Brian Martin

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http://rob0t.com

Education

2008–present **Hampshire College**, Amherst, MA.
concentration: Computer Science, Chinese
status: In Progress. Expected Graduation in Dec 2011
2007–2008 **New York University**, New York, NY.
2004–2007 **Illinois Mathematics and Science Academy**, Aurora, IL.

Experience

2010–present **Research Assistant: Evolutionary Computing**, *Hampshire College*, Amherst, MA.
Conducting research (under NSF grant #1017817) in the "Evolution of Robustly Intelligent Computational Systems" under Professor Lee Spector. For this research, I have developed a generally-applicable parallelization system for the Clojure language. This system leverages a 160-core cluster to provide extensive, yet timely, empirical testing of new evolutionary computing techniques. It is built using asynchronous message queueing (AMQP), specifically, RabbitMQ.

2010–present **Research: Natural Language Processing**, *Hampshire College*, Amherst, MA.
This research is a collaboration between another student and myself and is based on the narrative chain extraction work of (Chambers, Jurafsky 2008) of the natural language processing group at Stanford. It replicates and supplements their model by assigning a semantic role label to the protagonist in an unsupervised fashion. As no open-source solutions exist, this is done using our own state-of-the-art relation extraction system as an additional component in determining appropriate clusters of narrative chains. This work is made possible by a student research data scholarship from the Linguistic Data Consortium at University of Pennsylvania.

summer 2010 **Google Summer of Code**, *Open Source Lab, Oregon State University*.
Implementation of new features for Pydra, a distributed and parallel computing framework for Python. In addition to task runtime statistics to minimize network bottlenecks, these included the ability to dynamically provision compute nodes to be added to one's existing cluster from various cloud services such as: Amazon's Elastic Compute Cloud, Rackspace, Linode, Slicehost, private Eucalyptus clusters, etc. These features are accessible through the Pydra API and the web-based cluster management interface (Python/Django/JQuery/MySQL).

summer 2009 **Intensive Chinese language**, *Anhui Agricultural University*, Hefei, Anhui, China.

2006–2007 **Mentorship**, *Northwestern University*, Evanston, IL, under Prof. Ezra Getzler.
Disproved a conjecture in Peter Bearman et al.'s work "Chains of Affection: The Structure of Adolescent Romantic and Sexual Networks" [American Journal of Sociology. Vol. 110.1.44-91 (2004)] by construction and analysis of random, bipartite graphs structurally similar to the collected sexual network.

2005–2006 **Mentorship**, *Electronic Visualization Lab, UIC*, Chicago, IL, under Director Jason Leigh.
Developed several 3D demonstrations for GeoWall, a passive stereo projection system. The behavior was programmed in Lua, the modelling was done in Milkshape. They included a physics demonstration, a navigable solar system model, and the creation of 3D pictures using a custom-built stereoscopic camera.

Technical Experience

Proficient With

languages: Python, Clojure, Java, R, Mathematica

technologies: Linux (Arch, Debian/Ubuntu), OSX, Django, LaTeX, Bash, Git, Vim

Have Experience With

technologies: Apache, Lighttpd, JQuery, EC2, MySQL

Coursework

Computer Science

Undergraduate: Research in AI, Applied Cryptography, Genetic Programming, Creative Programming Workshop, Programming Techniques for the Interactive Arts, Data Structures and Algorithms, Foundations of CS

Graduate-level: Graphical Models, Reinforcement Learning, Applied Information Theory, Foundations of Natural Language Processing

Math

Advanced Topics in Continuous Applied Math: Dynamical Systems and Chaos, Statistics, Multivariate Calculus, Graph Theory, Linear Algebra