nhoong.github.io
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NATHAN J. HOONG

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PROFESSIONAL EXPERIENCE

Robotics Deployment Engineer, Contract **Amazon Robotics** **July – Nov 2020**

- Decreased production errors by 20% and a launched site ahead of schedule by 1.5 months by diligently managing multiple teams of third-party assemblers for the installation of stations and drives.
- Established Allen Bradley software for robotic safety systems and set up Cognex vision for station recognition.
- Analyzed, debugged, & ensured that all robotic environments met Amazon Robotics' GD&T requirements.
- Originated solution for robotic drive awakening procedure that cut procedure time from 5 to 2 hours per floor.

Hardware/Systems Lead, Capstone **Glaukos** **Sept – May 2020**

- Enhanced fatigue testing process for new product development by creating a periorbital simulator test fixture with strong repeatability reducing the time needed to test the product.
- Engineered a contact force system that can be moved into position, apply, and measure force using C++.
- Developed a system to apply a force onto the periorbital region and a servo to simulate hand rubbing motion.
- Built a system that collects and records data from the load cell using an ADC, Arduino, and DAQ.
- Validated material and design choice structural stability with finite element analysis simulation on test fixture.

R&D Controls Engineer, Intern **Philips Respironics** **Jun – Aug 2019**

- Reduced test process from 4 hr to 30 min by automating test procedures through a developed program.
- Facilitated multiple design reviews to solicit feedback and offer insight into design to meet requirements.
- Collaborated with test engineers to gage usability requirements ensuring compatibility of test fixture.
- Developed code for automated actuator controller using LabVIEW graphical programming environment.

Manufacturing Engineer, Intern **Senior Aerospace Jet Products** **May – Aug 2018**

- Integrated tools into organized ERP program that manages, tracks, and allows for accountability of tools.
- Exceeded project goals by completing one-year project plan in tooling management program in three-months.
- Optimized manufacturing workflow by implementing tool storage identification and serialization system.
- Modified past tool designs using Solidworks and PDM to aid in the production of engine mounting solutions.

EDUCATION

San Diego, CA **University of San Diego** **Sept 2016 – May 2020**

- BS/BA in Mechanical Engineering, Major GPA: 3.28 - Deans List, May 2020.
- Undergraduate Coursework: Computational Fluid Dynamics (CFD), Finite Element Analysis (FEA), Introduction to Robotics, Human Factors Engineering, Machine Shop Practices, Manufacturing Processes, Fluid Mechanics.
- Involvements: Theta Tau Professional Engineering Fraternity, American Society of Mechanical Engineers.
- Leadership: Glaukos Capstone, Hardware and Systems Lead; Theta Tau, Corresponding Secretary.

PROJECTS

- **Wobbler Engine** (2018). Awarded a 3rd finish with a minimum running psi of 1.3. Wrote detailed operation sheets, fabricated, and assembled all components for the wobbler engine.
- **Tension and Compression Model** (2018). Conceptualized learning aid that provides a physical representation of tension and compression in a truss system. Produced via 3D prints and implemented into Statics courses.
- **Emergency Response Vehicle** (2016). Designed chassis of vehicle on Solidworks and fabricated vehicle using low cost materials. Devised steering capabilities using Raspberry Pi to control power sent to each wheel. C++

LANGUAGES AND SKILLS

- Applications: ANSYS Fluent | AutoCAD | Agile | Git/Github | LabVIEW | MultiSim | Solidworks & PDM
- Programming Languages: C++ | Java | MATLAB