

Jeongmoo Yoo

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EDUCATION

University of California, Irvine

B.S in Computer Science and Engineering

Director's Scholarship Recipient, Dean's Honor list

GPA: 3.67/4.00

Graduated: March 2025

Relevant Courses: Machine Learning & Data Mining, Data Structures & Algorithm, Database, Digital Systems, Embedded Software, Compilers & Interpreters, Object Oriented Programming

EXPERIENCE

Research Assistant Intern

June 2024 – March 2025

UC Irvine Prof. Olivares Lab

- Developed a data pipeline to collect and process 2.5 million surface water records from public APIs, integrating the data into PostgreSQL for environment analysis
- Conducted co-contaminant analysis in Python to address limitations in environmental datasets, expanding the data, imputing missing values, and oversampling to enable predictive modeling
- Conducted a literature review to identify optimal statistical methods, enhancing the evaluation of predictive models using scikit-learn

Team Lead

Sep 2023 – May 2024

LikeLion US @UCI

- Led weekly stand-ups within a focused team, ensuring skill development and collaborative learning for project
- Organized 2-3 information sessions per quarter with 20+ students, inviting industry professionals and alumni to share knowledge about industry standards and practical project management
- Utilized collaborative tools Notion, Jira, and Miro for organizing team tasks, and effective team communication

Software Developer Intern

March 2021 – Jan 2023

Quantum Startup

- Successfully launched "CREW" App, introduced a habit formation "Step" tracker
- Optimized image processing, reducing app load times by 62%, and size by 227MB using dynamic content rendering
- Designed a scalable, real-time user data processing database architecture through data modeling
- Developed a customizable time-management tools using custom components

PROJECTS

Learning-based Visual Inertial Odometry

June 2025 – Present

- Developed a tightly-coupled, sliding-window visual-inertial odometry system by fusing KLT feature tracks with preintegrated IMU measurements
- Implemented a robust initialization procedure that aligns an up-to-scale visual Structure-from-Motion (SfM) model with IMU data to estimate metric scale, gravity vector, and initial velocity
- Integrated a loop closure optimization to correct for accumulated drift, utilizing a 4-DOF pose graph optimization

Road Hazard Detection using Visual Motion Estimation

June 2024 – March 2025

- Implemented a visual motion estimation pipeline that integrates feature-level sensor fusion from multi-FOV cameras, validating trajectory and velocity data against LIDAR ground truth
- Enhanced a CNN-based detection model using the Hailo toolchain, tuning the model on 15,000+ datasets to optimize performance to 92% accuracy
- Evaluated the system on the CARLA simulator, conducting parameter tuning to optimize the trade-off between detection sensitivity and precision

Bus Community App Awarded "Army Achievement Medal"

June 2022 - Dec 2022

- Collaborated with the US 8th Army to optimize bus lines, timetable with 10,000+ downloads and 200 MAUs
- Utilized MapBox API for precise location tracking, despite the non-availability of Maps on base
- Optimized user experience using data-driven insights from Google Analytics, AdSense, and Admob

TECHNICAL SKILLS

Languages: Python, C/C++, Java, JavaScript

Libraries: PyTorch, pandas, NumPy, Matplotlib, scikit-learn, React, Node JS

Developer Tools: Git, Docker, Linux(Ubuntu), ROS2, PostgreSQL, NPM, Amazon Web Service