconf"/>

</list>

</operator>

<operator activated="true" class="r\_scripting:execute\_r" compatibility="6.5.000" expanded="true" height="76" name="Execute R (8)" width="90" x="179" y="30">

<parameter key="script" value="# rm\_main is a mandatory function, &#10;# the number of arguments has to be the number of input ports (can be none)&#10;rm\_main = function(data)&#10;{&#10; library(PRROC)&#10; data$class[data$icustay\_expire\_flg== &quot;Y&quot;]&lt;-1 &#10; data$class[data$icustay\_expire\_flg== &quot;N&quot;]&lt;-0&#10; data$class &lt;- as.numeric(data$class)&#10; x=pr.curve(scores.class0 = data$yesconf, weights.class0 = data$class)&#10; #y=roc.curve(scores.class0 = data$yesconf, weights.class0 = data$class)&#10; &#10; #a&lt;-x$auc.integral&#10; data$AUPRC&lt;- x$auc.integral&#10; #data$AUC &lt;- y$auc.integral&#10; metaData$data$AUPRC &lt;&lt;- list(type=&quot;numeric&quot;, role=&quot;performance&quot;)&#10; #metaData$data$AUC &lt;&lt;- list(type=&quot;numeric&quot;, role=&quot;performance&quot;)&#10; return(data)&#10;}&#10;"/>

</operator>

<operator activated="true" class="extract\_performance" compatibility="6.5.002" expanded="true" height="76" name="AUPRC (7)" width="90" x="313" y="30">

<parameter key="performance\_type" value="data\_value"/>

<parameter key="attribute\_name" value="AUPRC"/>

<parameter key="example\_index" value="1"/>

</operator>

<connect from\_port="in 1" to\_op="Rename (7)" to\_port="example set input"/>

<connect from\_op="Rename (7)" from\_port="example set output" to\_op="Execute R (8)" to\_port="input 1"/>

<connect from\_op="Execute R (8)" from\_port="output 1" to\_op="AUPRC (7)" to\_port="example set"/>

<connect from\_op="AUPRC (7)" from\_port="performance" to\_port="out 1"/>

<portSpacing port="source\_in 1" spacing="0"/>

<portSpacing port="source\_in 2" spacing="0"/>

<portSpacing port="sink\_out 1" spacing="0"/>

<portSpacing port="sink\_out 2" spacing="0"/>

</process>

</operator>

<operator activated="false" class="performance\_binominal\_classification" compatibility="6.5.002" expanded="true" height="76" name="Performance (9)" width="90" x="246" y="300">

<parameter key="accuracy" value="false"/>

<parameter key="f\_measure" value="true"/>

</operator>

<connect from\_port="model" to\_op="Apply Model (12)" to\_port="model"/>

<connect from\_port="test set" to\_op="Apply Model (12)" to\_port="unlabelled data"/>

<connect from\_op="Apply Model (12)" from\_port="labelled data" to\_op="AUPRC Optim param I (3)" to\_port="in 1"/>

<connect from\_op="AUPRC Optim param I (3)" from\_port="out 1" to\_port="averagable 1"/>

<portSpacing port="source\_model" spacing="0"/>

<portSpacing port="source\_test set" spacing="0"/>

<portSpacing port="source\_through 1" spacing="0"/>

<portSpacing port="sink\_averagable 1" spacing="0"/>

<portSpacing port="sink\_averagable 2" spacing="0"/>

</process>

</operator>

<connect from\_port="input 1" to\_op="Validation (9)" to\_port="training"/>

<connect from\_op="Validation (9)" from\_port="model" to\_port="result 1"/>

<connect from\_op="Validation (9)" from\_port="averagable 1" to\_port="performance"/>

<portSpacing port="source\_input 1" spacing="0"/>

<portSpacing port="source\_input 2" spacing="0"/>

<portSpacing port="sink\_performance" spacing="0"/>

<portSpacing port="sink\_result 1" spacing="0"/>

<portSpacing port="sink\_result 2" spacing="0"/>

</process>

</operator>

<operator activated="true" class="set\_parameters" compatibility="6.5.002" expanded="true" height="76" name="Set Parameters (6)" width="90" x="246" y="165">

<list key="name\_map">

<parameter key="SVM (Linear)" value=" Optimal SVM Linear"/>

</list>

</operator>

<operator activated="true" class="support\_vector\_machine\_linear" compatibility="6.5.002" expanded="true" height="76" name="Optimal SVM Linear (3)" width="90" x="179" y="300"/>

<connect from\_port="input 1" to\_op="Multiply (9)" to\_port="input"/>

<connect from\_port="input 2" to\_port="output 2"/>

<connect from\_op="Multiply (9)" from\_port="output 1" to\_op="Optimize SVM (3)" to\_port="input 1"/>

<connect from\_op="Multiply (9)" from\_port="output 2" to\_op="Optimal SVM Linear (3)" to\_port="training set"/>

<connect from\_op="Optimize SVM (3)" from\_port="parameter" to\_op="Set Parameters (6)" to\_port="parameter set"/>

<connect from\_op="Optimal SVM Linear (3)" from\_port="model" to\_port="output 1"/>

<portSpacing port="source\_input 1" spacing="0"/>

<portSpacing port="source\_input 2" spacing="0"/>

<portSpacing port="source\_input 3" spacing="0"/>

<portSpacing port="sink\_output 1" spacing="0"/>

<portSpacing port="sink\_output 2" spacing="0"/>

<portSpacing port="sink\_output 3" spacing="0"/>

</process>

<process expanded="true">

<operator activated="true" class="multiply" compatibility="6.5.002" expanded="true" height="94" name="Multiply (10)" width="90" x="45" y="165"/>

<operator activated="true" class="support\_vector\_machine\_libsvm" compatibility="6.5.002" expanded="true" height="76" name="Optimal SVM rbf (3)" width="90" x="246" y="300">

<parameter key="C" value="68146.13250384372"/>

<parameter key="nu" value="0.12334713683253792"/>

<list key="class\_weights"/>

</operator>

<operator activated="true" class="optimize\_parameters\_evolutionary" compatibility="6.5.002" expanded="true" height="112" name="Optimize Parameters (6)" width="90" x="112" y="30">

<list key="parameters">

<parameter key="SVM (rbf).C" value="[0.000000001;100000]"/>

<parameter key="SVM (rbf).nu" value="[0.001;2]"/>

</list>

<parameter key="max\_generations" value="10"/>

<parameter key="use\_early\_stopping" value="true"/>

<parameter key="population\_size" value="10"/>

<parameter key="use\_local\_random\_seed" value="true"/>

<parameter key="parallelize\_optimization\_process" value="true"/>

<process expanded="true">

<operator activated="true" class="parallel:x\_validation\_parallel" compatibility="5.3.000" expanded="true" height="112" name="Validation (10)" width="90" x="380" y="120">

<parameter key="number\_of\_validations" value="5"/>

<parameter key="use\_local\_random\_seed" value="true"/>

<parameter key="parallelize\_training" value="true"/>

<parameter key="parallelize\_testing" value="true"/>

<process expanded="true">

<operator activated="true" class="support\_vector\_machine\_libsvm" compatibility="6.5.002" expanded="true" height="76" name="SVM (6)" width="90" x="179" y="75">

<parameter key="C" value="68146.13250384372"/>

<parameter key="nu" value="0.12334713683253792"/>

<list key="class\_weights"/>

</operator>

<connect from\_port="training" to\_op="SVM (6)" to\_port="training set"/>

<connect from\_op="SVM (6)" from\_port="model" to\_port="model"/>

<portSpacing port="source\_training" spacing="0"/>

<portSpacing port="sink\_model" spacing="0"/>

<portSpacing port="sink\_through 1" spacing="0"/>

</process>

<process expanded="true">

<operator activated="true" class="apply\_model" compatibility="6.5.002" expanded="true" height="76" name="Apply Model (13)" width="90" x="112" y="120">

<list key="application\_parameters"/>

</operator>

<operator activated="true" class="subprocess" compatibility="6.5.002" expanded="true" height="76" name="AUPRC Param Optim II (3)" width="90" x="246" y="120">

<process expanded="true">

<operator activated="true" class="rename" compatibility="6.5.002" expanded="true" height="76" name="Rename (8)" width="90" x="45" y="30">

<parameter key="old\_name" value="confidence(N)"/>

<parameter key="new\_name" value="noconf"/>

<list key="rename\_additional\_attributes">

<parameter key="confidence(Y)" value="yesconf"/>

</list>

</operator>

<operator activated="true" class="r\_scripting:execute\_r" compatibility="6.5.000" expanded="true" height="76" name="Execute R (9)" width="90" x="179" y="30">

<parameter key="script" value="# rm\_main is a mandatory function, &#10;# the number of arguments has to be the number of input ports (can be none)&#10;rm\_main = function(data)&#10;{&#10; library(PRROC)&#10; data$class[data$icustay\_expire\_flg== &quot;Y&quot;]&lt;-1 &#10; data$class[data$icustay\_expire\_flg== &quot;N&quot;]&lt;-0&#10; data$class &lt;- as.numeric(data$class)&#10; x=pr.curve(scores.class0 = data$yesconf, weights.class0 = data$class)&#10; #y=roc.curve(scores.class0 = data$yesconf, weights.class0 = data$class)&#10; &#10; #a&lt;-x$auc.integral&#10; data$AUPRC&lt;- x$auc.integral&#10; #data$AUC &lt;- y$auc.integral&#10; metaData$data$AUPRC &lt;&lt;- list(type=&quot;numeric&quot;, role=&quot;performance&quot;)&#10; #metaData$data$AUC &lt;&lt;- list(type=&quot;numeric&quot;, role=&quot;performance&quot;)&#10; return(data)&#10;}&#10;"/>

</operator>

<operator activated="true" class="extract\_performance" compatibility="6.5.002" expanded="true" height="76" name="AUPRC (8)" width="90" x="313" y="30">

<parameter key="performance\_type" value="data\_value"/>

<parameter key="attribute\_name" value="AUPRC"/>

<parameter key="example\_index" value="1"/>

</operator>

<connect from\_port="in 1" to\_op="Rename (8)" to\_port="example set input"/>

<connect from\_op="Rename (8)" from\_port="example set output" to\_op="Execute R (9)" to\_port="input 1"/>

<connect from\_op="Execute R (9)" from\_port="output 1" to\_op="AUPRC (8)" to\_port="example set"/>

<connect from\_op="AUPRC (8)" from\_port="performance" to\_port="out 1"/>

<portSpacing port="source\_in 1" spacing="0"/>

<portSpacing port="source\_in 2" spacing="0"/>

<portSpacing port="sink\_out 1" spacing="0"/>

<portSpacing port="sink\_out 2" spacing="0"/>

</process>

</operator>

<operator activated="false" class="performance\_binominal\_classification" compatibility="6.5.002" expanded="true" height="76" name="Performance (10)" width="90" x="246" y="345">

<parameter key="accuracy" value="false"/>

<parameter key="f\_measure" value="true"/>

</operator>

<connect from\_port="model" to\_op="Apply Model (13)" to\_port="model"/>

<connect from\_port="test set" to\_op="Apply Model (13)" to\_port="unlabelled data"/>

<connect from\_op="Apply Model (13)" from\_port="labelled data" to\_op="AUPRC Param Optim II (3)" to\_port="in 1"/>

<connect from\_op="AUPRC Param Optim II (3)" from\_port="out 1" to\_port="averagable 1"/>

<portSpacing port="source\_model" spacing="0"/>

<portSpacing port="source\_test set" spacing="0"/>

<portSpacing port="source\_through 1" spacing="0"/>

<portSpacing port="sink\_averagable 1" spacing="0"/>

<portSpacing port="sink\_averagable 2" spacing="0"/>

</process>

</operator>

<connect from\_port="input 1" to\_op="Validation (10)" to\_port="training"/>

<connect from\_op="Validation (10)" from\_port="model" to\_port="result 1"/>

<connect from\_op="Validation (10)" from\_port="averagable 1" to\_port="performance"/>

<portSpacing port="source\_input 1" spacing="0"/>

<portSpacing port="source\_input 2" spacing="0"/>

<portSpacing port="sink\_performance" spacing="0"/>

<portSpacing port="sink\_result 1" spacing="0"/>

<portSpacing port="sink\_result 2" spacing="0"/>

</process>

</operator>

<operator activated="true" class="set\_parameters" compatibility="6.5.002" expanded="true" height="76" name="Set Parameters (7)" width="90" x="246" y="120">

<list key="name\_map">

<parameter key="SVM (rbf)" value="Optimal SVM rbf"/>

</list>

</operator>

<connect from\_port="input 1" to\_op="Multiply (10)" to\_port="input"/>

<connect from\_port="input 2" to\_port="output 2"/>

<connect from\_op="Multiply (10)" from\_port="output 1" to\_op="Optimize Parameters (6)" to\_port="input 1"/>

<connect from\_op="Multiply (10)" from\_port="output 2" to\_op="Optimal SVM rbf (3)" to\_port="training set"/>

<connect from\_op="Optimal SVM rbf (3)" from\_port="model" to\_port="output 1"/>

<connect from\_op="Optimize Parameters (6)" from\_port="parameter" to\_op="Set Parameters (7)" to\_port="parameter set"/>

<portSpacing port="source\_input 1" spacing="0"/>

<portSpacing port="source\_input 2" spacing="0"/>

<portSpacing port="source\_input 3" spacing="0"/>

<portSpacing port="sink\_output 1" spacing="0"/>

<portSpacing port="sink\_output 2" spacing="0"/>

<portSpacing port="sink\_output 3" spacing="0"/>

</process>

<process expanded="true">

<operator activated="true" class="weka:W-SMO" compatibility="5.3.001" expanded="true" height="76" name="W-SMO (3)" width="90" x="45" y="120"/>

<connect from\_port="input 1" to\_op="W-SMO (3)" to\_port="training set"/>

<connect from\_port="input 2" to\_port="output 2"/>

<connect from\_op="W-SMO (3)" from\_port="model" to\_port="output 1"/>

<portSpacing port="source\_input 1" spacing="0"/>

<portSpacing port="source\_input 2" spacing="0"/>

<portSpacing port="source\_input 3" spacing="0"/>

<portSpacing port="sink\_output 1" spacing="0"/>

<portSpacing port="sink\_output 2" spacing="0"/>

<portSpacing port="sink\_output 3" spacing="0"/>

</process>

</operator>

<operator activated="true" class="apply\_model" compatibility="6.5.002" expanded="true" height="76" name="Apply Model (14)" width="90" x="715" y="165">

<list key="application\_parameters"/>

</operator>

<operator activated="true" class="store" compatibility="6.5.002" expanded="true" height="60" name="Store (4)" width="90" x="648" y="300">

<parameter key="repository\_entry" value="FilterResults/Models/model%{iterationWeights}%{iteration}"/>

</operator>

<operator activated="true" class="subprocess" compatibility="6.5.002" expanded="true" height="76" name="Subprocess (4)" width="90" x="782" y="345">

<parameter key="parallelize\_nested\_process" value="true"/>

<process expanded="true">

<operator activated="true" class="rename" compatibility="6.5.002" expanded="true" height="76" name="Rename (9)" width="90" x="45" y="30">

<parameter key="old\_name" value="confidence(N)"/>

<parameter key="new\_name" value="noconf"/>

<list key="rename\_additional\_attributes">

<parameter key="confidence(Y)" value="yesconf"/>

</list>

</operator>

<operator activated="true" class="r\_scripting:execute\_r" compatibility="6.5.000" expanded="true" height="76" name="Execute R (10)" width="90" x="179" y="30">

<parameter key="script" value="# rm\_main is a mandatory function, &#10;# the number of arguments has to be the number of input ports (can be none)&#10;rm\_main = function(data)&#10;{&#10; library(PRROC)&#10; data$class[data$icustay\_expire\_flg== &quot;Y&quot;]&lt;-1 &#10; data$class[data$icustay\_expire\_flg== &quot;N&quot;]&lt;-0&#10; data$class &lt;- as.numeric(data$class)&#10; x=pr.curve(scores.class0 = data$yesconf, weights.class0 = data$class)&#10; #y=roc.curve(scores.class0 = data$yesconf, weights.class0 = data$class)&#10; &#10; #a&lt;-x$auc.integral&#10; data$AUPRC&lt;- x$auc.integral&#10; #data$AUC &lt;- y$auc.integral&#10; metaData$data$AUPRC &lt;&lt;- list(type=&quot;numeric&quot;, role=&quot;performance&quot;)&#10; #metaData$data$AUC &lt;&lt;- list(type=&quot;numeric&quot;, role=&quot;performance&quot;)&#10; return(data)&#10;}&#10;"/>

</operator>

<operator activated="true" class="extract\_performance" compatibility="6.5.002" expanded="true" height="76" name="AUPRC (9)" width="90" x="334" y="30">

<parameter key="performance\_type" value="data\_value"/>

<parameter key="attribute\_name" value="AUPRC"/>

<parameter key="example\_index" value="1"/>

</operator>

<operator activated="true" class="log" compatibility="6.5.002" expanded="true" height="76" name="Log (3)" width="90" x="514" y="30">

<parameter key="filename" value="C:\Users\Milan\Papers\PLOS I\FilterResults\LogFilterWeights.log"/>

<list key="log">

<parameter key="AUPRC" value="operator.AUPRC (9).value.performance"/>

<parameter key="FeatureSelection" value="operator.Loop (2).value.iteration"/>

<parameter key="Algorithm" value="operator.Loop.value.iteration"/>

<parameter key="k" value="operator.OptimalWeights.parameter.k"/>

</list>

<parameter key="persistent" value="true"/>

</operator>

<connect from\_port="in 1" to\_op="Rename (9)" to\_port="example set input"/>

<connect from\_op="Rename (9)" from\_port="example set output" to\_op="Execute R (10)" to\_port="input 1"/>

<connect from\_op="Execute R (10)" from\_port="output 1" to\_op="AUPRC (9)" to\_port="example set"/>

<connect from\_op="AUPRC (9)" from\_port="performance" to\_op="Log (3)" to\_port="through 1"/>

<connect from\_op="Log (3)" from\_port="through 1" to\_port="out 1"/>

<portSpacing port="source\_in 1" spacing="0"/>

<portSpacing port="source\_in 2" spacing="0"/>

<portSpacing port="sink\_out 1" spacing="0"/>

<portSpacing port="sink\_out 2" spacing="0"/>

</process>

</operator>

<connect from\_port="input 1" to\_op="Select Subprocess (2)" to\_port="input 1"/>

<connect from\_port="input 2" to\_op="OptimalWeights" to\_port="example set input"/>

<connect from\_op="Select Subprocess (2)" from\_port="output 1" to\_op="Optimize Parameters (3)" to\_port="input 1"/>

<connect from\_op="Select Subprocess (2)" from\_port="output 2" to\_op="Store (3)" to\_port="input"/>

<connect from\_op="Store (3)" from\_port="through" to\_op="OptimalWeights" to\_port="weights"/>

<connect from\_op="Optimize Parameters (3)" from\_port="parameter" to\_op="Set Parameters (5)" to\_port="parameter set"/>

<connect from\_op="OptimalWeights" from\_port="example set output" to\_op="Multiply" to\_port="input"/>

<connect from\_op="Multiply" from\_port="output 1" to\_op="Algorithms (3)" to\_port="input 1"/>

<connect from\_op="Multiply" from\_port="output 2" to\_op="Apply Model (14)" to\_port="unlabelled data"/>

<connect from\_op="Algorithms (3)" from\_port="output 1" to\_op="Apply Model (14)" to\_port="model"/>

<connect from\_op="Apply Model (14)" from\_port="labelled data" to\_op="Subprocess (4)" to\_port="in 1"/>

<connect from\_op="Apply Model (14)" from\_port="model" to\_op="Store (4)" to\_port="input"/>

<connect from\_op="Subprocess (4)" from\_port="out 1" to\_port="output 1"/>

<portSpacing port="source\_input 1" spacing="0"/>

<portSpacing port="source\_input 2" spacing="0"/>

<portSpacing port="source\_input 3" spacing="0"/>

<portSpacing port="sink\_output 1" spacing="0"/>

<portSpacing port="sink\_output 2" spacing="0"/>

</process>

</operator>

<connect from\_port="input 1" to\_op="Loop" to\_port="input 1"/>

<connect from\_port="input 2" to\_op="Loop" to\_port="input 2"/>

<connect from\_op="Loop" from\_port="output 1" to\_port="output 1"/>

<portSpacing port="source\_input 1" spacing="0"/>

<portSpacing port="source\_input 2" spacing="0"/>

<portSpacing port="source\_input 3" spacing="0"/>

<portSpacing port="sink\_output 1" spacing="0"/>

<portSpacing port="sink\_output 2" spacing="0"/>

</process>

</operator>

<connect from\_op="Read ICUdetail" from\_port="output" to\_op="Data preparation" to\_port="in 1"/>

<connect from\_op="Platelet count" from\_port="output" to\_op="Data preparation" to\_port="in 3"/>

<connect from\_op="Comorbidity CSV " from\_port="output" to\_op="Data preparation" to\_port="in 2"/>

<connect from\_op="Data preparation" from\_port="out 1" to\_op="Loop (2)" to\_port="input 1"/>

<connect from\_op="Data preparation" from\_port="out 2" to\_op="Loop (2)" to\_port="input 2"/>

<connect from\_op="Loop (2)" from\_port="output 1" to\_port="result 1"/>

<portSpacing port="source\_input 1" spacing="0"/>

<portSpacing port="sink\_result 1" spacing="0"/>

<portSpacing port="sink\_result 2" spacing="0"/>

</process>

</operator>

</process>