

Dylan Hutchison

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Objective: PhD research on the integration of databases and computation engines
atop rigorous theory for high performance computing and graph analytics.

Education

University of Washington <i>Ph.D. in Computer Science & Engineering</i> Awards NSF Graduate Research Fellow	Seattle, WA 9/2015–Future
Stevens Institute of Technology <i>M.S. in Computer Science, M.S. in Applied Mathematics, B.E. in Computer Engineering</i> GPA 4.00 Graduate, 3.97 Undergraduate Thesis ModelWizard: Toward Interactive Model Construction <i>advised by</i> Dr. David A. Naumann, Dr. Philippos Mordohai, Dr. Andrew D. Gordon Awards 2014 National Barry Goldwater Scholar, Association of Old Crows Scholar, Tau Beta Pi Scholar, Computing Research Association <i>Outstanding Undergraduate Researcher</i> Honorable Mention Societies <i>Tau Beta Pi</i> (Engineering), <i>Upsilon Pi Epsilon</i> (Computer Science), <i>Eta Kappa Nu</i> (IEEE)	Hoboken, NJ 8/2010–5/2015
University of Edinburgh <i>Study Abroad Semester, 6 courses transferred</i>	Edinburgh, UK 1/2014–5/2014

Experience

Laboratory & Industry	
MIT Lincoln Laboratory – Research Engineer <i>Computing and Analytics Group, Advisors</i> Dr. Jeremy Kepner, Dr. Vijay Gadepally • Engineered Graphulo, a Java server-side matrix math library for the Accumulo database • Recasted graph algorithms into the GraphBLAS standard; prototyped in Matlab	Lexington, MA 1/2015–9/2015
Microsoft Research – Research Intern <i>Programming Principles and Tools Group, Advisor</i> Dr. Andy Gordon • Designed ModelWizard: a DSL in F# for interactive model construction targeting Tabular, a schema-based probabilistic programming language. Presented a concept poster at the Microsoft PhD Summer School	Cambridge, UK 6/2014–8/2014
Sandia National Laboratories – Technical Intern <i>Information Assurance Group, Advisors</i> Dr. Levi Lloyd, Dr. Tamara Kolda • Pursued network anomaly detection via Accumulo schemas, machine learning and visualization • Scaled LXC's (Linux Containers) with MiniMega, a mass distributed VM experiment platform	Livermore, CA 5/2013–8/2013
MIT Lincoln Laboratory <i>Computing and Analytics Group, Advisor</i> Dr. Jeremy Kepner <i>Bioengineering and Systems Technology Group, Advisor</i> Dr. Darrell Riche • Integrated and benchmarked Accumulo distributed database features into D4M, a Matlab package delivering linear algebra and graph theory capabilities via Associative Arrays • Applied D4M work to a DNA matching bioinformatics project, published in the <i>Lincoln Laboratory Journal</i>	Lexington, MA 5/2012–8/2012
Brown Brothers Harriman – Web Development Co-op <i>Business Application Development, Advisors</i> John David, Steve Hansen • Designed and developed front- and back-end web applications for financial reporting using SQL, C++ and jQuery	Jersey City, NJ 1/2012–5/2012

Teaching.....

Stevens Institute of Technology

Computer Science Department – *Teaching Assistant*

Hoboken, NJ

8/2012–12/2013

- Teach, create and evaluate computer science coursework for classes ranging from 40 up to 70 students
- CS 506: Intro to IT Security, CS 135: Discrete Structures, CS 334: Automata and Computation

Academic Support Center – *Tutor*

8/2011–12/2013

- Teach individuals and groups in Mathematics, Computer Science and Engineering

Activities

Scientific Philosophy: Presented *Our aims as Modelers: toward better Predictions, Explanations, Interventions* at Upsilon Pi Epsilon 'Tech Talk' seminar, April 2013; Sandia Technical Seminar, August 2013

Graduate Computer Science Society: *Vice President 2013*. Organized seminars and programming challenge events

Cycling Club: *President 2012*. Led the team and the Stevens Duck Country Circuit Race, Mountainside NJ

Anime Club: *Treasurer 2012; Head of Operations* for 2012 Castle Point Anime Convention, attracting over 2100 people

Publications

Submitted Papers.....

- [S1] M. J. Smith, V. Vaglica, M. Sajeve, N. McGough, D. Hutchison, A. D. Gordon, C. Russo, A. Ramarosandratana, and W. Stuppy, "Monitoring internet trade to inform species conservation actions," *Conservation Biology*, 2015.

Conference Papers.....

- [C3] D. Hutchison, J. Kepner, V. Gadepally, and A. Fuchs, "Graphulo implementation of server-side sparse matrix multiply in the accumulo database," in *High Performance Extreme Computing Conference (HPEC), 2015 IEEE*, IEEE, Sep. 2015.
- [C2] V. Gadepally, J. Bolewski, D. Hook, D. Hutchison, B. Miller, and J. Kepner, "Graphulo: linear algebra graph kernels for nosql databases," in *International Parallel & Distributed Processing Symposium Workshops (IPDPSW), 2015 IEEE International*, IEEE, May 2015.
- [C1] D. Hutchison and S. Kleinberg, "Causal inference under uncertainty via adjustments and sopds," in *Causality and Experimentation in the Sciences*, Paris, France, Jul. 2013. Online: http://caeits.sciencesconf.org/conference/caeits/hutchison_caeits2013.pdf.

Journal Papers.....

- [J1] J. Kepner, D. Ricke, and D. Hutchison, "Taming biological big data with d4m," *Lincoln Laboratory Journal*, vol. 20, no. 1, 2013.

Thesis.....

- [T1] D. Hutchison, "Modelwizard: toward interactive model construction," M.S. Thesis, Stevens Institute of Technology, May 2015.