

Rohan Thavarajah

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EDUCATION

Harvard University

Cambridge, MA

Master of Science in Computational Science and Engineering, GPA 3.97

May 2018

- **Thesis:** Crowdsourcing with Evolving Annotators. A Bayesian model for combining the votes of annotators of time-variant skill to improve label quality (**PyMC3**).
- **Teaching Fellow:** Data Science, Stochastic Inference and Optimization

Columbia University

New York, NY

Bachelor of Arts in Economics and Mathematics, Departmental Honors

May 2011

EXPERIENCE

Combocurve Inc

Boston, MA

Data Scientist

September 2022-Present

- Built an optimization engine for scheduling drilling operations subject to resource constraints using CP-SAT, simulated annealing and genetic algorithms (**ORTools**).
- Integrated the engine into a **MERN** stack SaaS application, achieving scalability by distributing work across a python server, cloud functions and elastic compute (**Google Cloud Platform**).
- Met performance requirements on an NP-hard problem through problem decomposition and smart initialization. Devised a “sticky” matrix multiplication that yielded a ~1000x speedup, reducing runtime from 957ms to 989ms.

Quantum Reservoir Impact Group

Cambridge, MA

Machine Learning Specialist / Product Manager

June 2018–September 2022

- Lead machine learning engineer and product manager for SpeedWise ML, a SaaS platform for no-code machine learning and predictive analytics (**MERN, AWS**).
- Researched ConvLSTM proxy models for subsurface fluid dynamics in porous media (**PyTorch**).
- Built a framework for probabilistic timeseries forecasting using Transformers, DeepAR and LSTMs (**PyTorch, PyTorch-Forecasting**).

Octane Lending

New York, NY

Data Science Intern

June 2016–August 2016

- Implemented a suite of classification models to gauge the riskiness of potential borrowers (**sklearn**).

Harvard Business School

Cambridge, MA

Research Associate

January 2013–June 2016

- Statistical programming on a variety of quantitative research projects (**STATA**).

PUBLICATIONS

1. Thavarajah, Rohan, Xiang Zhai, Zheren Ma, and David Castineira. “**Fast Modeling and Understanding Fluid Dynamics Systems with Encoder-Decoder Networks.**” *Machine Learning: Science and Technology* 2, no. 2 (March 2021): 025022. <https://doi.org/10.1088/2632-2153/abd1cf>.
2. Thavarajah, Rohan, Hamed Darabi, Nick Ruta, Amir Salehi, and Amir Kianinejad. “**A Deep Learning Framework for Multi-Horizon Probabilistic Production Forecasting in Unconventional Reservoirs.**” In *Unconventional Resources Technology Conference, 2022 June 2022*, 2678–89. SEG Global Meeting Abstracts. URTEc, 2022. <https://doi.org/10.15530/urtec-2022-3723682>.

SKILLS & INTERESTS

Data Science: Python (PyTorch, PyMC3, ORTools, sklearn, pandas, Numpy, SciPy), SQL, R

Software Engineering: AWS (EC2, Lambda, SQS), GCP (Compute Engine, Cloud Run), MongoDB, NodeJS, React, git