Devin Zhang

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Education

The Cooper Union for the Advancement of Science and Art, New York, NY   Aug 2022 – May 2026

Bachelor of Engineering, Major in Mechanical Engineering, Minor in Computer Science

- **GPA:** 3.53 | Half-Tuition Merit Scholarship
- Relevant Courses: Feedback & Control Systems, Drone Control, Rocket Science, Bayesian Machine Learning, Systems Engineering, Remote Sensing, Mechatronics, Data-Driven Problem Solving

Experience

Viasat – Carlsbad, CA

Space Systems Engineer - Casual (Promoted from Intern)   *May 2025 - Present*

- Led ARGUS camera system development for NASA's CSP, conducting satellite mission analysis using Ansys STK and Python to determine optimal antenna deployment windows and attitude quaternions based on Sun/Earth positions, target lighting, and image quality metrics.
- Spearheaded OpenC3 COSMOS interface development for satellite payload (Hyperscape100 Spectral Imager, ARGUS Camera) by architecting the entire command and telemetry pipeline, implementing universal CRC protocol systems with automated validation frameworks, and creating comprehensive procedures using self-developed high-level packaged command libraries.
- Performed end-to-end testing in ISO 8 cleanroom, validating deployment windows using COSMOS procedures with Engineering Model camera and Space Flight Model antenna through hardware-in-the-loop testing.

Ursa Space Systems – Remote

AI/ML Fellow (Breakthrough Tech Program @ Cornell Tech)   *Aug 2025 - Present*

- Developed computer vision models for classifying vessels vs. icebergs in synthetic aperture radar imagery, leveraging open-source pre-trained models to reduce costs for intelligence applications.
- Analyzed embedding spaces from multiple pre-trained models on satellite imagery datasets, establishing baseline classification performance and exploring transfer learning approaches to minimize labeling costs for maritime intelligence tasks.
- Developed and deployed machine learning pipelines using Python, scikit-learn, pandas, NumPy, and Jupyter Notebook for supervised learning, model training, and performance evaluation.

Cooper Satellite Launch Initiative - Cooper Union – New York, NY

Research Member   *Sept 2024 - Present*

- Designed attitude determination system integrating photodiodes, magnetometers, and IMUs via I2C interface, implementing TRIAD and Multiplicative Extended Kalman Filter (MEKF) algorithms for spacecraft orientation estimation.
- Developing a low-cost magnetorquer-only three-axis attitude control system for post-launch detumbling and pointing, optimizing magnetorquer design, building physical prototypes, and testing infrastructure including Helmholtz cages for hardware validation.
- Contributed to the research and design of an innovative e-ink thermal control system concept for small satellites, enabling adaptive albedo modification for temperature regulation.

Dynamics and Control Lab - Cooper Union – New York, NY

Project Lead   *Sept 2024 – Jan 2025*

- Developed a comprehensive UAV simulation environment in Python integrating rigid-body dynamics, aerodynamic models, feedback control, and sensor-based state estimation for autonomous navigation and obstacle avoidance.
- Programmed 3D orbital mechanics simulator in Python with real-time orbital element adjustments, implementing coordinated quadcopter swarm flight using Lighthouse stations where quadcopters followed the simulation trajectories.

ConEdison – New York, NY

Engineering Co-op   *Mar 2024 – Sept 2024*

- Oversaw complete lifecycle of field-returned electrical transformers including reconditioning, testing, and redeployment while ensuring safety compliance and operational efficiency.
- Analyzed new and field-returned transformers to identify fault patterns through oil composition, corrosion, temperature, and pressure data analysis.
- Developed SQL and Python libraries to automate data workflows including analysis, data cleaning, and database management.

Skills

Python, C, C++, Ansys STK, OpenC3, Java, SQL, HTML, ROS, ROS2, Linux, Git, Gazebo, RViz, SolidWorks, Onshape, MATLAB, Simulink, AutoCAD, Autodesk Fusion 360, Microsoft Office, Oracle, PowerBI, Tableau, Machining, GD&T