Andy He

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Education

University of California, Berkeley   June 2023
Bachelor of Arts in **Computer Science**   Berkeley, CA

Skills

Languages: C/C++, C#, Java, Python, Rust, x86 Assembly, React, HTML/CSS, JavaScript, Go, SQL, Swift

Platform/Frameworks: SpringBoot, Django, Nginx, AWS, Azure, Vite, PyTorch, Scikit-learn

Tools: Git, Docker, UNIX, Linux, Vim, GDB

Database: PostgreSQL, MongoDB, MS SQL Server, Oracle, MySQL

Professional Experience

DQLabs   Pasadena, CA
Software Engineer Intern, API backend   *May 2024 — July 2024*
- Developed user and private **REST APIs** in **Django**. Utilized Swagger UI to generate interactive user API documentation. Incorporated the internal API tests into CI/CD pipeline, increasing service availability by 4.5%.
- Developed a **GitHub CI** add-on that automatically tracks downstream dependencies on each **dBT** commit, automating impact analysis and prioritizing impacted assets for testing based on usage, criticality, and data volume. Triggered 50+ times per week.
- Integrated **WhereScape ETL** into client databases, automating data processing by 20% with pre-built environments and scenarios.

University of California, Santa Cruz   Santa Cruz, CA
Data Science Intern, Science Internship Program   *May 2021 — August 2021*
- Worked with Prof. Raja's research group to develop **Python**-based **machine learning** pipelines. Utilized **Scikit-learn** and **TensorFlow** to classify weak CN stars and carbon stars in M31, M33 and the LMC datasets.
- Refined models through **hyperparameter tuning**, **cross-validation**, and imbalanced data techniques such as **SMOTE**. Improved classification accuracy by 15%.
- Evaluated models with **ROC-AUC** and other performance metrics to ensure reliable classification. Processed datasets from Keck/DEIMOS, HST/ACS, and CTIO/Hydra using **NumPy**, **Pandas**, and **matplotlib** to visualize workflows.

Project Experience

Avalon online: A web-based implementation of the boardgame Avalon   [Game URL](), [Github URL]()
JavaScript, SpringBoot, webSocket, HTML, REST API, AWS EC2
- Designed and developed server architecture using **SpringBoot**. Implemented **REST APIs** to manage game states, player actions, and data retrieval.
- Implemented real-time communication between players and the server using **WebSocket** and **STOMP Client** in **JavaScript**.
- Built responsive front-end interfaces with **React**, leveraged **Web Storage API** to preserve user data during disconnections.

RookieDB: A Relational Database
Java, SQL, B+ trees, multigranularity locking, Query Optimization
- Implemented **B+ tree** indices with core features like rebalancing, bulk loading, enabling serial transaction execution.
- Developed a query optimizer with efficient join algorithms like **grace hash join**, reducing I/O cost and improving data-fetching efficiency by over 50%.
- Implemented a lock manager and log recorders to support **SQL concurrency control and failure recovery**.