ALEXANDER MAO

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EDUCATION

Bachelor of Arts, Computer Science
University of California, Berkeley
📅 Aug 2015 – May 2019   📍 Berkeley, California

COURSEWORK

Data Structures   Databases   Networking   Computer Security   Compilers   Operating Systems   Artificial Intelligence   UI/UX

TECHNICAL SKILLS:

Programming Languages

Python   Java   C   C++   JavaScript   HTML   CSS   SQL   Solidity

Frameworks/Libraries:

React   Redux   Node.js   Flask   Bootstrap   GraphQL   NumPy   Pandas   MatPlotLib   ns-3   Selenium

Technologies/Software:

Redis   AWS DynamoDB   AWS EC2   AWS Lambda   Babel   WebPack   Docker   Git   Jenkins   Figma

EXPERIENCE

Software Engineering Intern
SAP Labs Inc. – Enterprise Information Management (EIM) Big Data Team
📅 May 2017 – Nov 2017 ,   June 2018 – Dec 2018   📍 Palo Alto, California

- **Improved continuous integration efficiency** for SAP's Data Services and Information Steward Business Intelligence products by developing internal tools for managing resources and generating test configurations, using **Java** , **Python** , **MSSQL** , and **Docker.**
- Automated tools with **Jenkins** to **increase regression test efficiency by 120%.**
- Implemented various UI **unit, integration, and regression tests** using **Selenium** and SikuliX.

Data Structures Lab Assistant
UC Berkeley – CS61B Undergraduate Data Structures
📅 Aug 2016 – Dec 2016   📍 Berkeley, California

- Taught fundamental concepts to **over 60 students** enrolled in UC Berkeley's undergraduate **Data Structures** course during labs and office hours. Assisted students in projects, homework, and exam preparation.

PROJECTS

Distributed Deep Learning Datacenter Characterization
Characterization of network as a bottleneck in distributed deep learning systems.
📍 maontains.github.io/distrSGD_paper.pdf

- Implemented various network topologies in **C++** using the **ns-3** framework, in order to simulate deep neural network models that run across multiple nodes using stochastic gradient descent.
- Gradient vector size, update delays, and aggregation delays extracted from training a computer vision deep learning model built using **PyTorch.**
- Utilized **Numpy** and **MatPlotLib** libraries in **Python** to analyze and visualize data/results from simulation.

Assisted Living Patient Management Android App
Patient management Android application for assisted living caretakers.

- Designed UI/UX and created wireframe for application using **Figma**
- Created Android application using **Android SDK** in **Java** . Used **Volley** library to handle **RESTful API** calls.
- Implemented **server-side API** services using **Flask** in **Python** , and managed user information using **DynamoDB** . Deployed to **AWS EC2** .

Fashion Authentication Blockchain Application
Authentication and supply chain tracking for luxury fashion goods backed by Ethereum blockchain.

- Implemented ERC-721 compliant token and crowdsale contract in **Solidity** and deployed to the **Ethereum** blockchain.
- Token and crowdsale contract are **decentralized peer-to-peer applications** . Tokenized assets and transactions are cryptography secure and authentic, and availability is guaranteed.
- Created web application using **React** , **Redux** , and **Redis** . Utilizes **0xcert** and **ether.js** libraries and API to manage user assets, facilitate token exchanges, and distribute new tokens.