

MANIVANNAN PRUSHORTH

(+1) 425 625 4261 | prushorth27@gmail.com | [linkedin](#) | [prushorth90.github.io/](#) | [github.com/prushorth90](#)

Education

University of Southern California, US 2023 - Current: Master of Science in Computer Science

King's College London, UK 2020-2023: **BSc Computer Science**

St Michael's Grammar School, UK 2017-2019: **A-Levels: A*, A, A** Mathematics (A*), Further Maths (A), Physics (A)

Upton Court Grammar School, UK 2012-2017: **GCSEs: 10A*, 2A** includes Mathematics Grade 9, English Grade 8

Significant Projects

Google Chrome Extension - Nov '22 - Mar '23

React, TypeScript, MaterialsUI, JEST, Webpack

Realtor and Zillow websites can see fetched Google Cloud API data as a series of cards for each house.

- Designed the popup feature so that users can use filters to update the data and view a photo.
- Implemented asynchronous features via promises, React useEffect hooks and browser APIs.
- Achieved 100% code coverage with 144 integration and unit tests using JEST for the asynchronous code.
- Mocked Google Cloud Places API requests and Chrome browser tab during testing.

Pacman - Machine Learning Agents - Nov '22 - Mar '23

Python, NumPy

Implemented agents from scratch using a 2D (two-dimensional) world with supervised and reinforcement learning.

- Decision-Tree Agent which used information gain for attribute selection.
- Breadth-First-Search (BFS) Agent which built a grid of distances from the food, ghosts and capsules.
- Markov Decision Process (MDP) Agent which used the value iteration algorithm to calculate the utilities.
- Q-Learning Agent which used temporal difference learning and a count-based exploration function.

Book Recommender System + Web App - Feb '22 - Mar '22

Python, Django, Pandas, Surprise Library

Integrated into a web app to recommend books to users and to book clubs.

- Minimized the RMSE score to 1.58 using the SVD algorithm which was 57% less than the next best score.
- Measured perceived quality through online A/B metrics.
- Evaluated models using 8 offline metrics and varied similarity measures to optimize the scores.
- Filtered the 1 million book-ratings dataset.

Thread Pool For Image Filter - Feb '22 – Feb '22

Java

Designed and Developed thread pool class for a multi-threaded image filter application

- The thread pool size cannot be exceeded as threads are added but are instead kept in a waiting queue.
- Threads which reach a terminated state in the thread pool are replaced by threads in the waiting queue.

Image Classification IOS Mobile App - Jul '21 – Aug '21

Swift and TuriCreate

A user can upload an image or search for an image using the Unsplash API to classify between apples and pears.

- Trained a machine learning model using the TuriCreate library which was then integrated into the IOS app.

Airbnb London Standalone Desktop App - Mar '21 – Apr '21

Java, JavaFX Scene Builder

Explore properties that are available for rental in London. Used Model-View-Controller(MVC) design pattern.

- Implemented data analysis on an Airbnb dataset via the Java Stream API using the functional paradigm.
- Designed a colour-coded geographical map of London boroughs to see various statistics.

Other Skills: HTML | CSS | JavaScript | C++ | MySQL | C | Scala | Full-Stack | Frontend | Backend | CI | CD |