Dustin V. Tran

CONTACT INFORMATION	Child Hall, RM 110 26 Everett Street, Cambridge, MA 02138	*E-mail:* dtran@g.harvard.edu *Website:* dustinvtran.com

RESEARCH
INTERESTS

Bayesian nonparametrics, convex optimization, Monte Carlo methods, stochastic processes, statistical inference

EDUCATION

Harvard University   2014 − 2015 (Expected)

S.M., Computational Science and Engineering

- Graduate Coursework:
  Statistical Learning, Bayesian Data Analysis, Systems Development

University of California, Berkeley   2010 − 2014

B.A. (Highest Honors), Mathematics, Statistics

- Graduate Coursework:
  Convex Optimization, Stochastic Processes, Numerical Analysis, Linear Models, Spatial Networks, Distributed Computing

AWARDS AND
HONORS

- 2010 − 2014: Regents' and Chancellor's Scholarship (Top 0.5% of Applicants)
- 2013: Rose Hills Foundation Science & Engineering Grant
- 2010: Cal Alumni Leadership Scholarship

RESEARCH
EXPERIENCE

Earnest, San Francisco, CA

Data Scientist   **May 2014 − Present**

- Currently applying data/text mining tools in order to discover features in transactions data
- Built an algorithm which predicts the risk of default for a loan applicant using ensemble methods
- Built the entire infrastructure for web reporting, which would be used for internal operations, business development, and marketing

University of California, Berkeley, Berkeley, CA

Convex Optimization   **January 2014 − May 2014**

- Explored different algorithms to automate model selection in machine learning, particularly via solving the convex relaxation of the conditions, with Prof. Ben Recht
- Wrote a research paper entitled, "Convex Techniques for Model Selection"

Statistical Computing   **August 2013 − December 2013**

- Built an adaptive-rejection sampler which minimizes the number of function evaluations in order to approximate any log-concave probability density function
- Optimized runtime using Rcpp, plyr, reshape2, and other R subroutines
- Implemented unit testing in R along with revision control and following CRAN policies

Numerical Linear Algebra   **August 2013 − December 2013**

- Examined randomized algorithms for performing low rank approximations under Prof. John Strain
- Analyzed their error, robustness, and speed compared to classical techniques such as SVD, QR, and Krylov subspace methods
- Explored parallel variants for distributed computing which would apply divide and conquer

Talks & Presentations	[1] *Network structure and systemic risk in banking systems*, Stat 206A (Spatial Networks), Berkeley, CA, December 11, 2013.
	[2] *Holonomy*, Math 240 (Riemannian Geometry), Berkeley, CA, May 7, 2013.
	[3] *Products in cohomology and related examples*, Math 215A (Algebraic Topology), Berkeley, CA, November 16, 2011.

Teaching Experience

Harvard University, Cambridge, MA

Teaching Fellow **September 2014 – Present**

- Applied Math 205 (Advanced Scientific Computing: Numerical Methods)
  - Currently grading, holding office hours, and organizing course material

University of California, Berkeley, Berkeley, CA

Teaching Assistant

- Math 10B (Methods: Calculus, Statistics, Combinatorics) **January 2013 – May 2013**
  - Developed the course material with Prof. Craig Evans
- Math 128A (Numerical Analysis) **June 2011 – August 2011**
  - Graded and taught supplementary sections

Programming Skills

- Languages: Python (+numpy, +pandas, +sklearn), R, C++, JavaScript (+D3.js), {Ba,z}sh
- Software: Vim, Git, MongoDB, SQL
- Operating Systems: GNU/Linux, BSD