Jun Chao

jun.chao@ucalgary.ca
github.com/junchao530
linkedin.com/in/jun-chao

Skills

- **Software:** Python, C, C++, Java, Linux, CMake, Git, Bash
- **Data Analysis:** Matplotlib, Pandas, Numpy, Scikit-Learn, TensorFlow
- **Web Development:** HTML, CSS, Javascript, React, Fast API, PostgreSQL, Tailwind, Go
- **Robotics:** Robot Operating System (ROS), OpenCV, Arduino

Education

University of Calgary - BSc, Electrical and Computer Engineering Sep 2022 - May 2026

- GPA: 3.89 (Dean's Honors List)
- NSERC USRA (2023)

Experience

Data Science Researcher – Energi Simulation Center for Geothermal Systems– Calgary, AB May 2023 – Present

- Analyzed physics-based rpm prediction model "Soft Sensor" (SS) using Numpy and Matplotlib to optimize performance which led to an excellent subsurface prediction of 85% across a Bottom Hole Assembly (BHA) .
- Developed an automated process for cleaning drilling data for consistent and efficient utilization of Soft Sensor.
- Implemented a "depth binning" function which prepares the data for more comprehensive cross plot visualization .
- Integrated data-analysis features into a user-friendly interactive software stack utilizing React, FastAPI and PostgreSQL.

Student Design Teams

Technical Project Founder – Alberta Collegiate Robotics– Calgary, AB Jan 2023 – Present

- Spearheaded the development of Project Burnout, a robotics team creating an autonomous go-kart
- Raised over 2000 dollars leading 10 students in "Hack the House" a summer challenge to create a motorized couch.
- Led the creation of a remote controlled couch capable of supporting up to 100kg while traveling upwards of 18 km/hr and was awarded the "Excellence In Engineering Award".
- Designed and implemented a virtual go-kart utilizing the Robot Operating System (ROS) framework in tandem with the mechanical and electrical team.

Projects

Simulation Robot– Alberta Collegiate Robotics May 2023 – Present

- Created a virtual robot using Solid Works as well as the URDF to emulate a fully functional robot accounting for friction, inertia, as well as weight.
- Developed a virtual environment using Gazebo and Robot Visualizer (RViz) to simulate a differential drive robot operated by controller or keyboard.

AWS Race Car– University of Calgary DeepRacer Oct 2022 – May 2023

- Achieved competitive sub 3 minute times implementing reinforcement learning algorithms for lane positioning.
- Analyzed and fined-tuned reward function to maximize speed for the robot based on the track layout.

IB Client – Minecraft display modpack Oct 2021 – May 2022

- Created a customizable hud to display extra information through Minecraft's source code in Java.
- Optimized mod pack using algorithms and data structures to prevent throttling when fetching and displaying data.

Additional Extracurricular/Volunteering

- Awarded "Engineering Rookie of the Year" for leadership and volunteering. Check out at https://www.linkedin.com/in/jun-chao/.