nhoong.github.io
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NATHAN J. HOONG

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PROFESSIONAL EXPERIENCE

Equipment Engineer **Illumina** **Jan 2022 - Present**

- Developing a laser-based distance measurement tool using IOT technology that records data to CSV.
- Designed custom PCB & programmed code for Arduino to capture & record accurate distance measurements.
- Devised data-driven DMAIC approach to multivariable problem with Mass Spectrometer performance.
- Led 12-person team to perform 8D method to overhaul of DNA synthesizer to find & address production faults.

Systems Integration Engineer **Hewlett Packard Inc** **March 2021 – Dec 2021**

- Created ink delivery system providing stable flow and accurate measurements for ink and pen development.
- Achieved 50% reduction in startup time through improved thermal distribution and PID controller for test bed.
- Developed a Python script to analyze and visualize thermal data values from an infrared camera (IR).
- Revamped legacy tool improving flow rate for the ink delivery system test and hysteresis in tool components.

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

- Reduced Amazon Robotics site production errors by 20% and exceeded launch deadline expectations by 30%.
- Implemented, configured, and deployed Alley Bradley software for robotic safety systems and Cognex Vision.
- Validated & verified all robotic installations met requirements in a regulated and controlled environment.
- Originated automation solution for robotic drive awakening process and reduced process time by over 50%.

Hardware/Systems Lead, Capstone **Glaukos** **Sept 2019 – May 2020**

- Fabricated proof of concept for a periorbital simulator to enhance fatigue testing for product development.
- Formulated Design of Experiments (DoE) to ensure strong repeatability and efficiency of test fixture.
- Developed and automated data collection and testing processes from a load cell with an ADC, Arduino & DAQ.
- Validated stability of material and design choices with finite element analysis simulation on test fixture.

EDUCATION

Los Angeles, CA **University of California, Los Angeles** **Sept 2022 – Dec 2024**

- MS Systems Engineering – Concentration in Embedded Systems, GPA: 4.0

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

- BS/BA in Mechanical Engineering – Dean's List First Honors, 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.

PROJECTS

- **Spinal Surgery Tool** (2021). Designed interbody and inserter tool for posterior lumbar interbody fusion (PLIF) accommodating for insert-and-rotate procedure with mechanism design for cleaning and biocompatibility.
- **R&D Controls Engineer, Intern, Philips Respironics** (2019). Improved QA process time by 80% through creation of automated test fixture for ventilator control algorithms using National Instruments cDAQ and LabVIEW.
- **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.

LANGUAGES AND SKILLS

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