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Joseph Benjamin

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Education

Cornell University Ithaca NY – *Mechanical Engineering BS* Class of 2020

GPA: 3.2 | Major GPA: 3.5 | Dean's List Sp '19, Fa '19, Sp '20

Work Experience

Space Exploration Technologies Hawthorne, CA – *Assoc. Mechanical Eng.* Summer 2020

Rev Ithaca Startup Works Ithaca, NY – *Hardware Accelerator Instructor* May – August 2019

- Collaborated with hardware startup teams to develop consumer products through the process of customer discovery, proof of concept, and prototyping.

Emerson Teaching Lab Cornell University – *Assistant Shop Supervisor* June 2018 - Present

- Emerson Teaching Lab is an on-campus machine shop open to student machinists.
- Produced CAM programs, operated CNC machines, maintained machines, and taught new machinists safe introductory manual milling and turning operations.

MAE Instructional Labs Cornell University – *Demonstration Designer* June 2018 – August 2018

- Worked with professors to design in-class demonstrations for use in robotics, fluid mechanics, and heat transfer classes.
- Performed FEA to design a 24' frame to hold a turbine/inlet pipe for convection experiment.

Projects and Campus Leadership

Cornell Racing (Formula SAE) – *Team Lead '20, Brakes '19, Cooling '18* Feb 2017 - Present

- Led Cornell Racing to drive the first electric racecar in team history.
- Designed compact PCB to ensure safe working conditions and limit inrush currents in 420V tractive system.
- Designed braking and engine cooling systems, optimizing around weight/reliability.
- Performed dyno tuning of combustion engine for efficiency and power through MAF tuning.
- Coordinated on and off-car tests to aid data-driven design for aerodynamics, suspension, engine cooling, brakes, and overall car balance.
- Organized manufacturing process for over 120 unique machined parts, ensuring a rapid and accurate manufacturing process – improving efficiency during manufacturing.
- Specialized in design of composite and metal parts for manufacturability.

MAE 2250: Mechanical Synthesis – *Teaching Assistant* Jan – May 2019

- Introduced class of 32 students to hands-on machining, rapid prototyping, and CAD.

Skills

Design: Abaqus, Altium Designer, ANSA/META, ANSYS Workbench, Autodesk Inventor, Fusion 360, Siemens NX, Solidworks, Vault

Technical: C, LaTeX, MATLAB, Microsoft Project, MoTec i2Pro, Python, Simulink

Manufacturing: 3D Printing, CNC & Manual Milling/Turning, Composites Manufacturing, Soldering, TIG Welding