

BOONE TOGUCHI

Chester Springs, Pennsylvania 19425 | btoguchi7@gmail.com | linkedin.com/in/boonetoguchi

PROFILE

- Aerospace engineering student pursuing **aircraft design, systems engineering, and quality control**, with project experience spanning **structural design** (Purdue Space Program) and **CAD/PLM** workflows (Siemens NX, Teamcenter). Graduating a year ahead of schedule as an **Honors College** student with a **4.00 GPA**.

EDUCATION

Purdue University, School of Aero & Astro Engineering **West Lafayette, IN**
Aero & Astro Engineering, 4.00/4.00 **May 2028**

- Dean's List and Semester Honors
- John Martinson Honors College

ACTIVITIES & PROJECTS

Purdue Space Program **West Lafayette, IN**
High Altitude Structures Sub Team and Simulations Sub Team **Jan 2026 – Present**

- Engineering structural design and analysis of high-power rocket airframe targeting a **Purdue altitude record of 46,000 ft** (Spring 2027 launch), using **CAD** software **Onshape** for collaborative development.
- Developing new methods of measuring structural stability using **Finite Element Analysis** on **Ansys** software.
- Coordinating cross-functionally with propulsion, mechanics, and avionics sub teams to integrate structural design constraints into the overall vehicle design.

AAE 251: Introduction to Aerospace Design **West Lafayette, IN**
Aircraft Vehicle Design Team **Sep 2026 – Present**

- Collaborating on a semester-long team design project to conceptualize an **aircraft vehicle system**, applying trade studies, needs finding and **technical requirements**, and range/endurance calculations to guide decisions.
- Conducting design concept generation, selection, and **optimization** across **aerodynamics**, propulsion, **structures**, and **stability/control**, applying drag and thrust calculations.

ENGR 162: Honors Physical Science of Engineering Design II **West Lafayette, IN**
GEARS Autonomous Maze-Navigating Robot **Jan 2026 – May 2026**

- Spearheaded software development** for an autonomous maze-navigating robot, completing the maze in under 12 minutes, using a **Raspberry Pi**, BuildHAT motors, **IMU**, **IR sensor**, and **Grove ultrasonic sensors**.
- Designed a **multithreaded Python** control architecture to coordinate **real-time sensor input** and motor control.
- Contributed to the physical design and assembly of the robot alongside a team of engineering students.

EXPERIENCE

Engineering Honors Program **West Lafayette, IN**
ENGR 161 Undergraduate TA **Aug 2026 – Present**

- Facilitating class time sessions and holding office hours for **~380 students** to support them through honors-level foundational physics and engineering design coursework.
- Providing individualized grading and feedback on assignments, exams, and engineering projects for an assigned **group of 4 students**, with additional support sessions offered as needed to reinforce learning objectives.

SKILLS & RELEVANT COURSEWORK

Technical Skills

- Proficient in MATLAB, Python, C, Siemens NX, Siemens Teamcenter, Excel
- Certification in AI Fluency: Framework & Foundations, Anthropic
- EBEC Certification in Programming in Python, Purdue College of Engineering

Relevant Coursework

- Honors Aeromechanics I (**AAE 203H**), Statistical Methods (**STAT 511**), Signal Analysis (**AAE 301**), Fluid Mechanics (**AAE 333**), Linear Algebra (**MA 265**), Partial Differential Equations for Engineering (**MA 303**), Intro to Aerospace Design (**AAE 251**), Graphic Communications & Spatial Analysis (**MFET 163**), C Programming for Engineers (**CS 159**), Thermodynamics I (**ME 200**)