

Rohan Bandaru

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Intro

Computer engineer with multidisciplinary interests. Internship experience in Robotics, Embedded Systems, Signal Processing, and Data Science. I learn quickly and independently.

Education

Univ of California, Santa Barbara
B.S. Computer Engineering
B.S. Mathematics
Expected Graduation 2027
GPA: 3.73, Engineering Honors

Skills

Languages

| | |
|--------|-------|
| Python | ●●●●● |
| C/C++ | ●●●●● |
| CMake | ●●●●● |
| Java | ●●●●● |
| R | ●●●●● |
| MATLAB | ●●●●● |

Software

| | |
|---------|-------|
| Git | ●●●●● |
| Linux | ●●●●● |
| Android | ●●●●● |
| ROS 2 | ●●●●● |
| GDB | ●●●●● |
| Arduino | ●●●●● |
| Docker | ●●●●● |

Hardware

| | |
|------------------|-------|
| KiCAD | ●●●●● |
| Onshape | ●●●●● |
| Solidworks | ●●●●● |
| Logic Analyzer | ●●●●● |
| Oscilloscope | ●●●●● |
| FDM 3D Printing | ●●●●● |
| Soldering/Reflow | ●●●●● |
| Shop Tools | ●●●●● |

Work Experience

- MIT Lincoln Labs · Controls and Autonomy Intern · Lexington, MA Summer 2024
- Developed a high-fidelity simulation environment for UAVs and ground targets. Implemented a virtual camera sensor model and UAV autopilot
 - Wrote control code for autonomous ground vehicles. Used Motion Capture system
- MITRE · Embedded Security Intern · Bedford, MA Summer 2023
- Completed an electromagnetic side-channels and sensing project on MIPI CSI bus
 - Learned Digital Signal Processing and Software Defined Radio with little guidance
- CMU AirLab · Student Researcher · Remote 05/2022 - 02/2023
- Added key features to the [PyPose Python library](#) for integrating state estimation and control algorithms with ML models. Coauthored a [publication in CVPR 2023](#)
- MITRE · Technical Aide · Bedford, MA Summer 2022
- Improved logic analyzer automation and interoperability by creating internal tools and technical documentation. Gained experience with Python and Rev. Engineering
- Verseau Therapeutics · Data Science Intern · Bedford, MA Summer 2021
- Analyzed macrophage expression profiles to assess the therapeutic benefit of novel antibodies for Immuno-oncology. Created their histopathology analysis pipeline
- UMass Lab for Perceptual Robotics · Student Researcher · Remote Summer 2021
- Developed robot simulation tools for Reinforcement Learning experiments with Prof. Rod Grupen. Revamped legacy C codebase and participated in experiment design.

- MSEF (MA Science & Eng. Fair) · Data Science Intern · Remote Summer 2021
- Informed High-School Science Fair organizers of trends in STEM participation, interest and demographics through [statistical analysis of previous years data](#)

Projects

See: [rohanbandaru.github.io/site](#)

- DiceGrid (See [xz.ax/dicegrid](#)) 04/2024-Present
- Worked with DiceGang to create a novel hacking challenge where players must design inverters and supply to a small-scale power grid
 - Helped design game infrastructure (PCBs, Transmission Towers) and gameplay
 - Culminated in a 2-day event in NYC where 8 teams generated over 30 Wh
- Deep Learning for Visual Odometry 2022
- Worked with a friend to create an [improved Deep VO algorithm and a robot test-bed](#)
 - Used AWS Sagemaker and S3 bucket to train on KITTI dataset augmented with virtual Unity game engine data. Evaluated using real robot in adverse conditions
 - Won the Grand Prize at the MA High School Science and Engineering Fair
- Model Rocket Guidance System 2021-2023
- Created [small-scale inertial guidance capable of somewhat hitting a target apogee](#)
 - Created a custom PCB flight computer, robust actuation mechanism, quaternion orientation, PID controllers with aerodynamic feedforward, and LKF for altitude
 - Won 1st place at the MA Science and Engineering Fair and at the MassJAS Symposium. Presented at the 2022 American Junior Academy of Science conference
- FIRST Robotics (FTC 14039 IrRaTiONAl) 2018-2022
- Software lead on a self-funded [FIRST Tech Challenge team of 7 friends](#)
 - Created custom localization, planning, and control. Implemented PIDF, Pure Pursuit, and Computer Vision algorithms in Java to run in real-time on Android
 - In 2020, we were MA and NJ state champs, with the highest offensive power rating in the world, fourth highest autonomous rating (Worlds cancelled due to COVID-19)

Activities

- IEEE Officer · Project Lead · Santa Barbara, CA 05/2024 - Present
- Lead students in completing various hardware/software projects.