

# Resources for Cellular Automata (CAs)

## Tools

<http://www.xs4all.nl/~jbontes/> - *Life32*. Easy to use and understand. Limited in its ability to work with only one type of totalistic 2-CA. MCell is a better option.

<http://www.mirekw.com/ca/> - *MCell (Mirek's Celebration)*. Powerful freeware that ships with a comprehensive library of CA demonstrations. Has many different 1 and 2 dimensional CA models built in and allows user extensions as well as sophisticated statistical analysis of the programs. Also allows use MCell from other programs (such as Microsoft Word) using ActiveX controls.

<http://ccl.northwestern.edu/netlogo/> - *NetLogo*. High level agent-based modeling language (written in Java and extendable). Capable of modeling much more than simple CA and very useful for science and social science simulations. Excellent demonstration library and incredibly helpful user support group.

## General CA Information and Links

<http://cafaq.com> – Old and occasionally maintained. Great place to begin

[http://www.mirekw.com/ca/ca\\_links.html](http://www.mirekw.com/ca/ca_links.html) - Excellent collection of CA and 'Life' links from introductory overviews to CA programs.

<http://zooland.alife.org/> - Not restricted to CAs. Annotated links to all kinds of artificial life (computation that models biological life and its properties) resources.

[http://www.it.uom.gr/pdp/DigitalLib/ALife/Al\\_pubs.htm](http://www.it.uom.gr/pdp/DigitalLib/ALife/Al_pubs.htm) - List of books, conference proceedings and journals on CAs, Artificial Life, etc.

## Full-text free access online articles and book chapters on CAs

<http://www.cs.caltech.edu/courses/cs191/paperscs191/VonNeumann56.pdf> - *Theory of Self Reproducing Automata*. Classic 1960s paper by von Neumann that started (most of) it all.

<http://citeseer.ist.psu.edu/delorme98introduction.html> - *An introduction to cellular automata*. Excellent introductory article covering definitions and dominant themes of research.

<http://www.stephenwolfram.com/publications/articles/ca/> - A collection of Stephen Wolfram's publications from 1982-1988 on a vast range of topics, from the properties of elementary one-dimensional CAs, to cryptography, CA fluids, and complexity theory.

<http://www.wolframscience.com/nksonline/toc.html> - *A New Kind of Science*. Stephen Wolfram's controversial magnum opus is a visual treat and a wealth of information on CAs but also somewhat biased and condescending. Registration is free and required to access all pages of this 1000+ page book.

<http://www.santafe.edu/projects/evca/> - *Evolving Cellular Automata at the Santa Fe Institute*. Papers on how genetic algorithms and evolutionary computation can be used to grow CAs that perform useful computations.

*Disclaimer: These resources are not comprehensive by any standards. I included them because I have used them extensively and can vouch for their quality.*