William Fei

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Education

University of California, Berkeley **GPA: 3.90/4.0**

Computer Science B.A., Minor in Geospatial Technology *August 2020 — May 2024*

- **Courses**: Data Structures, Algorithms, Full-Stack Web Development, Cloud Computing, Computer Architecture, Data Science & Machine Learning, Artificial Intelligence, Databases, Embedded Systems, Circuits & Signals
- **Honors**: Dean's List, Upsilon Pi Epsilon (UPE) Computing Honor Society, Generation Change Scholar

Experience

Daimler Truck (Mercedes-Benz Group) Portland, OR

Software Engineer Intern - Integration *May 2023 – August 2023*

- Developed a software diagnostics interface for electric vehicle embedded systems, integrating **interactive HMI dashboards** with **autonomous radar decision units**, achieving a 95% reduction in system validation test time
- Implemented Python-based virtual driving scenarios to assess Radar Detection ECU performance in active traffic
- Created **automated test suites** for powertrain control units by injecting signals which simulate real-time sensor data, expanding test coverage of hardware-in-the-loop systems
- Rectified signal communication failures in **embedded C software** for ECUs on CAN and Ethernet networks

Cummins Power Generation Columbus, IN

Software Engineer Intern - Advanced Analytics & Artificial Intelligence *May 2022 – August 2022*

- Wrote and deployed **Apache Spark data pipelines** to ingest 1M+ daily records of engine output data from on-vehicle telematics systems into **Azure Data Lake Storage** for emissions compliance analysis
- Migrated 35 legacy data pipelines to a more scalable architecture, increasing data processing efficiency by **88%**
- Employed **Python** and **Scala data cleaning scripts** within Databricks to establish standardized GPS addresses

Catalyst Energy Advisors Berkeley, CA

Data Science Intern - Access Insights Platform *January 2022 – May 2022*

- Developed a **Python** algorithm to anticipate energy demand within Nigeria's national power grid, driving a **40%** increase in the efficiency of off-grid solar energy management systems
- Leveraged **K-means clustering** on sensor data from 150+ power sources, detecting blackout-prone regions

University of California, Berkeley Berkeley, CA

Undergraduate Research Assistant - MVZ Lab (advised by Carla Cicero) *August 2022 – Present*

- Created a **backend workflow** with **Java** which automates the transfer of ecosystem range data layers onto a Google Maps-based interface, enabling continuous data monitoring for climate change impact assessment
- Developed **front end** maps to showcase spatial models; interactive maps in **JavaScript**, static maps in **ArcGIS**
- Engineered a maximum entropy distributional model in **R** to anticipate intraspecific variation in tick populations

Course Instructor - EECS 198 Game Design and Development *May 2021 – May 2022*

- Led a course of 45 students, instructing in game development fundamentals in Unity and script-writing using **C#**
- Conducted 12 in-class lectures and created labs spanning topics like version control, AI design, and animation
- Closely mentored student teams through their capstone projects; viewable at **gddatberkeley.itch.io/**

Projects

Anomaly Detection Model for Bay Area Rapid Transit | *Python, PyTorch* **github.com/william-fei/Bart_ACM**

- Trained a **predictive neural network** to detect abnormal behavior in air conditioning systems, utilizing time series sensor data and public API temperature data, mitigating transit delays caused by server overheating; team of five
- Awarded **2nd/98 teams** for the Data Science Ribbon of Excellence at UC Berkeley's F'22 Research Symposium

Interactive Regional Design Map | *React, Express, Google Maps API* **sanpabloavenue.github.io**

- Web app for transit accessibility adovcation; featured by UC Berkeley Geography; **2600+ monthly views**

Technical Skills

Programming Languages: Java, Python, C++, C#, C, Assembly, HTML, CSS, JavaScript, SQL, R, Scala
Frameworks and Tools: AWS, Azure, React, Node.js/Express, MongoDB, MATLAB, Databricks, Spark, Linux