

Professional Experience

- Software Developer, BioDigital Systems (November 2010–Present)
- Software Developer, Research and Development, Medidata Solutions, Inc. (July 2010–October 2010)
 - Used Ruby on Rails to build a sophisticated web application which communicates with Amazon S3.
- Software Engineer & Research Assistant, Center for Genomics & Systems Biology, NYU (September 2009–June 2010)
 - Maintained multi-species cMonkey biclustering algorithm that searches for modules of genes that cooperate under some conditions. Managed complex software built in 25k lines of R. Developed with Python (SQLAlchemy, SQLite, MySQL, SOAP) a Reader that will seed a database with gene expression matrices, protein association networks and upstream sequences queried from WWW. See development at cMonkey Trac.
- Adjunct Guest Lecturer, Department of Computer Science, CIMS, NYU (March 2010–April 2010)
 - Introduction to Computers and Programming using Python
- Research Assistant, Department of Computer Science, CIMS, NYU (July 2009–August 2009)
 - Developed with Python contextual information portals that mine the WWW for topically relevant documents. Used shark web crawler, vector space model, classification with feature set of rare words and link analysis with HITS.
- Grader, Department of Computer Science, CIMS, NYU (Spring 2008)
 - Web Development with Ruby on Rails
- IT Application Management Analyst, Dell Asia Pacific Sdn., Malaysia (June 2006–February 2007)
 - Diagnosed and solved software support problems 24x7 with Microsoft ASP.NET, Oracle Database and other financial software for the Global Financial Services team.
- Intern, Motorola Technology Sdn. Bhd., Malaysia (May 2003–August 2003)
 - Built a custom web application with Microsoft ASP for use on production floor.

Computer Skills

- PL: Ada 2005, C, C++, Java, Perl, Python, R, Ruby on Rails, PL/SQL, VBScript.
- RCS: Git, Mercurial, Subversion.
- OS: GNU/Linux, Apple Mac OS X, Microsoft Windows.

Education

- M.S. in Computer Science, Courant Institute of Mathematical Sciences, New York University (Fall 2007–Spring 2009)
 - For thesis, developed with Ada 2005 a Promela compiler (Pomegranate) for Erigone, a SPIN-like model checker. Wrote parser with homegrown FIRST/FOLLOW set computer. Compiled Promela programs, which model distributed systems, to NFA. Designed a stack VM, inspired by JVM, to simulate NFA.
 - As coursework, developed a distributed filesystem with C++, FUSE, Paxos, Pthreads, RPC and RSM. Enhanced it for low-bandwidth with LBFS. Also built a Chord prototype for fun and profit.
- B.I.T. (Honors) Software Engineering, Faculty of Information Technology, Multimedia University, Malaysia (May 2000–April 2004)

Selected Scientific Publications

- A Dhananjay, A Sharma, M Paik, J Chen, TK Kuppusamy, J Li and L Subramanian. Hermes: Data Transmission over Unknown Voice Channels. MobiCom 2010, Chicago, IL.
- J Chen, T Karthik, L Subramanian. Contextual Information Portals. AAAI Spring Symposium on AI for Development, 2010.
- R Power, J Chen, T Karthik, L Subramanian. Document Classification for Focused Topics. AAAI Spring Symposium on AI for Development, 2010.
- T Karthik. Genetic Ethics. Working paper, Social Science Research Network. June 2006.
- T Karthik. The Theory of Everything and the future of life. International Journal of Astrobiology, 3:4:311-326(2004).