ALEX BRZOSTEK

Mechanical Engineering Student | HVAC | Formula SAE
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SUMMARY

Mechanical Engineering student at the University of Connecticut with hands-on experience in HVAC installation and maintenance, Formula SAE vehicle development, and independent automotive projects. Applies CAD and computational fluid dynamics to design and troubleshooting tasks. Experienced in technical documentation, safe tool use, and collaborative engineering work.

AREAS OF EXPERTISE

- **Design and Analysis:** SolidWorks | Onshape | ANSYS Workbench | FEA | CFD | CAD Layouts
- **Mechanical Systems:** Fluid Dynamics | Thermodynamics | Intake and Exhaust Systems | HVAC
- **Manufacturing and Maintenance:** Machined Components (ex. Differential Shims) | Hand and Power Tools
- **Computing and Documentation:** MATLAB | Python | Microsoft Office | Technical Documentation
- **Teamwork and Languages:** Team Collaboration | Organization and Time Management | English | Polish

EDUCATION

Bachelor of Science in Mechanical Engineering | University of Connecticut **May 2028 expected**

- Engineering Learning Community
- UConn Formula SAE, 2025–Present | UConn Car Club, 2025–Present

ENGINEERING AND WORK EXPERIENCE

Formula SAE Team Member – University of Connecticut **Sept 2025 – Present**

- Create detailed CAD layouts and support vehicle engineering projects with the UConn Formula SAE team.
- Model airflow through intake and exhaust pipes using CFD to support vehicle development.
- Create and test machined components for vehicle fitment; collaborate with teammates to meet project deadlines.

HVAC Technician Assistant – Allmax HVAC LLC **June 2021 – Aug 2026**

- Assisted technicians with installation, maintenance, and repair of residential and some commercial HVAC systems.
- Supported air-conditioning, natural gas, oil, and propane boiler and water-heater installations and repairs.
- Cleaned evaporator coils, condenser coils, and filters; installed ductwork and insulation around pipes and ducts.
- Used drills, saws, and hand tools safely

PROJECTS

E85 Fuel Conversion Research – UConn Formula SAE **Aug 2026 – Present**

- Co-lead research with another team member into converting from pump gasoline to E85 fuel.
- Investigate conversion requirements with the goal of establishing an E85 setup on the team's in-house dyno.

Fuel Rail Retention – UConn Formula SAE **Sept 2026 – Present**

- Develop a fuel rail retention approach to maintain secure seating and alignment of the rail and fuel injectors.

Exhaust Routing and J-Pipe Redesign – UConn Formula SAE **Sept 2026 – Oct 2026**

- Redesign exhaust routing to move the outlet rearward and support a symmetrical sidepod arrangement.
- Remodel the J-pipe connecting the headers and muffler for planned titanium fabrication.

2023 Acura TLX Type S – Independent Automotive Project

- Installed a PRL high-flow air filter, silicone intake pipe, intercooler, and aluminum charge pipes, working within tight front-end packaging constraints.
- Replaced exhaust components, addressed seized fasteners and oxygen-sensor fitment, and fabricated gaskets.
- Performed oil and filter changes, brake-fluid servicing, and coolant inspection; investigated warning lights, reduced-power behavior, and vibration.