

Adam Bertrand

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EDUCATION

University of Michigan

Bachelor of Science in Aerospace Engineering

GPA: 3.96/4.00

Honors: Dean's List (2020-2022), James B. Angell Scholar, 2022 Michigan Aerospace Engineering Centennial Scholarship Recipient

Coursework: Gas Dynamics, Aerospace Systems, Dynamics & Vibrations, Engineering Materials, Aerodynamics,

Aerospace Structures, Spacecraft Dynamics, Space Policy & Mgmt, Model-Based Systems Engineering (MBSE)

Ann Arbor, MI

April 2024

PROJECT EXPERIENCE

Michigan Sustainability Applications for Aerospace Vehicle Engineering (M-SAAVE)

Systems and Aerodynamics Engineer

Ann Arbor, MI

Aug 2022 - Present

- Applying MBSE methods to develop drone for humanitarian aid missions in Sub-Saharan Africa
- Performing requirements derivation and cascading, defining interfaces, and defining system architectures for aerodynamics team
- Learning how to analyze aircraft stability and performance with the Athena Vortex Lattice (AVL) program

Hovercraft Design, Build, Fly Project

Class Project

Ann Arbor, MI

Jan 2022 - Apr 2022

- Worked with team to design and build hovercraft that set course records in speed, maneuvering, and payload trials
- Designed cardboard hovercraft shell in CATIA v5 that maximized lift capabilities, speed, and maneuverability; used FEA tools within CATIA and fluid simulation in StarCCM+ to verify feasibility and compare performance of designs
- Assisted in design of hovercraft skirt that enabled the craft to be the only one in competition capable of traversing rough terrain (rubber rugs) without getting caught
- Communicated project results via series of presentations and design reviews throughout timeline of the project

Michigan Aeronautical Science Association (MASA) Rocketry Team

Propulsion Engineer

Ann Arbor, MI

Sept 2021 - Aug 2022

- Led design of plugs for hydrostatic testing both previous and novel combustion chamber designs; modeled and drafted in Siemens NX, performed structural simulations in Ansys
- Performed O-ring sizing calculations, sourced materials and plumbing equipment for hydrostatic testing
- Created P&ID for hydrostatic testing of combustion chamber and participated in testing campaign

Bioastronautics and Life Support Systems (BLiSS) Project Team

Software Engineer

Ann Arbor, MI

Sept 2020 - Apr 2021

- As part of 2021 M2M X-Hab Academic Innovation Challenge, designed a proof-of-concept Voice User Interface for use on NASA's Lunar Gateway project under the guidance of mentors from NASA Stennis Space Center
- Assisted coding team in research into open-source tools that could be used to construct voice control system; led research into text-to-speech (TTS) component; integrated Coqui, a TTS generator, into final Flask application

Arduino Microcontroller for Hydroponic Farms

Class Project

Ann Arbor, MI

Jan 2021 - Apr 2021

- Collaborated with team to design a microcontroller system using sensors and servo motor actuators to automatically monitor and adjust pH levels for a hydroponic farm so that the farmer does not have to
- Wrote Arduino code (C++) that periodically recorded pH inputs from sensors, compared inputs to desired pH of system, determined whether pH up or pH down should be added, then signaled correct servo motor to dispense

WORK EXPERIENCE

Amazon Books

Retail Associate

Dedham, MA

May 2021- Aug 2021

- Delivered customer service throughout the store to ensure customers' needs were taken care of in a timely manner
- Received, stocked, and replenished product to ensure merchandise was readily available for customers

SKILLS

Programming: C++, MATLAB, Java, Python

CAD/Sim: CATIA v5, Siemens NX, SolidWorks, StarCCM+, Ansys

ACTIVITIES

Sigma Gamma Tau (Aerospace Engineering Honor Society), *Member*

Jan 2022 - Present

Tau Beta Pi (National Engineering Honor Society), *Member*

Sept 2021 - Present

AIAA Student Branch @ University of Michigan, *Member*

Sept 2021 - Present