Christopher Ng, E.I.T.
Portland, OR 97239 | 503-853-0823 | cadre200@gmail.com

EDUCATION

California Polytechnic State University **San Luis Obispo, CA**
Bachelor of Science in Mechatronics Mechanical Engineering September 2020 – June 2024

- **GPA:** 3.88
- **Relevant Coursework:** Mechatronics Design, Applied Mechanical Controls, Design for Strength and Stiffness Modeling, Computational and Advanced Heat Transfer for Conduction, Convection, and Radiation

WORK EXPERIENCE

Ascentec Engineering **Tualatin, OR**
Engineering/Machinist Intern July 2022 – September 2022

- Read and ensured compliance of fabricated parts to technical drawings and GD&T specifications
- Inspected high tolerance parts using optical comparators and other high resolution measuring instruments
- Independently operated and maintained CNC machines for steel and aluminum part fabrication

RELEVANT EXPERIENCE

Senior Design Project **Solar Turbines**
Senior Project Team Member September 2023 – June 2024

- Determined the sponsor's needs and product application to conduct research on relevant existing gas turbine engine and mechanical sealing products, technologies, and methods
- Generated multiphase reports and produced technical presentations to communicate design concepts and processes to project management
- Constructed and presented numerical results verified by analytical analysis from computational thermal and structural stress analysis FEA studies to justify the chosen mechanical sealing design
- Utilized CAD SolidWorks modeling to develop a to-scale design for the gas turbine seal as well as a scaled-down functional prototype
- Developed and conducted testing plans and manufacturing steps for a functional prototype to validate the design's performance and evaluate the design and components
- Conversed with vendors to order various coating metal E-seals, metal stock material, and other components and required equipment for manufacturing, assembly, and testing of the prototype
- Evaluated and manipulated raw data to produce comprehensive results and explain errors

Automated Heliostat **Mechatronics 507 Project**
Mechatronics Team Lead March 2024 – June 2024

- Designed an electro-mechanical system from scratch to integrate STM32CubeIDE supported C programs to automate sun detection and mirror repositioning
- Managed the team's scheduling and tracking deadlines along with cloud organization of documentation
- Utilized Fusion 360 to develop circuit board layouts with electronic schematics
- Selected and ordered parts and components for embedded hardware electronics for circuit board design
- Programmed embedded software for various I2C, ADC, and UART communication between an STM32 microcontroller, peripheral devices, and a computer
- Developed and debugged code in C for DC motor, servo, encoder, photoresistor, and IMU operation and implemented a PID controller for closed-loop control
- Utilized SolidWorks 3D CAD modeling and drafting to produce 3D-printed mechanical parts

Ride Engineering Competition **Cal Poly Amusement Park Engineers and Designers**
Mechanical and Controls Staff Member January 2022 – April 2023

- Used SolidWorks CAD modeling and structural FEA to develop a rollercoaster track to ASTM F2291 standards
- Collaborated with with multidisciplinary teams and management to come up with solutions to resolve manufacturing, implementation, and troubleshooting problems
- Managed basic PLC and Arduino microcontroller logic for a servo actuated control system
- Designed a mechanical braking system that functioned as an E-stop when power is lost

CERTIFICATIONS AND SKILLS

Engineer in Training (E.I.T.) Certification September 2023
Issued by the Oregon State Board of Professional Engineers, License #103955EI

Technical Skills: SolidWorks CAD Modeling, Drafting, Machining, 3D-Printing, FEA Modeling, Computational Fluid and Heat Transfer Simulation Modeling, Ansys Fluent CFD, MATLAB, Microcontroller Programming, PCB Design, Autodesk Fusion 360, Python, C, EES, Microsoft Office, Data Gathering and Analysis