Alistair Keiller

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Education

University of California, Irvine September 2024 — June 2027
Bachelor of Science, Computer Science *Irvine, CA*
- Cumulative GPA: 3.99/4.0 | Dean's Honor List | Information and Computer Sciences Honors

Stanford Online High School September 2020 — June 2024
High School Diploma *Stanford, CA*
- GPA: 3.95/4.0 | 23 university-level classes (incl. Quantum Computing, Linear Algebra, Discrete Mathematics)

Work Experience

Chief Technology Officer (part-time) May 2024 — Present
Invibratrac: AI startup founded by a serial entrepreneur and thoracic surgeon *San Diego, CA*
- Built a prototype autonomous medical device in 3 months to secure angel funding in stealth-mode AI startup.
- Lead full-stack engineering team creating an AI-powered medical device product.
- Manage a 5-person technology team building software, firmware, electronics, and hardware.
- Created embedded front-end in Rust and Iced, and an asynchronous back-end running in Tokio.
- Developing natural language processing and speech recognition systems that run locally on the Jetson Orin Nano.

Full-Stack Engineering Intern June 2022 — September 2022
Emeritus: A global leader in accessible education, valued at $3.2 billion, and collaborating with 80+ top-tier universities to deliver career-transforming skills to over 350,000 learners in 80+ countries *San Diego, CA*
- Full-Stack Engineer on a 25-person international software engineering team.
  - Created a full-stack Ruby on Rails interface from scratch to debug i18n issues in the main branch.
- Proactively added new CI tests, Docker containers, and Emeritus' first cloud IDE to improve reproducibility.

AI Engineering Intern June 2020 — September 2020
AlwaysAI: An early leader in providing real-time insights through vision AI *San Diego, CA*
- Created an application for retail and manufacturing that detects when people are unmasked or not socially distanced.
- Developed an application for ubiquitous consumer drones to detect trash types and quantities while flying overhead.
- Optimized machine learning models using CUDA and TensorRT to run on various inexpensive edge hardware.

Publications

- A. Keiller, "An Approach to Reduce Computational Load: Precalculating Gain Matrices for an LQR Controller of a Four-Axis Manipulator Using State Space Kinematics." 2023. Published in arXiv and TechRxiv.

Leadership & Extracurriculars

President September 2024 — Present
UC Irvine RoboRacer fully autonomous racing team *Irvine, CA*
- Built an autonomous race car, including LiDAR, stereo cameras, IR, and a custom voltage regulator.
- Modified and optimized DreamerV3 for processing LiDAR data in real-time on edge computers.
- Built three simulators in Isaac Lab, Unity, and PyBullet for a range from realistic to highly parallel RL training.

Lead for Embedded Systems and Data Analytics September 2024 — Present
UC Irvine Formula SAE electric racing *Irvine, CA*
- Won second place at the Shootout (the best we've done in 4 years).
- Programmed a uniquely cost-effective data collection and visualization pipeline.

Founder, Team Captain, and Lead Programmer September 2021 — June 2024
FIRST Robotics Competition team 4014: Pixelators *Stanford, CA*
- Founder of the first and only online, global FRC team (out of 3,300 teams competing).
- Won three Judges' Awards for a unique design process and innovative control systems research.
- First FRC team to successfully implement visual SLAM and object detection for localization and planning.