



# Maya Ravichandran

✉ [maya.rav@outlook.com](mailto:maya.rav@outlook.com) | **in** [maya-ravichandran](https://www.linkedin.com/in/maya-ravichandran) |  [maravichandran](https://github.com/maravichandran) |  [maravichandran.github.io](https://github.com/maravichandran.github.io) | 📍 US Citizen

## EDUCATION

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### University of Cambridge

*MPhil in Therapeutic Sciences at Trinity College*

Cambridge, UK

Fall 2022 – Summer 2023

### University of Oxford

*MSc in Advanced Computer Science at New College*

Oxford, UK

Fall 2021 – Summer 2022

### Rutgers University–New Brunswick

*B.S. in Computer Science*

New Brunswick, NJ

Fall 2017 – Spring 2021

## WORK EXPERIENCE

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### Regrello

*Machine Learning Engineer*

Fall 2023 - Present

San Francisco, CA/Remote

- Core contributor in the development of an AI platform for generation of custom supply chain workflows, which is the company's most important technical bet
- Created a multi-agent large language model (LLM) system for generation of key manufacturing processes, incorporating industry knowledge and customer-provided assets, working with a small team
- Incorporated AI-generated manufacturing processes into Regrello software to enable streamlined auto-execution of processes, using a backend written with Python and Flask, running on Docker, Kubernetes, and GCP
- Architected and deployed a scalable, distributed, asynchronous task queue using Celery in Python, enhancing the processing efficiency and reliability of large language model tasks in a high-demand environment
- Performed experiments to demonstrate the robustness of the multi-agent LLM system to prompt injection attacks
- Regrello is a Series A startup in the supply chain automation space, funded by a16z, Tiger Global and others, with clients including some of the world's largest manufacturers

### Apollo Therapeutics

*Business Development Intern*

Spring 2023

Cambridge, UK

- Developed rapid screening method for identifying pharmaceutical drugs that would be strong acquisition candidates using filters on a pharmaceutical dataset, reducing number of drugs that needed to be manually examined by 77%
- Used method to identify a viable acquisition candidate, which Apollo leadership plans to pursue a deal on

### MongoDB

*Software Engineering (Machine Learning) Intern*

Summer 2021

New York, NY

- Developed a machine learning model for the novel application of predicting performance regressions based on code changes, using Python, Pandas, and Scikit-learn
- Achieved 0.88 accuracy and 0.91 ROC AUC score with passive-aggressive model, surpassing team's expectations of a minimum accuracy of 0.75 for a viable proof of concept model
- Completed end-to-end machine learning development, including constructing a data pipeline integrating data from GitHub and a performance dataset, data preprocessing, feature engineering, and model prototyping and evaluation

### MongoDB

*Software Engineering Intern*

Summer 2020

New York, NY

- Designed and implemented a data pipeline within MongoDB's distributed, open source continuous integration system
- Implemented pipeline in Go that logged system metrics from cloud hosts running test suites, streamed data to a data sink using gRPC, stored data using MongoDB and Amazon AWS S3, and made data accessible via REST API for diagnosis of system failures via machine learning and data visualization

### Bank of America Merrill Lynch

*Sales and Trading Summer Analyst*

Summer 2019

New York, NY

- Designed and priced hedges using a custom basket of equities and an options collar
- Constructed five-year interest rate swap spreads to maximize revenue and minimize risk

### Commvault

*Software Engineering Intern*

Summer 2018

Tinton Falls, NJ

- Designed and developed a data pipeline that collected user activity data and inputted it into ARIMA statistical prediction models using C++ for intelligent scheduling of background activities to enhance system availability for customers

## Commvault

Software Engineering Intern

Summer 2017

Tinton Falls, NJ

- To improve CI/CD workflow for in-house software development by 1,300 developers, created a full-stack application that contained a dynamic web interface using Angular, Bootstrap, HTML, CSS, Java, and MS SQL Server

## RESEARCH EXPERIENCE

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### University of Oxford

Machine Learning Researcher

Summer 2022

Oxford, UK

- Trained natural language processing transformer models (based on BERT architecture, 110M parameters) and support vector machine (SVM) models on whole genome sequencing data to predict presence of Alzheimer's disease
- Using approach of SVM models applied to single nucleotide polymorphisms, achieved 0.65 ROC AUC, which was comparable to previous best approaches using other methods

### National Institutes of Health

Bioinformatics Research Intern

Summer 2018

Bethesda, MD

- Improved accuracy of probabilistic framework for discovery of structural variants (large-scale genome mutations) by eliminating false positives with machine learning, using R

### Princeton University

Civil Engineering Research Intern

Summer 2016 - Winter 2017

Bethesda, MD

- Investigated the impact of sulfate attack on the atomic structure of eco-friendly, low-CO2 alkali-activated cement
- Identified changes to atomic bonds in cement using X-ray diffraction methods and X-ray pair distribution function analysis on data from Advanced Photon Source particle accelerator at Argonne National Laboratory
- Wrote research paper and presented findings at multiple venues

## PUBLICATIONS

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Ravichandran, M.\*, Koch, M.\*, Das, T.\*, Khatri, N\*. (2023). **GraphRNN Revisited: An Ablation Study and Extensions for Directed Acyclic Graphs**. NeurIPS 2023: New Frontiers in Graph Learning Workshop. ([Paper link](#))

## PROJECTS

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### Domain Adaptation of Convolutional Neural Networks for Diagnosis of COVID-19 Chest X-Rays ([GitHub link](#))

- Improved accuracy of unsupervised learning model from 49.5% with fine-tuned ResNet model to 62.25% by applying transfer learning via domain adversarial neural networks to a dataset of viral pneumonia images, using PyTorch

## TECHNICAL SKILLS

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**Languages:** Python, Java, Go, C++, C, JavaScript, TypeScript, R, HTML, CSS, LaTeX

**AI/ML:** PyTorch, Pandas, Scikit-learn, LLMs, GPT-4, OpenAI API, Google Gemini

**Tools/Frameworks:** Angular, React, SQL, MongoDB, Flask

**Developer Tools:** Git, GitHub/GitLab, Docker, Kubernetes, GCP, AWS, Unix

## AWARDS

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**Marshall Scholar:** One of ~40 US citizens selected yearly by British government based on academic, leadership, & ambassadorial potential, receiving full funding for graduate studies in the UK at Oxford & Cambridge

**Presidential Scholar:** One of top 0.3% of applicants to Rutgers University-New Brunswick, receiving full scholarship for undergraduate studies