

# Tahsin Zaman

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## Education

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### University of California, San Diego

September 2023 - June 2027

*Bachelor's of Science in Mechanical Engineering - GPA 3.0*

- Provost Honors Recipient | Spring 2025 | GPA: 3.6

Coursework: Solid Mechanics, Mechanics of Materials, Statics & Dynamics, Thermodynamics & Heat Transfer, Fluid Mechanics, Materials Science, Signals & Systems, Linear Circuits

## Skills

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**CAD:** SolidWorks, Onshape, AutoCAD, AutoDesk REVIT, Fusion 360, Autodesk Inventor

**Analysis:** SolidWorks, ANSYS, Microsoft Office Suite (Word, Excel, Powerpoint), Google Suite (Docs, Drive, Sheets, Forms)

**Programming Languages:** MATLAB, Java, Python, C++

## Experience

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### Mechanical/Airframe Engineer @ TritonUAS – Guided Payload Team

October 2025 – Present

- Designing and iterating mechanical payload structures on an unmanned VTOL drone to improve airdrop accuracy by integrating 2 servo-actuated parachute control lines within strict weight and packaging constraints
- Collaborating with a 5+ person electrical subteam to mechanically integrate servos, electromagnets (~45 N holding force), and an ESP32-based controller into the payload assembly, ensuring reliable actuation and clean release
- Optimizing CAD assemblies for tool-less assembly and ease of manufacturing, reducing part count and enabling for consistent payload deployment across test configurations
- Conducted early ground and drop testing (3 configurations), identifying deployment instability modes and proposing mechanical changes to help improve consistency in release
- Created written documentation describing mechanical mounting interfaces, servo routing layouts, and observed deployment behavior to ensure repeatable assembly and testing
- Presented mechanical design updates and test findings during bi-weekly, cross-subteam engineering reviews, incorporating feedback from the software and electrical subteams

### Dispatch Officer @ Valley Presbyterian Hospital

Aug 2021 – Mar 2022

- Supported COVID-19 relief efforts by handling requests, deliveries, and discharges for various departments
- Improved patient and visitor experience through wayfinding assistance, wheelchair support, and delivery services
- Safely transported lab samples, medicine, supplies, and equipment

## Projects

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### Pokeball Launcher

- Designed and modeled a multi-component, servo-actuated launcher in SolidWorks, producing 10+ ANSI/ASME Y14.5-compliant engineering drawings with GD&T and  $\pm 0.1$  in. tolerances to ensure repeatable assembly
- Developed a Bill of Materials (BOM) and considered part costs, availability, and feasibility of fabrication and assembly
- Fabricated, assembled, and tested the automated system across 5 design iterations, implementing test feedback each time to improve performance
- Documented observations in testing and identified any failure points such as misalignment and interference
- Communicated design rationale and test results through detailed technical reports and formal design reviews

### Wind Turbine

- Designed and fabricated a small-scale wind turbine consisting of a 13-in truss tower and 3-blade rotor to balance structural stiffness, weight, and ensure aerodynamic efficiency
- Iterated blade geometry and materials through conducting parameter studies, increasing electrical output of the turbine from 0.15 V to 0.295 V under wind testing
- Designed and tested a balsa-wood tower reinforced with shear walls and V-bracing, achieving resistance to 15 lbf transverse load at a total tower weight of 0.16 lbf