SETH COHEN

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EDUCATION

The University of Texas at Austin | B.S. Mechanical Engineering | GPA: 3.93/4.00 May 2027

Relevant coursework: Game-Theoretic Modeling of Multi-Agent Systems (graduate, in progress); Dynamic Systems & Controls (in progress); Mechatronics; Machine Elements; Heat Transfer.

University of Edinburgh | Study Abroad, Theoretical and Mathematical Physics Fall 2025

ENGINEERING AND RESEARCH EXPERIENCE

CesiumAstro | Mechanical Engineering Intern May - Aug 2026

- Built a handheld lunar-navigation prototype in two weeks, owning requirements, component selection, enclosure CAD and fabrication, wiring, ESP32 C++ interface firmware, and functional testing.
- Resolved encoder/display timing errors and iterated glove-operable controls; validated usability in a pressurized astronaut glovebox at NASA Johnson Space Center.
- Performed ANSYS modal, random-vibration, and shock analyses of spacecraft electronics; used Thermal Desktop to assess lunar thermal trades involving coatings, insulation, radiators, and conductive heat paths.

Millennium Space Systems (Boeing) | Mechanical Engineering Intern Jun - Aug 2025

- Designed spacecraft jitter-test fixtures for a Kistler table; used SolidWorks FEA to evaluate mode shapes and natural frequencies against a two-octave separation requirement.
- Created mechanical ground-support drawings and tolerance stack-ups in SolidWorks/Teamcenter; performed Instron insert/coupon testing and MATLAB analysis for adhesive trade studies.

Texas Nuclear & Applied Robotics Lab | Undergraduate Research Assistant Nov 2024 - May 2025

- Integrated TurtleBots, OAK stereo cameras, and DJI 360 LiDAR; modified existing Python/ROS 2 perception code using YOLO to associate objects across camera fields of view.

Technion Philadelphia Flight Control Lab | Research Intern May - Aug 2024

- Built a two-axis tracking turret for multi-agent control experiments under Prof. Daniel Zelazo; integrated OpenCV/AprilTag sensing and Arduino servos, and experimentally tuned PID target tracking.
- Developed camera-based range estimation with approximately 1-2 cm error up to 3 m, verified against tape measurements across target orientations.

SELECTED ENGINEERING PROJECTS

Lunar Navigation Engineering Model | UT Radionavigation Lab Capstone Fall 2026 - Present

- Advance the lunar-navigation prototype in a CesiumAstro-sponsored capstone in Prof. Todd Humphreys's lab; define requirements and plan thermal, structural, and environmental verification.

SO-101 Manipulation and Demonstration Selection | ASE 389 Fall 2026 - Present

- Assembled and calibrated leader-follower arms; configured LeRobot teleoperation and front/wrist cameras, and collected 50 usable manipulation demonstration episodes.
- Investigate inverse optimal control and informative demonstration selection for pen-to-cup manipulation; plan evaluation of demonstration efficiency and generalization to changed pen and cup positions.

Harmonic-Drive Equatorial Mount | Independent Project Ongoing

- Designed a telescope-mount prototype with a 100:1 harmonic gearbox and 3:1 belt stage (300:1 overall); developed the housing, belt-tensioning arrangement, and telescope-load calculations.

TECHNICAL SKILLS

Software: Python, C++, Julia, MATLAB, ROS 2, Linux, OpenCV, LeRobot, Arduino/ESP32.

Mechanical: SolidWorks, Onshape, GD&T, DFM/DFA, Teamcenter, FDM 3D printing, wiring and soldering.

Analysis and test: ANSYS Mechanical, SolidWorks FEA, Thermal Desktop, Instron.

LEADERSHIP AND AWARDS

FIRST Robotics Team 1836: Team captain for two years; led motor and gearbox design workshops.

Onshape Education Speed Modeling Challenge: First place, flexible coupling assembly (2021).