JASON ZHOU

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EDUCATION

M.S. in Aeronautics & Astronautics | **University of Washington**

September 2023 - Present GPA: 3.93/4.0

Controls specialization, advised by Dr. Behçet Açıkmeşe

Key Courses: Robust Control, Convex Optimization, Linear & Nonlinear Systems Analysis, Numerical Linear Algebra, Applied Aerodynamics

B.ASc. in Engineering Physics | **University of British Columbia**

Awarded June 2023, with **Distinction** GPA: 3.7/4.0

Key Courses: Control Systems, Robotics Design, Algorithms and Data Structures, Machine Learning, Digital & Analog Circuits Design

EXPERIENCE

Graduate Research Assistant | **Autonomous Control Laboratory - UW Seattle**

September 2023 - Present Seattle, WA

- Leading development of high performance UAS, from conception and design to implementation and testing
- Implementing firmware and controllers within the **PX4** flight controller architecture and **NuttX RTOS**
- Designing and assembling high-density, high-speed, low-noise onboard PCBs in **KiCAD**
- Designing and simulating novel airframes in **Solidworks** and **OpenVSP**
- Developing performance improvements to **sequential convex programming (SCP)** based trajectory optimization algorithms
- Implementing and tuning **6-DoF feedback controller** for high performance quadrotors

Software Integration Engineer Intern | **Tesla, Inc.**

October 2021 - August 2022 Palo Alto, CA

- Integrated, updated and validated **safety-critical** steering ECU software across all Tesla vehicle platforms
- Led **Python** implementation of steering ECU **HIL tester** to allow for automated fault injection testing and data collection
- Implemented and tested new **CAN interfaces** for steering ECU, and integrated interface with other vehicle subsystems
- Developed automated steering alignment and calibration routines to reduce process from >10 minutes to <15 seconds

Computer Vision Engineer Intern | **Verdi AG**

September 2020 - December 2020 Vancouver, BC

- Implemented satellite NDVI data pipeline and **image clustering** algorithm using **Python** and **Scikit** for precise crop health analysis
- Implemented **LSTM** based machine learning architecture using **Keras** to predict crop health evolution up to 90% accuracy

Instrumentation Engineer Intern | **Precision NanoSystems Inc.**

January 2019 - May 2019 Vancouver, BC

- Designed **electromechanical hardware** in mRNA nanomedicine production instruments using **EAGLE** and **Solidworks**
- Implemented **microcontroller**-based **PID control system** for fluidic pressure control in **Python**

PUBLICATIONS

[1] Mceowen, S., Calderone, D. J., Tiwary, A., **Zhou, J. S.**, Kim, T., Elango, P., Acikmese, B. Auto-Tuned Primal-Dual Successive Convexification for Hypersonic Reentry Guidance. In *AIAA SCITECH 2025 Forum* - **Best AFM Paper, Best Graduate Paper**

COMPETITIONS

Citadel Global Data Open - 3rd Place 2021

Python • Regression Analysis • Economic Simulation • Data Analysis • Data Scraping and Visualisation

Citadel West Coast Data Open - 1st Place 2021

Python • Regression Analysis • Clustering • Data Analysis • Data Scraping and Visualisation

SKILLS

Programming	Python, C++, C, Julia, MATLAB, Git, Linux
Libraries	CVXPY, Scikit, OpenCV, Tensorflow, Keras, PyTorch, Plotly
Embedded	STM32 MCUs, STLink, GDB, iCE40 FPGA (Verilog), NuttX RTOS
Software	PX4, MAVLink, ROS, OpenAI Gym, AirSim, Solidworks, OpenVSP, Vector CAN tools
Electromechanical	PCB Design (KiCAD, EAGLE), Soldering (SMT/THT), Machining (Lathe/Mill/CNC), Rapid Prototyping