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The JAS (Java Agent-based Simulation) library

The most unpleasant limit of agent-based modelling is the requirement of a good skill in computer programming, particularly because it is used by social scientists.

Every attempt to create a visual development tool for ABM has shown only one certainty: if you want to realise a valid model, you have to type code. In fact, the agent based models are algorithm-intensive applications.

Starting from this assumption we tried to create a brand new ABM toolkit, with the aim to hide technicalities to the modeller as much as possible and to create simple and easy-to-use interfaces for the most common tools needed by an ABM simulator.

JAS (<http://jaslibrary.sourceforge.net>) is a java open source project, hosted by the SourceForge directory. It is based on a general-purpose discrete-event simulation engine and borrows many features from other open source libraries. The statistical package and the random number generators are based on the well-known COLT library from CERN; the plotting package is widely founded on the PtPlot tool from Berkley University, the network interface makes use of the SVG and the XML-RPC java implementations by the Apache Software Foundation.

The philosophy in JAS development was to use reliable and powerful open source packages, reducing and homogenizing their complex interfaces in a coherent environment. It has been written in pure Java code and its architecture is largely based on the Swarm paradigm, such that javaSwarm applications can be easily ported to the JAS platform.

Among JAS' features stand out a package for network simulation design (Sim2Web), Gigi Ferraris' implementation of Genetic Algorithms and Classifier Systems, a forthcoming Neural Networks library, a full support to the XML format.