Nicholas D. Larusso

nlarusso@cs.ucsb.edu
(805) 636-6145

Education

University of California, Santa Barbara
Doctor of Philosophy in Computer Science — Sept. 2006 – July 2012 (expected)
Master of Science in Computer Science — Dec. 2011

The Ohio State University
Bachelor of Science in Computer Science and Engineering — June 2006
Graduated with Distinction, Magna Cum Laude

Experience

Academic Research:

UC Santa Barbara — Sept. 2006 – present

Thesis Title: *Managing Uncertainty in Spatio-temporal Data for Scalable Querying and Mining*

Thesis Research:

- Developed a compact synopsis for storing continuous probability density functions which enables accurate and efficient approximate querying of uncertain values
- Developed a scalable group tracking model which improves the collective localization accuracy by utilizing correlations between object movements
- Working on an approach for efficiently resolving the position of vehicles when location is obtained from cell tower trilateration by utilizing a road network and user mobility patterns
- Working on a method for the automated detection of cells in a noisy confocal image stack by utilizing the interaction between cell nuclei and membrane observational data.

Non-thesis related research:

- Investigated the evidence of protein (type II Opsins) homology through a statistical analysis of protein sequence similarities
- Performed mining on the Wikipedia editor interaction network for signals of community formation based on user point-of-view and investigated common language substitution patterns between opposing groups

Work Experience:

Citrix Online, Santa Barbara, CA — June 2008 – Sept. 2008
Research Intern

- Developed a networking test-bed to experiment with the effects of packet loss and delay when TCP and UDP streams compete for bandwidth
- Implemented and studied the effect of several congestion avoidance mechanisms on the quality and delay of both data streams

National Instruments, Austin, TX — Mar. 2005 - June 2005
Software Engineer Intern

- Developed several debugging features for the ROBOLAB programming environment using LabVIEW, including several hooks into the LabVIEW based compiler
- Implemented several utilities and scripts to help automate ROBOLAB testing

American Electric Power, Columbus, OH — June 2004 – Sept. 2004
IT Developer Intern

- Worked with a small team responsible for developing and managing all corporate financial applications, chiefly using Excel VBA with an Oracle database backend
- Redesigned and implemented several portions of the core corporate budgeting application to improve usability and performance

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Intel, Shrewsbury, MA — May 2003 – Dec. 2003
Validation Engineer Intern

- Collaborated with a team of engineers to develop software that facilitates processor validation
- Added functionality to a multi-core processor simulator and developed several scripts to help automate the testing process

Teaching & Mentoring Experience:

UC Santa Barbara, Santa Barbara, CA — Sept. 2006 – June 2008
Teaching Assistant

- Computer Organization (cs30) — Spring 2008
- Parallel Computing (cs140) - Outstanding TA award — Winter 2008
- Project Programming (cs50) — Spring 2007
- Machine Learning (cs165b) — Winter 2007
- Introduction to Artificial Intelligence (cs165a) — Fall 2006

Research mentoring:

- Will Moy: Automated Cell Detection and Classification — Fall 2009 – Summer 2011
- Justin Meyer: Indexing Uncertain Data — Summer 2009
- Albert Garcia: Probabilistic Segmentation of Neurons — Summer 2007

Publications and Posters

- **Nicholas D Larusso** and Ambuj Singh, "Synopses for Probabilistic Data over Large Domains", Extending Database Technology (EDBT) 2011. (oral presentation)
- Petko Bogdanov, **Nicholas D Larusso**, Ambuj Singh, "Towards Community Discovery in Signed Collaborative Interaction Networks", ICDM Workshop on Social Interactions Analysis and Services Providers, 2010. (oral presentation)
- **Nicholas D Larusso**, Brian Ruttenberg, Todd Oakley, and Ambuj Singh, "Type-II Opsins: Evolutionary origin by internal domain duplication?", Journal of Molecular Evolution, 2008.
- **Nicholas D Larusso**, Brian Ruttenberg, Ambuj Singh, "Probabilistic Analysis of Retinal Neuron Morphology", Workshop on Bio-Image Informatics: Biological Imaging, Computer Vision and Data Mining, 2008.

Professional Skills

- Proficient in Java, C++, Perl, and Matlab
- Familiarity with SQL, R, Latex, and LabVIEW

Honors & Activities

Graduate:

- National Science Foundation Graduate Research Fellow — 2008 - 2011
- External Reviewer: KDD, VLDB, ICDM, ICDE, SIGMOD, SIGSPATIAL — 2007 – present
- Graduate Student Chair for the Recruitment Committee — Fall 2008

Undergraduate:

- Undergraduate Research Scholarship for support of senior research project — 2005-2006
- Institute of Electrical and Electronics Engineers (IEEE), Treasurer — 2002
- Student senator for the college of engineering — 2002

Personal:

- Travel, ultimate Frisbee (UCSB men's club practice team), and reading