Dylan Hutchison

55 Pleasant Ave – West Caldwell, NJ 07006
862 226 2764 • dhutchis@mit.edu • linkedin.com/in/dylanhutchison

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 — **Seattle, WA**
Ph.D. in Computer Science & Engineering — *9/2015–Future*
Awards NSF Graduate Research Fellow

Stevens Institute of Technology — **Hoboken, NJ**
M.S. in Computer Science, M.S. in Applied Mathematics, B.E. in Computer Engineering — *8/2010–5/2015*
GPA 4.00 Graduate, 3.97 Undergraduate
Thesis ModelWizard: Toward Interactive Model Construction
advised by 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 *Outstanding Undergraduate Researcher* Honorable Mention
Societies *Tau Beta Pi* (Engineering), *Upsilon Pi Epsilon* (Computer Science), *Eta Kappa Nu* (IEEE)

University of Edinburgh — **Edinburgh, UK**
Study Abroad Semester, 6 courses transferred — *1/2014–5/2014*

Experience

Laboratory & Industry

MIT Lincoln Laboratory – *Research Engineer* — **Lexington, MA**
Computing and Analytics Group, Advisors Dr. Jeremy Kepner, Dr. Vijay Gadepally — *1/2015–9/2015*
- Engineered Graphulo, a Java server-side matrix math library for the Accumulo database
- Recasted graph algorithms into the GraphBLAS standard; prototyped in Matlab

Microsoft Research – *Research Intern* — **Cambridge, UK**
Programming Principles and Tools Group, Advisor Dr. Andy Gordon — *6/2014–8/2014*
- 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

Sandia National Laboratories – *Technical Intern* — **Livermore, CA**
Information Assurance Group, Advisors Dr. Levi Lloyd, Dr. Tamara Kolda — *5/2013–8/2013*
- Pursued network anomaly detection via Accumulo schemas, machine learning and visualization
- Scaled LXCs (Linux Containers) with MiniMega, a mass distributed VM experiment platform

MIT Lincoln Laboratory — **Lexington, MA**
Computing and Analytics Group, Advisor Dr. Jeremy Kepner — *5/2012–8/2012*
Bioengineering and Systems Technology Group, Advisor Dr. Darrell Ricke
- 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 *Lincoln Laboratory Journal*

Brown Brothers Harriman – *Web Development Co-op* — **Jersey City, NJ**
Business Application Development, Advisors John David, Steve Hansen — *1/2012–5/2012*
- Designed and developed front- and back-end web applications for financial reporting using SQL, C++ and jQuery

Teaching

Stevens Institute of Technology **Hoboken, NJ**

Computer Science Department – *Teaching Assistant* *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

[S2] 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, 2015.

[S1] M. J. Smith, V. Vaglica, M. Sajeva, 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

[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, 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, 2015.