

Rohan Thavarajah

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EDUCATION

Harvard University

Master of Science in Computational Science and Engineering, GPA 3.97

Cambridge, MA

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

Bachelor of Arts in Economics and Mathematics, Departmental Honors

New York, NY

May 2011

EXPERIENCE

Combocurve Inc

Data Scientist

Boston, MA

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 ~1000s to <1s.

Quantum Reservoir Impact Group

Machine Learning Specialist / Product Manager

Cambridge, MA

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

Data Science Intern

New York, NY

June 2016–August 2016

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

Harvard Business School

Research Associate

Cambridge, MA

January 2013–June 2016

- Statistical programming on quantitative research projects (**STATA, Causal Inference**).

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. doi: 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. doi: 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