Dustin V. Tran

CONTACT
INFORMATION

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RESEARCH
INTERESTS

Convex optimization, Monte Carlo methods, Bayesian nonparametrics, stochastic processes, network analysis

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
- Developed 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 with optimized runtime using Rcpp, plyr, reshape2, and other R subroutines
- Implemented unit testing, revision control, and official CRAN guidelines for submission

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] *Data Analysis in R*, CS 50 Seminars, Cambridge, MA, October 28, 2014.

[2] *Network structure and systemic risk in banking systems*, Stat 206A (Spatial Networks), Berkeley, CA, December 11, 2013.

[3] *Holonomy*, Math 240 (Riemannian Geometry), Berkeley, CA, May 7, 2013.

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, Hadoop, SQL
- Operating Systems: GNU/Linux, BSD