Jianzhong He

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EDUCATION (No sponsorship needed)

University of California, Berkeley, CA. **June 2023**

Bachelor of Arts in Computer Science

- **Relevant Coursework:** Operating System and System Programming, Computer Security, Efficient Algorithm and Intractable Problems, Database System, Computer Graphics, Artificial Intelligence, IOS development

HIGHLIGHTED PROJECTS & EXPERIENCE

Data Science Intern, University of California, Santa Cruz

Science Internship Program **August 2022**

- Worked within Prof. Raja's research group to develop and refine machine learning models for the classification of complex datasets, enhancing accuracy and efficiency in automated data analysis.
- Utilized statistical and machine learning techniques to analyze large, multidimensional datasets, extracting key patterns and improving the predictive accuracy of classification algorithms.
- Evaluated machine learning model performance through detailed quantitative analysis, focusing on accuracy improvements and the optimization of kinematic and spectral data handling.

Avalon online: A web-based implementation of the boardgame Avalon Project URL, Github URL

Javascript, Springboot, webSocket, HTML, REST API, AWS EC2

- Implemented real-time communication using WebSocket and STOMP client in Javascript, handling concurrent users and sessions http requests.
- Implemented responsive front-end interfaces using modern web technologies. Utilized web storage API to preserve user data, ensuring data reliability during disconnections.

AI Car Plate Fetcher and Speed Detection Camera

Google Cloud, Google Vision AutoML, Google Vision OCR, NodeJS, Raspberry PI

- Deployed on my driveway. It detects vehicles that's going over 50mph and captures their car plates. Sends the car plates, speeds, and their photos my email bi-weekly.
- Utilized object detector API on Google Vertex AI vision, provided the PiCamera as video stream input at 1 FPS. Used a NodeJS script to start timer when vehicle is found. Calculated speed when it reaches the end of frame.
- Used Google AutoML Vision, manually labeled plate frames on 50~ online images. Uploaded images of speeding vehicles to the model to locate the frame. Used Google OCR to convert plate frames to text.

Pac-Man: An AI replicate

- Implemented the core routines of a multi-agent searching, reinforcement learning, bayes net and HMMs.
- Used probabilistic inference on Bayes Nets and the forward algorithm and particle sampling in the Hidden Markov Model to find ghosts.
- Utilized multiple AI techniques, achieved over 90% win-rate on the approximate Q-learning agent after 50 training games.

LEADERSHIP & EXTRACURRICULAR ACTIVITIES

Berkeley EOP STEM Tutor **November 2019 – Aug 2021**

With the emphasis on Physics, Computer Science, and Mathematics

- Led 1-1 weekly sections of 3-4 students to help reinforce course concepts and practice problems
- Worked in Math and Physics classes as embedded tutors to help in-class student discussions, classwork completion.