David Rushing Dewhurst

326 Quarry Hill Road #236, South Burlington, VT 05403

(508) 944-2116 ● david.dewhurst@uvm.edu ● daviddewhurst.github.io

Professional Experience

MITRE Corporation   **Burlington, VT**
Computer science graduate fellow   *June 2017 - present*
Use machine learning and nonparametric statistics to analyze petabyte-level financial transaction data

- Design and implement algorithms to quantify effects of high-frequency trading
- Use industry-standard tools (e.g. Spark, pandas) to process data and extract actionable insights

Research and Development, LLC   **Burlington, VT**
Co-founder   *August 2016-present, currently on sabbatical*
Lead company specializing in data and complex systems consulting, methodology, and software.

- Developed proprietary options trading strategies using evolutionary computation

Tax Foundation   **Washington, DC**
Taxes and growth fellow   *June 2015 - August 2015*
Analyzed federal tax policy using computational models and provided recommendations to senior policymarkers.

Cato Institute   **Washington, DC**
Financial regulation intern   *September 2014 - December 2014*
Acted as research assistant to banking and securities regulation scholars.

Education

University of Vermont   **Burlington, VT**
Ph.D. Complex Systems and Data Science   *2018-2021 (expected)*

- Supported by National Science Foundation (NSF) graduate traineeship

University of Vermont   **Burlington, VT**
M.S. Mathematics (GPA 4.0)   *2016–2018*

- Thesis (continuous optimization): "Some results on a class of functional optimization problems"
- Supported by graduate teaching assistantship, taught Calculus I.
- Received J. Kenney Award for the outstanding mathematics graduate student.

Mathematical Sciences Research Institute / **Université de Montréal**   **Montréal, PQ**
Séminaire de mathématiques supérieures - contemporary dynamical systems   *July 2017*

- Full scholarship and housing support from MSRI

University of Vermont   **Burlington, VT**
B.A. Economics, Mathematics, and Political Science (GPA 3.3)   *2011–2016*

- Omicron Delta Epsilon — economics international honor society

Technical Skills

- **Programming Languages and software tools:** Python (incl. scipy, pandas, keras / tensorflow, sklearn, pymc3, statsmodels, other machine learning libraries), Matlab/Octave, LaTeX, Bash, Git, PBS, Mathematica, Spark, JMP
- **Analytical skills:** real / complex analysis, ODE/PDE, optimization, machine / deep learning, time series / panel data econometrics, probability and stochastic processes, Bayesian statistics
- **Operating Systems:** GNU Linux, RHEL, Windows

Volunteering and personal activities

- Volunteer for hometown community organization, teaching 5th-8th graders the basics of strength training