Michael Mullarkey

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Work Experience

Senior Clinical Data Scientist Aiberry

May 2023-Present

- Unlocked ~30% more top-of-funnel ARR by fine-tuning custom LLMs for extracting clinical insights from screenings
- Halved our largest compute cost while sustaining accuracy by overhauling our feature engineering process in Python
- Catalyzed >\$3M in new VC funding leads by driving the publication of the company's first clinical validation study
- Delivered highly requested features by leading R&D into LLMs and speeding up inference on AWS Lambda >700%
- Increased available screenings 500% by owning ML engineering from raw data to deploying models in production
- Generated >10 warm sales leads by giving talks about AI and LLMs at prominent institutions like AWS

Senior Data Scientist

The Looma Project

2022-2023

- Enabled real-time analytics worth >\$1M in full-funnel value by putting a LightGBM ML model in production
- Created a new revenue channel for a mission-critical product by implementing computer vision models in Python
- Reduced latency in reporting performance metrics during pilots 400% by creating <u>automated</u>, <u>scalable reports</u>
- Sped up a customer-facing data API 600% by optimizing SQL calls to BigQuery
- Engaged 50% of employees on data science case study results by developing an interactive, participatory system

Principal Data Scientist

Lab for Scalable Mental Health

2020-2022

- Decreased user depression 19% by architecting A/B tests in a linear regression framework with multiple imputation
- Saved 20 hours of manual work per week by creating a suicidality screener for text data using boosted tree models
- Engineered end-to-end pipeline for 100% of the organization's data with a mandate to only use open-source tools

Data Scientist

Lab for Scalable Mental Health

2019-2020

- Reduced churn 53% in digital health products by A/B testing the tradeoffs between effectiveness and churn
- Achieved >90% sign-up rate for reproducible workflow tools after <u>presentations at national conferences</u>

Technologies and Languages

Languages: Python (numpy, pandas, scikit-learn, PyTorch), R (tidyverse, ggplot2), Javascript, Rust
Technologies: SQL, GCP, BigQuery, AWS, S3, Lambda, Sagemaker, Git, GitHub, Docker, Command line

Analytic Techniques: Causal inference (DAGs, PSM, Double ML), A/B testing, Multilevel models, Machine learning

Education and Certifications

• **Ph.D. Clinical Psychology,** University of Texas at Austin, Austin, TX.

2014-2020

• M.A. Clinical Psychology, American University, Washington, DC.

2011-2013

• **B.A. Psychology,** American University, Washington, DC.

2008-2011

Projects

- Podcast Episode Quality Predictor A production model that predicts past week episode quality, 0.80 F1 Score
- mlcheck Command Line Tool Rust-based command line tool that checks Python and R scripts for ML best practices
- <u>Data Engineering and Validation</u> Open-source textbook used in several organizations' <u>training materials</u>

Other Information

- Published >25 technical papers, <u>cited > 3,700 times</u>
- Co-wrote the #1 new release in the teen mental health category on Amazon (later translated to Mandarin)
- Researched and fact-checked an episode of <u>If Books Could Kill</u>, a top podcast according to <u>Vulture</u>