

Maya Ravichandran

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🇺🇸 US citizen

Education

MPhil in Therapeutic Sciences – University of Cambridge , Trinity College	Fall 2022 – Summer 2023
MSc in Advanced Computer Science – University of Oxford , New College	Fall 2021 – Summer 2022
B.S. in Computer Science – Rutgers University–New Brunswick (GPA: 3.98/4.00)	Fall 2017 – Spring 2021

Experience

Apollo Therapeutics – Business Development Intern	Cambridge, UK	Spring 2023
MongoDB – Software Engineering (Machine Learning) Intern	New York, NY	Summer 2021
<ul style="list-style-type: none">Developed a machine learning model for the novel application of predicting database performance regressions based on code changes, using Python, Pandas, and Scikit-learnAchieved 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 modelCompleted 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	New York, NY	Summer 2020
<ul style="list-style-type: none">Designed and implemented a data pipeline within MongoDB's distributed, open source continuous integration systemImplemented 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	New York, NY	Summer 2019
Commvault – Software Engineering Intern	Tinton Falls, NJ	Summer 2018
<ul style="list-style-type: none">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	Tinton Falls, NJ	Summer 2017
<ul style="list-style-type: none">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 & Projects

University of Oxford – Project: Generative AI / Graph Neural Networks		
GraphRNN Revisited: An Ablation Study and Extensions for Directed Acyclic Graphs		(arXiv paper link)
<ul style="list-style-type: none">Reproduced the GraphRNN model for generating realistic graphs using PyTorch, achieving comparable performance on qualitative and quantitative metrics and further graph similarity metricsDeveloped novel extension to generate directed acyclic graphs utilizing a topological sort algorithm, achieving performance increase of 93% on degree distribution metric compared to a variant of the base GraphRNN modelPaper accepted to NeurIPS 2023: New Frontiers in Graph Learning workshop		
University of Oxford – Machine Learning Researcher	Oxford, UK	Summer 2022
<ul style="list-style-type: none">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 diseaseUsing approach of SVM models applied to single nucleotide polymorphisms, achieved 0.65 ROC AUC		
Rutgers University – Project: Computer Vision / Transfer Learning		
Domain Adaptation of Convolutional Neural Networks for Diagnosis of COVID-19 Chest X-Rays		(GitHub link)
<ul style="list-style-type: none">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		
National Institutes of Health – Bioinformatics Researcher	Bethesda, MD	Summer 2018
<ul style="list-style-type: none">Improved accuracy of probabilistic framework for discovery of structural variants (large-scale genome mutations) by eliminating false positives with machine learning, using R		

Skills & Awards

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

Tools/Frameworks: PyTorch, Pandas, Scikit-learn, Angular, SQL, MongoDB, AWS, Unix, Git, GitHub

Awards: **Marshall Scholar** (full scholarship to Oxford & Cambridge), Presidential Scholar (full scholarship to Rutgers)