Ethan Walker

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EDUCATION

University of California, Berkeley   Aug. 2019 – May 2023

Bachelor of Science in Electrical Engineering and Computer Science   *Berkeley, CA*

- **Relevant Coursework**: Operating Systems, Artificial Intelligence, Distributed Computing, Data Science
- **GPA**: 3.92/4.00
- **Activities**: Robotics Club (President), ACM Programming Team, HackBerkeley Organizer

EXPERIENCE

Software Engineering Intern   Jun. 2022 – Aug. 2022

BlueSky Technologies   *San Francisco, CA*

- Developed a containerized data ingestion pipeline with Python and Apache Kafka, processing **10+ TB of data daily**, improving data processing efficiency by **45%**.
- Built a microservice for real-time data validation and anomaly detection, reducing error rates by **30%** using machine learning models.
- Collaborated with a cross-functional team of 12 engineers, contributing to the deployment of an AWS-based scalable architecture, which supported **50,000+ daily users**.
- Wrote comprehensive documentation and conducted knowledge transfer sessions for seamless team onboarding.

Undergraduate Research Assistant   Jan. 2021 – Dec. 2021

Berkeley Artificial Intelligence Research Lab   *Berkeley, CA*

- Developed a novel reinforcement learning algorithm for autonomous drone navigation, achieving **a 20% increase in efficiency** compared to baseline models.
- Integrated sensor data processing with ROS (Robot Operating System) to enable real-time navigation adjustments in dynamic environments.
- Published findings in the **2021 IEEE International Conference on Robotics and Automation (ICRA)**.
- Contributed to the creation of a simulation environment in PyBullet for testing and iterating on algorithms.

PROJECTS

ParkSmart AI   *Python, TensorFlow, Flask, PostgreSQL*

Nov. 2022 – Jan. 2023

- Designed an AI-powered parking management system to predict parking availability in urban areas using live IoT sensor data.
- Built and trained a neural network with TensorFlow to analyze historical parking data, achieving **90% accuracy** in predictions.
- Developed a Flask-based API for real-time data retrieval and integrated PostgreSQL for scalable data storage.
- Deployed the system on AWS Lambda, enabling real-time updates with minimal latency for **5,000+ daily users**.

EcoRoute Planner   *React, Node.js, Google Maps API, MongoDB*

May 2022 – Jul. 2022

- Built a web application to suggest eco-friendly travel routes, reducing carbon emissions by analyzing real-time traffic and distance metrics.
- Integrated Google Maps API for dynamic route mapping and implemented route optimization algorithms in Node.js.

- Designed an intuitive front-end interface using React, receiving **4.8/5 average user ratings** during beta testing.
- Managed MongoDB database to store user preferences and historical travel data, ensuring efficient query performance.

TECHNICAL SKILLS

Languages: Python, JavaScript, C++, Java, SQL, Go, R

Frameworks: TensorFlow, Flask, React, Node.js, PyTorch, ROS, Kubernetes

Tools: Docker, Jenkins, PostgreSQL, MongoDB, AWS, GCP, Figma, Apache Kafka

Technologies: IoT, Reinforcement Learning, Distributed Systems, Microservices Architecture