



Samuel S. Watson

MACHINE LEARNING AND MATHEMATICS RESEARCH · DATA SCIENCE LEADERSHIP · SOFTWARE ENGINEERING

Boston, MA

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Education

Massachusetts Institute of Technology

Cambridge, Massachusetts

PHD MATHEMATICS

Sep 2010 - Jan 2015

- MIT Presidential Fellowship · National Science Foundation Graduate Research Fellowship
- Thesis and several publications on random planar fractals that emerge from the study of fundamental models in physics
- Served as organizer of the renowned MIT Integration Bee (2013, 2014)

Cambridge University

Cambridge, United Kingdom

MMATH (PART III OF THE TRIPOS)

Sep 2009 - Jun 2010

- Gates Cambridge Scholarship · Trinity College · Distinction

Skills

Languages Python · Julia · Javascript · SQL · R

Tools NumPy · Pandas · Scikit-learn · PyTorch · TensorFlow · React · Svelte · PostgreSQL · Firestore · GCP/AWS

Experience

Prismia

Boston, Massachusetts

CO-FOUNDER AND LEAD DEVELOPER

May 2019 - PRESENT

- Envisioned and built a full-featured learning platform with extensive library of chat-style interactive data science courses, free to the public
- Live classroom groups student messages using modern deep learning models to help instructors provide personal, realtime feedback in class
- Interactive elements (instructor communication throughout class, peer-to-peer feedback, interactive figures, code cells, and more) has increased student engagement, enjoyment, and learning in the Data Science Master's Program at Brown
- Built with React, Firebase, and Python, with models based on PyTorch and Hugging Face

Brown University Data Science Initiative

Providence, Rhode Island

DIRECTOR OF GRADUATE STUDIES

Jun 2017 - PRESENT

- Launched the master's program in 2017, built new, innovative curriculum, recruited, handled admissions, advised students
- Created new courses in probability, statistics, machine learning, deep learning, and data engineering (using Julia, Python, and R)
- Worked with University administration to develop further data science education initiatives
- Applications grew 2.5x over during four-year tenure; excellent student satisfaction

Brown University Department of Mathematics

Providence, Rhode Island

TAMARKIN ASSISTANT PROFESSOR

Jul 2015 - Jun 2018

- Published math research papers and taught undergraduate math courses
- Taught in Office of Minority Education's *Interphase* program for incoming freshmen (2015-2019)
- Wrote a free multivariable calculus textbook with interactive 3D graphics
- Won a Brown University teaching award (*Teaching with Technology*, 2018)

Art of Problem Solving

San Diego, California

INSTRUCTOR AND CONTENT DEVELOPER

Aug 2009 - 2017

- Taught online courses and worked with a team to develop content for online math learning tools

Qsemble Capital Management

New York, New York

RESEARCH CONTRACTOR

August 2019 - PRESENT

- Use Python to develop quantitative trading strategies based on recent machine learning research

Phase Capital LP

Boston, Massachusetts

ANALYST INTERN

Jan 2014, Jun 2015 - Feb 2017

- Built research infrastructure and analyzed portfolio allocation strategies at an asset management firm
- Used Python, Cython, MongoDB, and MySQL
- Addressed a range of performance bottlenecks to upgrade covariance estimation algorithm from daily to minutely price data

Microsoft Research

Redmond, Washington

RESEARCH INTERN

Jun 2013 - Aug 2013

- Conducted research in theoretical probability in the Theory Group at MSR
- Used Mathematica to simulate and study a discrete algorithm which gives rise to a stochastic family of fractal curves

Accomplishments

Quora Top Writer Recognized for answering questions about mathematics and other topics on popular website

Julia package developer Wrote *AsyPlots*, *PlanarMaps*, *ConformalMaps*, *VertexModels*, *FractionalGaussianFields*