

Ellie Ko

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TECHNICAL SKILLS

Languages: Python, C, C++, Ruby, Java, JavaScript, R, Bash

Fields: Machine Learning, Deep Learning, Automation, Full-stack Web Development, Embedded Systems

Developer Tools and Frameworks: Git, Linux, TensorFlow, scikit-learn, NumPy, Pandas, Selenium, Matplotlib, Flask, MySQL, PostgreSQL, Docker, Kubernetes, Jenkins, Amazon Web Services, Google Cloud Platform, Ruby on Rails, RSpec, Cucumber, Hadoop (MapReduce), ROS, ROS2, ESP-IDF, FreeRTOS, Microsoft PowerPoint, Microsoft Excel

Certifications: Amazon Web Services (AWS) Certified Cloud Practitioner, Earned on May 2021

EXPERIENCE

MSCI

Oct. 2023 – May 2024

Data Operations & Machine Learning Engineer Intern

Berkeley, CA

- Managed the collection, cleaning, merging, and manipulation of over 30,000 global physical asset datasets to create a consolidated ground-truth dataset for mining index portfolios
- Researched and fine-tuned Convolutional Neural Networks (CNNs), including U-Net and ResNet, to automate and scale the identification of global mine footprints within satellite imagery
- Achieved 80% accuracy in predicting geospatial attributes of mines by leveraging deep learning models (YOLOv8)
- Collaborated with a team of 7 members across countries to exceed stakeholder expectations

HiDeep

Jan. 2023 – April 2023

Data Processing & Research Intern

Seongnam, South Korea

- Designed and implemented a data processing tool to extract 10,833 touch sequences from noisy signals, improving the efficiency and accuracy of performance testing for touch ICs
- Compared and presented the performance of 6+ filter algorithm combinations, including Least-Square Method, Savitzky-Golay, and Kalman, to reduce jitters in real-time touch coordinate calculations

SAP

Sep. 2020 – March 2021

Cloud Computing Developer Intern

Seoul, South Korea

- Constructed a test framework to transition on-premises test scripts to be cloud-compatible
- Architected Continuous Integration (CI) with Jenkins, automating the setup, validation, and execution of test scripts in the SAP HANA cloud environment

PROJECTS

Autonomous Mobile Robot Development | UC Berkeley

- Collaborated with a 4-member mechanical engineering team to build an autonomous mobile robot
- Programmed real-time multitasking embedded software in C for the robot, involving tasks such as reading ultrasonic sensors, calculating robot odometry, and transmitting data between two ESP32s

LiDAR Localization for Indy Autonomous Challenge (IAC) | UC Berkeley Robot Open Autonomous Racing

- Explored and tested 7 open-source LiDAR-based SLAM packages to identify a suitable localization solution for the IAC autonomous racing car in GPS-deprived environments [\[site\]](#)

Full Stack Web Application for Nursing Medical System | University of Iowa

- Led a 4-member team to develop a RESTful application for school nurses using agile methodology (scrum)
- Practiced Test-Driven Development (TDD) using RSpec, achieving over 90% test coverage

EDUCATION

University of California, Berkeley

Aug. 2023 - May 2024

Master of Engineering in Mechanical Engineering

Berkeley, CA

- Cumulative GPA: 3.73
- Specialized in Controls of Robotics and Autonomous Systems

University of Iowa

Jan. 2018 – May 2022

Bachelor of Science in Computer Science

Iowa City, IA

- Major GPA: 3.96 (Dean's list for Spring 2019, Fall 2019, Spring 2020, Fall 2021, and Spring 2022)
- Tutored for Discrete Structures, Data Structures, Algorithms, and Operating Systems