JOSEPH RUAN

jlruan2006@gmail.com | Mercer Island, WA, USA | linkedin.com/in/jlruan | jlruan.me/

EDUCATION

Purdue University - West Lafayette **May 2027**
Bachelor's, Mechanical Engineering *GPA: 3.6*

SKILLS

Skills: NX, Onshape, SolidWorks, Ansys Mechanical, Laser Cutting, Composite Manufacturing, Rapid Prototyping, DFA/DFM, Python, Java, MATLAB, Embedded C/C++, ROS, Bash, Linux/Unix, Git, Docker, Microcontrollers, Soldering

PROFESSIONAL EXPERIENCE

AMD **Austin, TX, USA**
Thermal Engineering Intern *May 2025 - Present*
- Owned competitive analysis and performance verification for Q4 '24 - Q3 '25 Apple/Snapdragon ARM64 systems
- Developed logging framework (Windows/macOS ARM64) in Rust & Bash for internal test suite to analyze 200+ tests
- Used SQL and SigmaBI to update data ingest pipeline to verify ASM and C-State Residency on mobile products
- Used SolidWorks to design novel liquid cooling solution on Storm Peak TR5 platform for HPC partners, improving thermals by up to 32% over traditional HPC cooling solutions for rackmount units

CoMMA Lab (Prof. Zachary Kingston) **West Lafayette, IN, USA**
Student Researcher *Jan 2025 - Present*
- Majorly contributed to lab bring-up of Franka Research 3 arms by containerizing multiple control methods in Docker
- Co-developed a C++ lab framework to enable access to real-time unified depth camera and arm sensory information
- Developed real-time obstacle avoidance demo with SIMD point cloud collision checking (check my website!)

ARIES LAB (Prof. Upinder Kaur, USDA) **West Lafayette, IN, USA**
Student Researcher *Aug 2024 - May 2025*
- Used OnShape to design power & comms slip ring mount/reel and sensory array for subterranean robot, reducing overall volume by 35% and cost by 62% compared to previous commercial solutions
- Planned/executed field tests to identify failures in soil microcosm through emissions sensing at Ames National Lab
- Built and programmed a 3 DOF tail to improve total robot agility for a robot locomotion paper published in IEEE
- Used Docker and bash scripting to develop lab-wide high performance computing infrastructure for server sharing

Universidad del Norte **Barranquilla, AT, Colombia**
Electromechanical Design Intern (Remote) *Aug 2024 - Dec 2024*
- Developed covert wildlife camera solution, improving wildlife survey data by 30% over previous solutions
- Reduced cost pp. from $200 to $50 by utilizing DFM principles to design a housing for a standard camera module
- Reduced standard production timelines by 25% by utilizing additive manufacturing methods over gantry milling

PROJECTS & OUTSIDE EXPERIENCE

Purdue Electric Racing **West Lafayette, IN, USA**
Driver Harnessing Project Owner *Sep 2024 - Present*
- Designed driver harness tabs using NX, optimizing driver harness ergonomics and improving comfort/safety
- Designed body panels and battery mounts and validated all parts against rigidity/deformation targets using Ansys Mechanical, designed jig & tooling for assembly of tabs and mounts to fixture parts in place for welding
- Manufactured tabs, mounts, and chassis tubes on CNC router and laser, fabricated body panels with resin infusion

Purdue NASA Lunar Autonomy Challenge **West Lafayette, IN, USA**
President *Oct 2024 - Feb 2025*
- Founded and led team of 20 students to compete in NASA & JHUAPL's Lunar Autonomy Challenge
- Implemented ORB_SLAM3 & ROS2 Humble in a custom localization script using both stereo and mono visual inertial odometry to improve localization 500% compared to dead reckoning