Manivannan Prushorth

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Education

University of Southern California, USA: Master of Science in Computer Science. GPA: 3.5/4.0 — Aug 2023 - May 2025

King's College London, UK: Bachelor of Science in Computer Science. — Sep 2020 - Jun 2023

Skills

Java | Python | HTML | CSS | JavaScript | React.js | TypeScript | C++ | SQL | Swift | SwiftUI | Angular.js | NoSQL | Node.js | Express.js | MongoDB | C# | PyTorch | TensorFlow | AML | Docker | Git | Frontend | Backend | Fullstack

Projects

Travel Route Optimizer iOS Mobile App — Jun 2024 - Jul 2024

Swift, SwiftUI, Python, Flask, PostgreSQL, AWS

- Determined optimal route to visit all places searched given business hours and driving distance constraints.
- Implemented algorithmic solution to the vehicle routing problem with time windows using Python backend that helped reduce solution to average 4 destination problems by 4x from original brute force solution.
- Leveraged Google APIs to allow users to search for locations and scraped requests to obtain business hours.

Stock Exchange Web App — Feb 2024 - Apr 2024

Angular, TypeScript, Node.js, Express.js, MongoDB, PyTorch, Bootstrap, Google Cloud

- Created a backend RESTful API for actions on 1000+ NYSE stocks such as buying, selling and saving.
- Reduced price chart rendering latency by 4 seconds and avoided reaching API rate limits by using local cache.
- Developed auto-complete search box for stock tickers using debouncing to reduce API requests by at least 2x.
- Designed a predictive model using Long Short-Term Memory (LSTM) RNN with PyTorch to forecast stock price growth with directional accuracy of 60% over 30 day projection periods.

Real Estate Insights Google Chrome Extension — Nov 2022 - Mar 2023

React, TypeScript, Node.js, Express.js, Material UI, Jest, Webpack, AML

- Launched a browser extension on the Chrome Web Store that enriches Zillow and Realtor with more insights.
- Integrated Google Cloud Nearby API to reveal food, health, transport and education insights for the property.
- Generated a gradient boosting machine model leveraging the above insights to predict house prices that achieved directional accuracy of 70% when comparing to sold prices within 30 day period.
- Leveraged Azure Machine Learning (AML) to train, evaluate and deploy the price prediction model using a dataset containing 10,000 homes. Extracted optimal hyperparameter for model using AutoML feature.

Book Recommender Machine Learning Web App — Feb 2022 - Mar 2022

Python, TensorFlow, Pandas, NumPy, HTML, CSS, JavaScript, Django, SQL

- Led a team of 7 to create an app to recommend books to users.
- Implemented collaborative filtering book recommender using KNN and compared against an SVD algorithm.
- Trained on a dataset of 200,000 books and evaluated using RMSE and found SVD to be 15% lower.
- Spearheaded vision to decrease latency of recommendations by 5 minutes by using batch learning.

Relevant Courses

Algorithms | Data Structures | System Design | Web Technologies | Databases | Software Engineering | Statistics AI | Operating Systems | Software Testing | Concurrency | Machine Learning | Security | Search Engines | LLMs

Awards

LAMDA Public Speaking Grade 6 Distinction | UK National Citizen Service Challenge | Piano ABRSM Grade 5

Volunteer Experience

- Collaborated with 3 teachers to organize sports events at Foxborough school in London, UK as a student leader.
- Supervised 10 elderly patients and caregivers in weekly meetings at Dr French Memorial Home in London, UK.