Bryson Pierce

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EDUCATION

University of California, San Diego — Graduated Jun 2023
Bachelor of Science in Mechanical Engineering with a specialization in Control and Robotics
GPA: 3.97/4.0, *magna cum laude*

WORK EXPERIENCE

CRLA Certified Tutor, UCSD Teaching & Learning Commons — Mar 2021 – Jun 2023

- Exhibited excellent time management, multitasking, and communication skills during tightly scheduled private tutoring sessions, tailoring to the needs of up to three students across three different courses at a time.
- Calculus and higher math courses (MATH 10A, 10B, 10C, 20A, 20B, 20C, 20D, 20E, 18)
    - Provided expert knowledge and assistance across the entire mechanical engineering math curriculum, including vector spaces, parametric functions/surfaces, differential equations, linear algebra, and multivariable integrals.
- Physics courses (PHYS 2A, 2B, 2C, 4A, 4B, 4C)
    - Guided peers and fellow tutors through especially challenging physics problems concerning mechanical systems, fluids, electricity and magnetism, circuits, and thermodynamics.
- Programming for engineering applications (MAE 8)
    - Conveyed advanced understanding of a wide range of engineering programming topics, including matrix operations, computational methods, logical workflows, graphical presentation, and code documentation.

PROJECTS

Illumina Fluid Cartridge Design, *Illumina* — Feb 2023 – Jun 2023

- Designed and CFD simulated prototypes using SolidWorks and guided the manufacturing process, which utilized FDM/SLA 3D printing, CNC milling/turning with aluminum and HDPE, and power tooling.
- Utilized Fusion360 to design and manufacture the test fixture, custom LabView software to design and conduct testing procedures, and MATLAB to quantify the performance of prototypes through image processing and statistical analysis.
- Initiated, proposed, designed, and tested the team's most successful design, resulting in a 290% increase in efficiency.
- Demonstrated time, project, and fiscal management skills by creating comprehensive Gantt charts, achieving deliverable deadlines, communicating with industry suppliers, and overseeing a $5,000 budget as the team's fiscal manager.

RPL Rocket Design, *UCSD Rocket Propulsion Laboratory* — Oct 2022 – May 2023

- Sourced off-the-shelf rocket components that met the project's detailed requirements, factoring rocket dimensions, apogee goals, design constraints, component compatibility, and total budget.
- Employed Fusion360 and SolidWorks to design fins, fin can, and nose cone, and subsequently 3D printed with Cura.
- Used OpenRocket to simulate flightpath and SolidWorks to verify stress conditions of motor, fin, and nose cone designs.

Team Robotics Competition, *UCSD Jacobs School of Engineering* — Oct 2021 – Dec 2021

- Spearheaded the end-to-end development of the intake mechanism, leveraging Fusion360, AutoCAD, and MATLAB in the design process and using 3D printers, power mills, laser cutters, hand tools, band saws, and other industrial machinery to transform SLA, aluminum, and acrylic in the manufacturing process.
- Provided technical feedback over a series of design reviews, allowing for continual iteration of mechanical components.
- Directed the team to a first-place victory, maintaining a record of zero loses in a competition of 41 total teams.

TECHNICAL SKILLS

- Solidworks, Fusion360, AutoCAD, FEA, CFD
- MATLAB, Python, C++, C#, LaTeX, Unity
- 3D printing, Machining, CNC, GD&T, DFM
- Arduino/Microcontrollers, Embedded systems

OTHER INTERESTS

- Astrophysics, Astronomy
- Weightlifting, Nutrition
- 3D printing, PC building
- Programming, Video game design