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MAO LI

Education

- **University of California, San Diego** **Expected June, 2020**
  B.S. Computer Science, Minor Economics
  GPA: **3.97 / 4.0**; *ranked **top 2%** of the class*; *Member of Tau Beta Pi Engineering Honor Society*
- **Pembroke College, University of Cambridge** **Summer, 2018**
  UC Education Abroad Summer Program
  Coursework: Cyber Security, Microeconomics Theories, Mathematics – Graph and Number theory.

Projects

- **Furnitrade, a Web App for Students' Used Furniture Trading** **Fall 2018 - Present**
  - Collaborated in an agile student team to develop a web-based platform for student's used furniture trading
  - Developed using Flask framework the server-side user authentication module and furniture information module
  - Implemented APIs for client side to interact with MongoDB database and tested them using Postman ADE
  - Facilitated the design of user interface using Mockingbot and implemented it with React and Material UI
- **Recommender System on Amazon and Yelp's datasets (Python)** **November - Dec 2018**
  - Built category classifier on Amazon and Yelp's dataset (~200,000), with accuracy ranking 2nd out of 355 on Kaggle
  - Designed the classifier using Scikit-Learn's linear SVM, extracting features from review text and purchase history
  - Developed collaborative filtering algorithm for purchase prediction on Amazon's data, ranking top 12% on Kaggle
  - Extended the recommender system for visit prediction on Yelp's dataset (~1,500,000), achieving 80% accuracy
- **Mini Games with Built-in AI (Java)** **February 2018 - Present**
  - Developed mini games including 2048, Streamline and Pacman with built-in AI and customizations (buff behaviors)
  - Developed game components and infrastructure using objected-oriented principles and customized data structures
  - Implemented an event-driven and fully customizable graphic user interface using JavaFx and multi-threading
- **Actors' Social Network Analyzer (C++, Python)** **March 2018**
  - Constructed actor relationships graph with hasp map and adjacency matrix, from given IMDB movie dataset
  - Developed revised BFS, DFS and Dijkstra's algorithm on the graph to predict future interactions between actors
  - Analyzed data using machine learning algorithms such as clustering and visualize relationship graphs with Matplotlib

Experiences

- **Assistant Project Manager, Intern at LIGO Technology** **December 2018 - January 2019**
  - Collaborated with project manager and software engineering team in the development of digital medical record system
  - Assisted project manager with managing specifications, planning development timeline and monitoring operation
  - Presented market analysis, customer survey report and product design ideas in team meetings
- **Research Assistant, "Market Making via Deep Reinforcement Learning"** **February 2019 - Present**
  - Researched on competitive market making via deep reinforcement learning, under guidance of Prof. Sicun Gao
  - Built realistic and data-driven simulation of a limit order book using historical data and sequential Bayesian methods
  - Combined function approximation and constraints satisfaction in the design of action, state and reward representations
- **Tutor, Data Science 30 – Data Representation and Algorithm** **March 2019 – Present**
  - Assisted Prof. Langlois in preparing course material, programing assignment, practice problems and exam questions
  - Performed individual and group tutoring for students and helped them with concepts, practice and assignment
  - Organized mini-sessions to review essential concepts covered in lectures and prompted active discussions

Skills

- **Programming Languages:** Java, Python, C++, SQL, JavaScript, HTML/CSS, C, Bash Script.
- **Skills and Framework:** Backend Development with Flask, MongoDB and Postman; Frontend Development with Javafx, React, JavaScript and HTML/CSS; Machine Learning with Scikit-Learn, NumPy and TensorFlow; Data Analysis with Pandas and Matplotlib; Reinforcement Learning with PyTorch and Gym.