





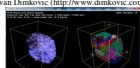







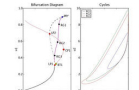

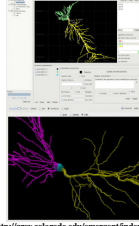
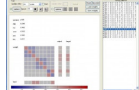

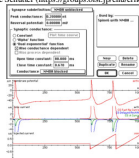

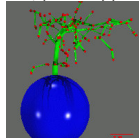
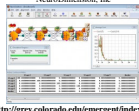

## Comparison of Neural Network Simulators

From emergent

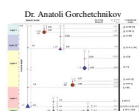
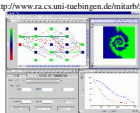
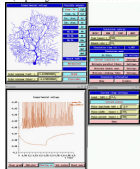



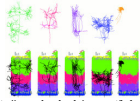
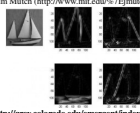
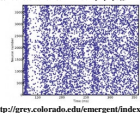

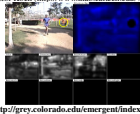
Welcome to our comparison of neural network simulators. We welcome your contributions in the form of adding new simulators (see the link to the right) and editing simulators in order to keep their information up to date and accurate (see the 'edit this simulator' link below each simulator). Send feedback to [brian.mingus@colorado.edu](mailto:brian.mingus@colorado.edu).

Add a new simulator  
(<http://grey.colorado.edu/emergent/index.php/Form:AddSimulator>)

Simulator	Publications	Release history	License	Platforms	Community	Language	Focus	Coding Style	Virtual environment	Backpropagation	Self Organizing	Constraint Satisfaction	Supported Neurons	Parallel Computing	PyNN ( <a href="http://www.neuralensemble.org/AracPyNN">http://www.neuralensemble.org/AracPyNN</a> )
<b>emergent Neural Network Simulation System</b> ( <a href="http://grey.colorado.edu/emergent/index.php/Main_Page">http://grey.colorado.edu/emergent/index.php/Main_Page</a> ) 6.3.2  Dr. Randy O'Reilly ( <a href="http://psych.colorado.edu/~7loreilly/">http://psych.colorado.edu/~7loreilly/</a> )   <a href="#">edit this simulator (http://grey.colorado.edu/emergent/index.php/Special:FormEdit/AddSimulator/emergent_Neural_Network_Simulation_System)</a>	AisaMingusO'Reilly07 ( <a href="http://grey.colorado.edu/mediawiki/sites/emergent/images/ishh/AisaMingusO'Reilly07.pdf">http://grey.colorado.edu/mediawiki/sites/emergent/images/ishh/AisaMingusO'Reilly07.pdf</a> )	1993-2013	GNU GPL	Windows OS X Linux Unix	Mailing List ( <a href="http://grey.colorado.edu/cgi-bin/mailman/listinfo/emergent-users">http://grey.colorado.edu/cgi-bin/mailman/listinfo/emergent-users</a> )	C++	Networks	Visual Scripts C++	Rigid body physics 3D graphics 3D model file import Full robotics support	Cross-entropy Feedforward (SNN) <b>Recurrent Asynchronous Real-time continuous</b>	Competitive Learning (hard/soft) Hebbian (soft/hard/SHKohonen)	Boltzmann Binary/continuous Hopfield Interactive Activation and Competition GRAIN	Point Biological	MPI GPU	No
<b>XXNC</b> ( <a href="http://www.h3c-jussieu.fr/xxnc/">http://www.h3c-jussieu.fr/xxnc/</a> ) 9.11  Dr. Jean-François VIBERT ( <a href="http://www.h3c-jussieu.fr/vibert/">http://www.h3c-jussieu.fr/vibert/</a> )   <a href="#">edit this simulator (http://grey.colorado.edu/emergent/index.php/Special:FormEdit/AddSimulator/XXNC)</a>	VibertArmy92 ( <a href="http://grey.colorado.edu/emergent/index.php/VibertArmy92">http://grey.colorado.edu/emergent/index.php/VibertArmy92</a> ) VibertEA97 ( <a href="http://grey.colosnada.edu/emergent/index.php/VibertEA97">http://grey.colosnada.edu/emergent/index.php/VibertEA97</a> ) VibertEA01 ( <a href="http://grey.colorado.edu/emergent/index.php/VibertEA01">http://grey.colorado.edu/emergent/index.php/VibertEA01</a> )	1998-2011	GNU GPL	Windows OS X Linux Unix		C++	Neurons Networks	Visual			Hebbian		Point Biological		No
<b>Wolfram Mathematica Neural Networks</b> ( <a href="http://www.wolfram.com/products/applications/neuralnetworks/">http://www.wolfram.com/products/applications/neuralnetworks/</a> ) 1.1.1  Wolfram Research Inc.   <a href="#">edit this simulator (http://grey.colorado.edu/emergent/index.php/Special:FormEdit/AddSimulator/Wolfram_Mathematica_Neural_Networks)</a>	Unknown	2002-2005	©, Proprietary	Windows OS X Linux Unix		Mathematica	Networks	Scripts		Feedforward Radial Basis Dynamic (Recurrent)		Hopfield			No
<b>Torch5</b> ( <a href="http://torch5.sourceforge.net/">http://torch5.sourceforge.net/</a> ) 0.80  Roman Collobert ( <a href="http://roman.collobert.com/">http://roman.collobert.com/</a> ) Sanyu Bengio ( <a href="http://bengio.usherbrooke.ca/sanyu/">http://bengio.usherbrooke.ca/sanyu/</a> ) Leon Bottou ( <a href="http://leon.bottou.org/">http://leon.bottou.org/</a> )   <a href="#">edit this simulator (http://grey.colorado.edu/emergent/index.php/Special:FormEdit/AddSimulator/Torch5)</a>	CollobertBengioMaréchal02 ( <a href="http://pubs.lip6.fr/~collobert/2002/tor02-46.pdf">http://pubs.lip6.fr/~collobert/2002/tor02-46.pdf</a> )	2002-2008	GNU GPL	Windows OS X Linux Unix		C		Lua scripts							No
<b>Topographica Neural Map Simulator</b> ( <a href="http://topographica.org/">http://topographica.org/</a> ) 0.9.5  Dr. James A. Bednar ( <a href="http://homopages.inf.ed.ac.uk/jbednar/">http://homopages.inf.ed.ac.uk/jbednar/</a> )   <a href="#">edit this simulator (http://grey.colorado.edu/emergent/index.php/Special:FormEdit/AddSimulator/Topographica_Neural_Map_Simulator)</a>	BednarEA04 ( <a href="http://grey.colorado.edu/emergent/index.php/BednarEA04">http://grey.colorado.edu/emergent/index.php/BednarEA04</a> ) BednarEA09 ( <a href="http://dx.doi.org/10.3389/neuro.11.008.2009">http://dx.doi.org/10.3389/neuro.11.008.2009</a> )	1998-2012	BSD	Linux Mac OS X Windows any platform with Python	Mailing List ( <a href="http://topographica.org/Forums">http://topographica.org/Forums</a> )	Python C++	Networks	Python scripts Visual C++	Blender Interface		Hebbian (soft/hard /covariance /CPCA) SOM LISSOM GCAL BCM	Point Biological	Distributed MPI	No	
<b>Theano</b> ( <a href="http://deeplearning.net/software/theano/">http://deeplearning.net/software/theano/</a> ) 0.6  Author Unknown <a href="#">edit this simulator (http://grey.colorado.edu/emergent/index.php/Special:FormEdit/AddSimulator/Theano)</a>	Unknown	2007-2013			[1] ( <a href="http://groups.google.com/group/theano-users">http://groups.google.com/group/theano-users</a> )	C Python	Networks	Script					GPU		No
<b>Stuttgart Neural Network Simulator</b> ( <a href="http://www.ra.cs.uni-tuebingen.de/NNNS/">http://www.ra.cs.uni-tuebingen.de/NNNS/</a> ) 4.3  Dr. Andreas Zell ( <a href="http://www.ra.cs.uni-tuebingen.de/mi/ar/zell/welcome_e.html">http://www.ra.cs.uni-tuebingen.de/mi/ar/zell/welcome_e.html</a> )   <a href="#">edit this simulator (http://grey.colorado.edu/emergent/index.php/Special:FormEdit/AddSimulator/Stuttgart_Neural_Network_Simulator)</a>	ZellEA91 ( <a href="http://grey.colorado.edu/emergent/index.php/ZellEA91">http://grey.colorado.edu/emergent/index.php/ZellEA91</a> ) Petrov99 ( <a href="http://grey.colosnada.edu/emergent/index.php/Petrov99">http://grey.colosnada.edu/emergent/index.php/Petrov99</a> )	1991-2008	Other FOSS	Windows Others from source	Mailing List ( <a href="http://www.ra.cs.uni-tuebingen.de/NNNS/about_ml.html">http://www.ra.cs.uni-tuebingen.de/NNNS/about_ml.html</a> )	C++	Networks	Visual		Quickprop RPROP Backpercolation Counterpropagation	Hebbian Kohonen Delta	Point			No
<b>SpikeNET</b> ( <a href="http://scn.acsd.edu/%7Earno/spikenet/">http://scn.acsd.edu/%7Earno/spikenet/</a> ) 1.02  Arnau Delorme ( <a href="http://www.cnl.salk.edu/%7E/Arnau/">http://www.cnl.salk.edu/%7E/Arnau/</a> ) Simon Thorpe <a href="#">edit this simulator (http://grey.colorado.edu/emergent/index.php/Special:FormEdit/AddSimulator/SpikeNET)</a>	Unknown	1999-2004	GNU GPL			C++	Networks	Configuration Files					Biological		No
<b>SpikFun</b> ( <a href="http://www.dinkovic.com/node/1">http://www.dinkovic.com/node/1</a> ) 0.63  Ivan Dinkovic ( <a href="http://www.dinkovic.com/">http://www.dinkovic.com/</a> )   <a href="#">edit this simulator (http://grey.colorado.edu/emergent/index.php/Special:FormEdit/AddSimulator/SpikFun)</a>	Unknown	2011-2012	Other	Windows		C/C++	Networks	Configuration files					3d		No
<b>Simbrain</b> ( <a href="http://www.simbrain.net/">http://www.simbrain.net/</a> ) 3.0 Beta 1  Jeff Yoshimi   <a href="#">edit this simulator (http://grey.colorado.edu/emergent/index.php/Special:FormEdit/AddSimulator/Simbrain)</a>	Yoshimi08 ( <a href="http://www.brains-minds-media.org/archive/1411">http://www.brains-minds-media.org/archive/1411</a> )	2002-2012	GNU GPL	Java	Forum ( <a href="http://simbrain.963258.s4.nabble.com/">http://simbrain.963258.s4.nabble.com/</a> )	Java	Networks	Visual Scripts	Simple 2D world		Hebbian SOM Short Term Plasticity	Hopfield IAC	Point Biological		No
<b>Siemens ECANSE</b> ( <a href="http://www.siemens.at/ecanse/">http://www.siemens.at/ecanse/</a> ) 2.02    <a href="#">edit this simulator (http://grey.colorado.edu/emergent/index.php/Special:FormEdit/AddSimulator/Siemens_ECANSE)</a>	Unknown	2009-2009	©, Proprietary	Windows		Visual C++		Visual Scripts			Self-organising maps				No
<b>Sharky Neural Network</b> ( <a href="http://www.sharktime.com/~us_SharkyNeuralNetwork.html">http://www.sharktime.com/~us_SharkyNeuralNetwork.html</a> ) 0.9  SharkTime Software ( <a href="http://www.sharktime.com/">http://www.sharktime.com/</a> ) No Images Provided   <a href="#">edit this simulator (http://grey.colorado.edu/emergent/index.php/Special:FormEdit/AddSimulator/Sharky_Neural_Network)</a>	Unknown	2009-2009	©, Proprietary	Win. 2000/XP /Vista/7/8			Networks		Yes	No	No	Point			No
<b>SNNAP (Simulator for Neural Networks and Action Potentials)</b> ( <a href="http://snnapath.tmc.edu/">http://snnapath.tmc.edu/</a> ) 8.1  Dr. John Byrne ( <a href="http://bba.uth.tmc.edu/resources/faculty/members/byrne.htm">http://bba.uth.tmc.edu/resources/faculty/members/byrne.htm</a> ) Dr. Douglas Baxter ( <a href="http://bba.uth.tmc.edu/resources/faculty/members/baxter.htm">http://bba.uth.tmc.edu/resources/faculty/members/baxter.htm</a> )   <a href="#">edit this simulator (http://grey.colorado.edu/emergent/index.php/Special:FormEdit/AddSimulator/SNNAP)</a>	Unknown	2001-2007	©, Proprietary	Java	Forum ( <a href="http://snnap.proboards40.com/">http://snnap.proboards40.com/</a> )	Java	Neurons Networks				Hebbian	Point Biological			No

<p><b>PyNeurGen</b> (<a href="http://pyneurgen.sourceforge.net/">http://pyneurgen.sourceforge.net/</a>) 3.0</p> <p>Don Smiley (<a href="http://www.grammatical-evolution.org/">http://www.grammatical-evolution.org/</a>)</p>  <p><a href="#">edit this simulator</a> (<a href="http://grey.colorado.edu/emergent/index.php/Special:FormEdit/AddSimulator/PyNeurGen">http://grey.colorado.edu/emergent/index.php/Special:FormEdit/AddSimulator/PyNeurGen</a>)</p>	Unknown	-2012					Python	Networks	Script		Yes			Point	No	
<p><b>PyDSTool</b> (<a href="http://www.ai.gsu.edu/%7Erclewley/PyDSTool/FrontPage.html">http://www.ai.gsu.edu/%7Erclewley/PyDSTool/FrontPage.html</a>) 0.88</p> <p>Dr. Robert Clewley (<a href="http://www2.gsu.edu/%7Emaithc/">http://www2.gsu.edu/%7Emaithc/</a>)</p>  <p><a href="#">edit this simulator</a> (<a href="http://grey.colorado.edu/emergent/index.php/Special:FormEdit/AddSimulator/PyDSTool">http://grey.colorado.edu/emergent/index.php/Special:FormEdit/AddSimulator/PyDSTool</a>)</p>	Unknown	2004-2009	BSD	Python	Wiki ( <a href="http://www.cam.cornell.edu/%7Erclewley/cgi-bin/moin.cgi/FrontPage">http://www.cam.cornell.edu/%7Erclewley/cgi-bin/moin.cgi/FrontPage</a> )		Python	Neurons	Python Scripts					Point	No	
<p><b>Peltarion Synapse</b> (<a href="http://www.peltarion.com/products/products.html">http://www.peltarion.com/products/products.html</a>) 1.6.0</p> <p>Peltarion</p>  <p><a href="#">edit this simulator</a> (<a href="http://grey.colorado.edu/emergent/index.php/Special:FormEdit/AddSimulator/Peltarion_Synapse">http://grey.colorado.edu/emergent/index.php/Special:FormEdit/AddSimulator/Peltarion_Synapse</a>)</p>	Unknown	2006-2012	©, Proprietary	Windows	Forum ( <a href="http://www.peltarion.com/forums/">http://www.peltarion.com/forums/</a> )			NET	Visual Scripts NET components		Quickprop Levenberg-Marquardt Recurrent	Self-organising maps Hebbian Kohonen Competitive Learning		Hopfield	Point	No
<p><b>PSICS (Parallel Stochastic Ion Channel Simulator)</b> (<a href="http://www.psics.org/">http://www.psics.org/</a>) 1.0.9</p> <p>Dr. Matthew Nolan (<a href="http://www.cnr.ed.ac.uk/links/MNolan.htm">http://www.cnr.ed.ac.uk/links/MNolan.htm</a>)</p>  <p><a href="#">edit this simulator</a> (<a href="http://grey.colorado.edu/emergent/index.php/Special:FormEdit/AddSimulator/PSICS_%28Parallel_Stochastic_Ion_Channel_Simulator%29">http://grey.colorado.edu/emergent/index.php/Special:FormEdit/AddSimulator/PSICS_%28Parallel_Stochastic_Ion_Channel_Simulator%29</a>)</p>	Unknown	2008-2010	GNU GPL	Java			Java Fortran		Visual					Point 3d Biological	No	
<p><b>PDPTool</b> (<a href="http://www.stanford.edu/group/pdp/ab/resources.html">http://www.stanford.edu/group/pdp/ab/resources.html</a>) 2.02</p> <p>Jay McClelland (<a href="http://psych.stanford.edu/%7Ejlm/">http://psych.stanford.edu/%7Ejlm/</a>)</p>  <p><a href="#">edit this simulator</a> (<a href="http://grey.colorado.edu/emergent/index.php/Special:FormEdit/AddSimulator/PDPTool">http://grey.colorado.edu/emergent/index.php/Special:FormEdit/AddSimulator/PDPTool</a>)</p>	Unknown	1986-2009	GNU GPL	Windows OS X				MATLAB	Networks	Visual MATLAB		Backpropagation Recurrent	Competitive Learning	Point	No	
<p><b>PCSIM</b> (<a href="http://www.lsm.tugraz.at/pcsim/">http://www.lsm.tugraz.at/pcsim/</a>) 0.5.4</p> <p>Dr. Thomas Natschlager (<a href="http://www.schulz.at/RenderHTML.aspx?page=117&amp;lang=1&amp;subpage=3&amp;detail=284">http://www.schulz.at/RenderHTML.aspx?page=117&amp;lang=1&amp;subpage=3&amp;detail=284</a>)</p> <p>Dr. Pecevski Dejan</p> <p><a href="#">edit this simulator</a> (<a href="http://grey.colorado.edu/emergent/index.php/Special:FormEdit/AddSimulator/PCSIM">http://grey.colorado.edu/emergent/index.php/Special:FormEdit/AddSimulator/PCSIM</a>)</p>	BretteA107 ( <a href="http://grey.colorado.edu/emergent/index.php/BretteA107">http://grey.colorado.edu/emergent/index.php/BretteA107</a> )	2008-2009	GNU GPL	OS X Linux Unix	Mailing List ( <a href="http://sourceforge.net/mailarchive/forum.php?forum_name=pcsim-users">http://sourceforge.net/mailarchive/forum.php?forum_name=pcsim-users</a> )		C++ Python	Neurons	Scripts Java		possible	STPD	possible	Point Biological	MPI	No
<p><b>OpenNN</b> (<a href="http://www.intellics.com/opennn/">http://www.intellics.com/opennn/</a>) 1.0</p> <p>Intellics (<a href="http://www.intellics.com/">http://www.intellics.com/</a>)</p> <p>Roberto Lopez</p>  <p><a href="#">edit this simulator</a> (<a href="http://grey.colorado.edu/emergent/index.php/Special:FormEdit/AddSimulator/OpenNN">http://grey.colorado.edu/emergent/index.php/Special:FormEdit/AddSimulator/OpenNN</a>)</p>	Documentation ( <a href="http://www.intellics.com/opennn/documentation">http://www.intellics.com/opennn/documentation</a> )	2003-2014	GNU LGPL	Multiplatform			C++	Networks	C++ main function		Yes	No	Yes		No	
<p><b>Nodus</b> (<a href="http://www.inb.ua.ac.be/software/nodus/modus_info.shtml">http://www.inb.ua.ac.be/software/nodus/modus_info.shtml</a>) 3.2</p> <p>Dr. Erik De Schutter (<a href="http://groups.cist.jpl.nasa.gov/~erik.de-schutter/">http://groups.cist.jpl.nasa.gov/~erik.de-schutter/</a>)</p>  <p><a href="#">edit this simulator</a> (<a href="http://grey.colorado.edu/emergent/index.php/Special:FormEdit/AddSimulator/Nodus">http://grey.colorado.edu/emergent/index.php/Special:FormEdit/AddSimulator/Nodus</a>)</p>	DeSchutter93 ( <a href="http://grey.colorado.edu/emergent/index.php/DeSchutter93">http://grey.colorado.edu/emergent/index.php/DeSchutter93</a> )	1983-1999	©, Proprietary				Fortran	Neurons Networks						Biological	No	
<p><b>Neuroph</b> (<a href="http://neuroph.sourceforge.net/">http://neuroph.sourceforge.net/</a>) 2.8</p> <p>Zoran Sevarac Ivan Goloskokovic Jon Tait</p>  <p><a href="#">edit this simulator</a> (<a href="http://grey.colorado.edu/emergent/index.php/Special:FormEdit/AddSimulator/Neuroph">http://grey.colorado.edu/emergent/index.php/Special:FormEdit/AddSimulator/Neuroph</a>)</p>	Unknown	2008-2013	Other FOSS	Java	Forum ( <a href="http://sourceforge.net/projects/neuroph/forums">http://sourceforge.net/projects/neuroph/forums</a> )		Java	Networks	Java		Multi Layer Perceptron with Backpropagation	Kohonen Hebbian Competitive		Hopfield	Point	No
<p><b>NeuronC</b> (<a href="http://retina.anatomy.upenn.edu/%7Erob/neuronc.html">http://retina.anatomy.upenn.edu/%7Erob/neuronc.html</a>) 6.44</p> <p>Dr. Robert Smith (<a href="http://retina.anatomy.upenn.edu/%7Erob/">http://retina.anatomy.upenn.edu/%7Erob/</a>)</p>  <p><a href="#">edit this simulator</a> (<a href="http://grey.colorado.edu/emergent/index.php/Special:FormEdit/AddSimulator/NeuronC">http://grey.colorado.edu/emergent/index.php/Special:FormEdit/AddSimulator/NeuronC</a>)</p>	Smith92 ( <a href="http://grey.colorado.edu/emergent/index.php/Smith92">http://grey.colorado.edu/emergent/index.php/Smith92</a> )	1986-2008	GNU GPL	OS X Linux Unix	None		C C++	Neurons Networks	Visual Scripts (interpreted) Scripts (compiled to DLL)	No	possible	possible	possible	Biological	MPI	
<p><b>NeuroSolutions</b> (<a href="http://www.neurosolutions.com/products/ns/">http://www.neurosolutions.com/products/ns/</a>) 6.02</p> <p>NeuroDimension, Inc.</p>  <p><a href="#">edit this simulator</a> (<a href="http://grey.colorado.edu/emergent/index.php/Special:FormEdit/AddSimulator/NeuroSolutions">http://grey.colorado.edu/emergent/index.php/Special:FormEdit/AddSimulator/NeuroSolutions</a>)</p>	Unknown	1995-2010	©, Proprietary	Windows Linux (w/o GUI) Unix (w/o GUI)			Visual C++	Networks	Visual C (compiled to DLL) MATLAB		Generalized Feedforward Levenberg-Marquardt	Competitive Learning Hebbian		Hopfield	GPU	No
<p><b>NeuroJet</b> (<a href="http://www.neurojet.com/">http://www.neurojet.com/</a>) 3.0</p> <p>William Levy Ben Hocking Aprotim Sanyal</p> 	Unknown	1990-2008	Other FOSS	Window OS X Linux	Wiki ( <a href="http://www.neurojet.com/wiki/1/">http://www.neurojet.com/wiki/1/</a> )		C C++	Neurons	MATLAB Domain-Specific Language		Excitatory Synaptic Modification	possible	possible	Biological	MPI	No

[illegible]

<div>Dr. Anatoli Gorbatchikov</div> <div></div> <div>edit this simulator (<a href="http://grey.colorado.edu/emergent/index.php/Special:FormEdit/AddSimulator/KlaNeSS_%28KDE_Integrated_NeuroSimulation_Software%29">http://grey.colorado.edu/emergent/index.php/Special:FormEdit/AddSimulator/KlaNeSS_%28KDE_Integrated_NeuroSimulation_Software%29</a>)</div>	<div>GrodbergEIA05 (<a href="http://sympphony.bu.edu/Docs/KlaNeSS/JCCNS_05.pdf">http://sympphony.bu.edu/Docs/KlaNeSS/JCCNS_05.pdf</a>)</div>																	
<div>JavaNNS (<a href="http://www.ra.cs.uni-tuebingen.de/software/JavaNNS/welcome_e.html">http://www.ra.cs.uni-tuebingen.de/software/JavaNNS/welcome_e.html</a>) 1.1</div> <div>Dr. Andreas Zell (<a href="http://www.ra.cs.uni-tuebingen.de/mi/azh/zell/welcome_e.html">http://www.ra.cs.uni-tuebingen.de/mi/azh/zell/welcome_e.html</a>)</div> <div></div> <div>edit this simulator (<a href="http://grey.colorado.edu/emergent/index.php/Special:FormEdit/AddSimulator/JavaNNS">http://grey.colorado.edu/emergent/index.php/Special:FormEdit/AddSimulator/JavaNNS</a>)</div>	<div>Unknown</div>	<div>2002-2007</div>	<div>©, Proprietary</div>	<div>Java</div>		<div>Java</div>	<div>Networks</div>	<div>Visual</div>		<div>Quickprop RPROP Backpropagation Counterpropagation</div>	<div>Hopfield Kohonen Delta</div>		<div>Point</div>		<div>No</div>			
<div>HHsim (<a href="http://www.cs.cmu.edu/%7Edst/HHsim/">http://www.cs.cmu.edu/%7Edst/HHsim/</a>) 3.2</div> <div>Dr. David S. Touretzky (<a href="http://www.cs.cmu.edu/%7Edst/">http://www.cs.cmu.edu/%7Edst/</a>) Mark V. Albert Mahiyar Bonakdarpour No Images Provided</div> <div>edit this simulator (<a href="http://grey.colorado.edu/emergent/index.php/Special:FormEdit/AddSimulator/HHsim">http://grey.colorado.edu/emergent/index.php/Special:FormEdit/AddSimulator/HHsim</a>)</div>	<div>Unknown</div>	<div>2003-2012</div>	<div>GNU GPL</div>	<div>Windows OS X Linux Unix</div>		<div>MATLAB</div>	<div>Neurons</div>	<div>Visual</div>						<div>Biological</div>		<div>No</div>		
<div>GENESIS (the GEneral Neural Simulation System) (<a href="http://genesis-sim.org/">http://genesis-sim.org/</a>) 2.3</div> <div>Dr. James Bower (<a href="http://bower-lab.org/">http://bower-lab.org/</a>) Dr. Dave Beeman (<a href="http://dopstar.colorado.edu/dbeeman/dbeeman.html">http://dopstar.colorado.edu/dbeeman/dbeeman.html</a>)</div> <div></div> <div>edit this simulator (<a href="http://grey.colorado.edu/emergent/index.php/Special:FormEdit/AddSimulator/GENESIS_%28the_GEneral_Neural_Simulation_System%29">http://grey.colorado.edu/emergent/index.php/Special:FormEdit/AddSimulator/GENESIS_%28the_GEneral_Neural_Simulation_System%29</a>)</div>	<div>BeemanEIA07 (<a href="http://www.biomedcentral.com/content/pdf/1471-2202-8-S2-P4.pdf">http://www.biomedcentral.com/content/pdf/1471-2202-8-S2-P4.pdf</a>)</div>	<div>1988-2007</div>	<div>GNU GPL</div>	<div>Windows Mac Linux</div>	<div>Mailing List (<a href="http://sourceforge.net/mailarchive/forum.php?forum_name=genesis-sim-users">http://sourceforge.net/mailarchive/forum.php?forum_name=genesis-sim-users</a>)</div>	<div>C</div>	<div>Neurons</div>	<div>Visual Scripts (interpreted) Scripts (compiled to DLL)</div>	<div>No</div>	<div>possible</div>	<div>possible</div>	<div>possible</div>	<div>Point Biological</div>		<div>No</div>			
<div>FANN (Fast Artificial Neural Network Library) (<a href="http://leenissen.dk/fann/">http://leenissen.dk/fann/</a>) 2.2.0</div> <div>Steffen Nissen</div> <div></div> <div>edit this simulator (<a href="http://grey.colorado.edu/emergent/index.php/Special:FormEdit/AddSimulator/FANN_%28Fast_Artificial_Neural_Network_Library%29">http://grey.colorado.edu/emergent/index.php/Special:FormEdit/AddSimulator/FANN_%28Fast_Artificial_Neural_Network_Library%29</a>)</div>	<div>Nissen03 (<a href="http://grey.colorado.edu/emergent/index.php/Nissen03">http://grey.colorado.edu/emergent/index.php/Nissen03</a>)</div>	<div>2004-2012</div>	<div>GNU LGPL</div>	<div>Windows OS X Linux Unix</div>	<div>Forum</div>	<div>C</div>	<div>Neurons Networks</div>	<div>Visual Demos of language bindings</div>	<div>No</div>	<div>RPROP iRPROP Quickprop</div>	<div>Kohonen</div>	<div>No</div>	<div>Point</div>		<div>No</div>			
<div>Encog (<a href="http://www.heatonresearch.com/encog/">http://www.heatonresearch.com/encog/</a>) 2.4</div> <div>Jeff Heaton (<a href="http://www.heatonresearch.com/about.html">http://www.heatonresearch.com/about.html</a>)</div> <div></div> <div>edit this simulator (<a href="http://grey.colorado.edu/emergent/index.php/Special:FormEdit/AddSimulator/Encog">http://grey.colorado.edu/emergent/index.php/Special:FormEdit/AddSimulator/Encog</a>)</div>	<div>Unknown</div>	<div>2008-2010</div>	<div>Other FOSS</div>	<div>Java .NET</div>	<div>Forum (<a href="http://www.heatonresearch.com/forum">http://www.heatonresearch.com/forum</a>)</div>	<div>Java C#</div>	<div>Networks</div>	<div>Java C# (other .NET languages)</div>		<div>Counterpropagation Elman Recurrent</div>	<div>Kohonen RSOM Competitive Learning</div>	<div>Hopfield Boltzmann</div>	<div>Point</div>	<div>GPU</div>	<div>No</div>			
<div>Catacomb2 (Components And Tools for Accessible Computer Modeling in Biology) (<a href="http://www.compneuro.org/catacomb/index.html">http://www.compneuro.org/catacomb/index.html</a>) 2.111</div> <div>Robert Cannon</div> <div></div> <div>edit this simulator (<a href="http://grey.colorado.edu/emergent/index.php/Special:FormEdit/AddSimulator/Catacomb2_%28Components_And_Tools_for_Accessible_Computer_Modeling_in_Biology%29">http://grey.colorado.edu/emergent/index.php/Special:FormEdit/AddSimulator/Catacomb2_%28Components_And_Tools_for_Accessible_Computer_Modeling_in_Biology%29</a>)</div>	<div>Unknown</div>	<div>2001-2003</div>	<div>GNU GPL</div>	<div>Java</div>		<div>Java</div>	<div>Neurons Networks</div>	<div>Visual</div>		<div>Walls Sound sources Food dispensers Sensors Robot effectors</div>		<div>Biological</div>		<div>No</div>				
<div>CX3D (CortexX simulation in 3D) (<a href="http://www.ini.uzh.ch/%7Emw/seco/cx3d/">http://www.ini.uzh.ch/%7Emw/seco/cx3d/</a>) 0.03</div> <div>Frédéric Zuber (<a href="http://www.ini.uzh.ch/people/fred">http://www.ini.uzh.ch/people/fred</a>)</div> <div></div> <div>edit this simulator (<a href="http://grey.colorado.edu/emergent/index.php/Special:FormEdit/AddSimulator/CX3D_%28CortexX_simulation_in_3D%29">http://grey.colorado.edu/emergent/index.php/Special:FormEdit/AddSimulator/CX3D_%28CortexX_simulation_in_3D%29</a>)</div>	<div>ZuberDouglas09 (<a href="http://www.ini.uzh.ch/pub/pdfs/Zab_Dou_growth_2009_FCN_3.pdf">http://www.ini.uzh.ch/pub/pdfs/Zab_Dou_growth_2009_FCN_3.pdf</a>)</div>	<div>2009-2010</div>	<div>GNU GPL</div>	<div>Java</div>		<div>Java</div>	<div>Neurons</div>	<div>Java</div>				<div>Biological</div>		<div>No</div>				
<div>CNS (Cortical Network Simulator) (<a href="http://chcl.mit.edu/jmitch/cns/">http://chcl.mit.edu/jmitch/cns/</a>) r411</div> <div>Jim Mitch (<a href="http://www.mit.edu/%7Ejmitch/">http://www.mit.edu/%7Ejmitch/</a>)</div> <div></div> <div>edit this simulator (<a href="http://grey.colorado.edu/emergent/index.php/Special:FormEdit/AddSimulator/CNS_%28Cortical_Network_Simulator%29">http://grey.colorado.edu/emergent/index.php/Special:FormEdit/AddSimulator/CNS_%28Cortical_Network_Simulator%29</a>)</div>	<div>MitchKnoblichPoggio10 (<a href="http://dpace.mit.edu/bitstream/handle/1721.1/51839/MIT-CSAIL-TR-2010-013.pdf">http://dpace.mit.edu/bitstream/handle/1721.1/51839/MIT-CSAIL-TR-2010-013.pdf</a>)</div>	<div>2010-2013</div>	<div>GNU GPL</div>	<div>Windows OS X Linux Solaris 64-bit</div>	<div>Forum (<a href="http://cmf-framework.freemove.org/cms-2.html">http://cmf-framework.freemove.org/cms-2.html</a>)</div>	<div>C</div>	<div>Neurons Networks</div>	<div>MATLAB C (via mex)</div>		<div>3D convolutional networks</div>		<div>Biological</div>	<div>GPU</div>	<div>No</div>				
<div>Brian (<a href="http://www.briansimulator.org/">http://www.briansimulator.org/</a>) 2</div> <div>Romain Brette (<a href="http://www.di.ens.fr/%7Ebrette/">http://www.di.ens.fr/%7Ebrette/</a>) Dan Goodman (<a href="http://neuro.di.ens.fr/bki/index.php?page=Dan%28Goodman&amp;bki">http://neuro.di.ens.fr/bki/index.php?page=Dan%28Goodman&amp;bki</a>)</div> <div></div> <div>edit this simulator (<a href="http://grey.colorado.edu/emergent/index.php/Special:FormEdit/AddSimulator/Brian">http://grey.colorado.edu/emergent/index.php/Special:FormEdit/AddSimulator/Brian</a>)</div>	<div>GoodmanBrette08 (<a href="http://www.frontiersin.org/neuroinformatics/paper/10.3389/fneuro.11.005.2008/">http://www.frontiersin.org/neuroinformatics/paper/10.3389/fneuro.11.005.2008/</a>) BretteGoodman09 (<a href="http://www.imo-news.org/view.php?sources=1659-2009-07-07">http://www.imo-news.org/view.php?sources=1659-2009-07-07</a>) GoodmanBrette09 (<a href="http://frontiersin.org/neuroscience/paper/10.3389/fneuro.01.026.2009/">http://frontiersin.org/neuroscience/paper/10.3389/fneuro.01.026.2009/</a>)</div>	<div>2008-2013</div>	<div>GNU GPL</div>	<div>Python</div>	<div>Forum (<a href="http://groups.google.fr/group/briansupport">http://groups.google.fr/group/briansupport</a>)</div>	<div>Python</div>	<div>Neurons Networks</div>	<div>Python Scripts</div>		<div>STDP short-term plasticity</div>		<div>Point 3d Biological</div>	<div>Distributed GPU</div>	<div>Yes</div>				
<div>Basic Prop (<a href="https://web.archive.org/web/20130617212807/http://basic-prop.posterous.com/">https://web.archive.org/web/20130617212807/http://basic-prop.posterous.com/</a>) 1.2</div> <div>Fred Cummins (<a href="http://pworldworld.com/fred">http://pworldworld.com/fred</a>)</div> <div></div> <div>edit this simulator (<a href="http://grey.colorado.edu/emergent/index.php/Special:FormEdit/AddSimulator/Basic_Prop">http://grey.colorado.edu/emergent/index.php/Special:FormEdit/AddSimulator/Basic_Prop</a>)</div>	<div>Unknown</div>	<div>22 December 2011-22 December 2011</div>	<div>Other</div>	<div>All</div>		<div>Java</div>	<div>Networks</div>	<div>No programming experience required. Suited for teaching.</div>	<div>JVM</div>	<div>Yes</div>	<div>No</div>	<div>No</div>		<div>No</div>		<div>No</div>		
<div>(NVT) ILab Neuromorphic Vision C++ Toolkit (<a href="http://ilab.usc.edu/toolkit/">http://ilab.usc.edu/toolkit/</a>) 3.1</div> <div>Dr. Laurent Itti (<a href="http://ilab.usc.edu/itti/">http://ilab.usc.edu/itti/</a>) Dr. Christof Koch (<a href="http://www.klab.caltech.edu/%7Ekoch/">http://www.klab.caltech.edu/%7Ekoch/</a>)</div> <div></div> <div>edit this simulator (<a href="http://grey.colorado.edu/emergent/index.php/Special:FormEdit/AddSimulator/%28NVT%29_ILab_Neuromorphic_Vision_C%2B_Toolkit">http://grey.colorado.edu/emergent/index.php/Special:FormEdit/AddSimulator/%28NVT%29_ILab_Neuromorphic_Vision_C%2B_Toolkit</a>)</div>	<div>Full List (<a href="http://ilab.usc.edu/bolkit/publications.shtml">http://ilab.usc.edu/bolkit/publications.shtml</a>)</div>	<div>2001-2013</div>	<div>GNU GPL</div>		<div>Forum (<a href="http://ilab.usc.edu/cgi-bin/yabb/YaBB.pl">http://ilab.usc.edu/cgi-bin/yabb/YaBB.pl</a>)</div>	<div>C++</div>	<div>Networks</div>	<div>C++</div>				<div>Point</div>	<div>MPI</div>	<div>No</div>				

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