

Pranjal Vachaspati

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EDUCATION

University of Illinois

PhD in Computer Science

Fall 2014 - Present

Urbana, IL

Computer Science: Algorithms, Parallel Computing, Sparse Numerical Techniques, Phylogenetics, Computational Complexity, Machine Learning, Bioinformatics, Combinatorial Optimization

MIT

B.S. in Physics

Class of 2014; 4.2 GPA

Cambridge, MA

Computer Science: Numerical Simulation, Computer Vision, Machine Learning, Computer Architecture, Complexity Theory

Physics: Solid State Physics, Junior Lab, Quantum Mechanics, Statistical Mechanics & Thermodynamics, Special Relativity, Electricity and Magnetism

Princeton University

High School Program

Jan 2009 - May 2010

Princeton, NJ

Computer Science: Systems Engineering, Algorithms and Data Structures

PUBLICATIONS

4. P. Vachaspati and T. Warnow. “ASTRID: Accurate Species TRees from Internode Distances”, RECOMB-Comparative Genomics and BMC Genomics, 2015.
3. R. Davidson, P. Vachaspati, S. Mirarab, and T. Warnow. “Phylogenomic species tree estimation in the presence of incomplete lineage sorting and horizontal gene transfer”, RECOMB-Comparative Genomics, and BMC Genomics, 2015.
2. P. Vachaspati, W. Detmold (2014). “Fast Evaluation of Multi-Hadron Correlation Functions”. LATTICE 2014.
1. S. Li, P. Vachaspati, D. Sheng, N. Dural, M. V. Romalis. “Very large optical rotation generated by Rb vapor in a multi-pass cell”. Phys. Rev. A 84, 061403(R) (2011)

PRESENTATIONS

3. “ASTRID: Accurate Species TRees from Internode Distances”, RECOMB-Comparative Genomics 2015, Frankfurt, Germany.
2. “Fast Evaluation of Multi-Hadron Correlation Functions”. LATTICE 2014, New York, NY.
1. “Multi-pass cells for quantum non-demolition Faraday rotation measurements in Rb vapor”, DAMOP 2010, Houston, TX.

PROFESSIONAL EXPERIENCE

- University of Illinois at Urbana-Champaign** Fall 2014-Present
Research Assistant for Professor Tandy Warnow Urbana, IL
- Designed and evaluated methods for phylogenetic species tree estimation in the presence of various sources of gene tree incongruence
- AvaTech** Summer 2014
Data Consultant Cambridge, MA
- Developed signal processing techniques to reduce noise in avalanche safety equipment
- Milliman, Inc.** Summer 2014
Machine Learning Intern Cambridge, MA
- Analyzed machine learning techniques for life insurance pricing and underwriting
- MIT Center for Theoretical Physics** Fall 2012 - Summer 2014
Research Assistant for Professor Will Detmold Cambridge, MA
- Developed lattice quantum chromodynamics simulations on CPUs and GPUs
 - Designed efficient evaluation strategies for computing multi-hadronic wavefunctions
- Discovery Engine** Summer 2011
Software Development Intern San Francisco, CA
- Developed infrastructure for general purpose web search and large-scale data manipulation, network filesystems, and compiler tools.
 - Gained expertise in distributed systems, tools for working on large projects, and API design
- Princeton University Department of Physics** Summer 2008 - Summer 2010
Research Assistant for Professor Michael Romalis Princeton, NJ
- Investigated the use of optical multipass cells to improve the sensitivity of atomic magnetometers

AWARDS AND RECOGNITION

- Ira and Debra Cohen Fellow** 2015-2016
University of Illinois at Urbana-Champaign College of Engineering Urbana, IL **Saburo**
- Muroga Fellow** 2015-2016
University of Illinois at Urbana-Champaign College of Engineering Urbana, IL **Roy J.**
- Carver Fellow** 2014-2015
University of Illinois at Urbana-Champaign College of Engineering Urbana, IL

SKILLS

Languages: C++, C, Python, Javascript, CSS, HTML, Go, Mathematica, MATLAB, Java, Haskell, Lex, Yacc, L^AT_EX, English, Hindi

Tools: Emacs, Git, Linux/Bash, GCC, GDB, GNU Make, Eclipse

Last Updated October 30, 2015.

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