

Harris Chen

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EDUCATION:

University of Southern California

Bachelor of Science, Mechanical Engineering

Master of Science, Product Development Engineering

Expected Graduation: May 2022

GPA: 3.71

SKILLS:

Machine Shop – laser cutting, water jetting, 3D printing, CNC (computer operated and manual), bandsaw, and lathe.

Design – Solidworks (Certified Solidworks Professional), Siemens NX, Autodesk Inventor, AutoCAD, Pro-E (Creo 2.0), DFM, DFA, Design for Injection Molding, Design for die casting, design thinking, FEA, Tolerance stack up analysis, GD&T, and rapid prototyping

Programming Languages – MATLAB/Simulink, Wolfram-Mathematica, Python, Arduino, C++, and LabView

Languages: English (Native), Mandarin (Native)

WORK EXPERIENCE:

Western Digital Corporation

San Jose, CA, United States of America

Mechanical Design Engineering Intern

May 2021 - August 2021

- Designed a robust tool fixture in Solidworks for repeatable and consistent data acquisition in enterprise HDD drives
- Researched and produced CAM profiles to trace the desired path on enterprise HDD drives using motion study
- Created rapid 3D prototypes and detail designs in Solidworks for tool fixture and CAM follower mechanisms
- Initiated manufacturing remotely for the tool fixture through implementing design for manufacturing (DFM) and assembly (DFA), providing detailed 2D drawings and coordinating with the inhouse manufacturer
- Complied detailed documentation for the assembly process and next steps to ensure the success of the projects following the internship

Top Victory Electronics Technology

Taipei, Taiwan

Industrial Design Intern

Summer 2020

- Developed a patented product design, *Cloud*, to challenge the traditional form of a monitor, and presented to executives
- Presented 5 design proposals for 3 separate consumer electronic products composing of sketches, modeling in Pro-Engineering, and renderings in Cinema 4D
- Enhanced team discussion for an annual IF design competition by providing innovative product development ideas in a rapid ideation environment

SST Energy Corporation

Casper, WY, United States of America

Project Engineering Intern

June 2019 - August 2019

- Directed an R&D project, *Echoke*, on automating the choke system crucial for operating an oil rig safely
- Improved and maintained oil rig operations by designing a new skid and house for double-wall fuel tanks, a new blowout preventer cradle, and a skid with a stand supporting the new air hoist and trolley
- Cooperated with local manufacturers to ensure designs are manufactured on time and accurately by providing GD&T drawings and priority list based on oil rigs' requests
- Generated safety ratings for trolley beams and cradles holding blowout preventers through FEA simulations in Solidworks
- Debugged past inspections of 6000+ drill pipes in Excel to reassure the quality of inspection and produce an accurate lifespan
- Developed diagrams indicating structurally safe locations to lift masts for 3 oil drilling rigs

PROJECTS:

ArboBot – Senior Design Project

Spring 2021

- Generated detailed component designs enabling the robot's climbing functions and conducted a weight optimization by reducing 30% of its initial weight
- Performed 6+ FEA simulations in Solidworks to ensure the components withstand the swinging reactionary forces
- Selected appropriate rotating servo based on calculated torque requirements on ArboBot's translating motion
- Calculated the static and dynamic analysis of ArboBot's swinging motion
- Generated renderings and animation to highlight ArboBot's unique swinging motion in Cinema 4D

Headphone Hinge and Swivel Analysis – Design for Manufacturing and Assembly Project

Spring 2021

- Decreased cost of manufacturing injection molding and cold chamber die-casting by 10% through detailed cost breakdown and design for manufacturing (DFM)
- Reduced assembly time and cost by 15% through breakdown of assembly process and design for assembly (DFA)
- Redesigned hinge and swivel mechanisms in Solidworks appropriately for a high-volume consumer electronics production of 100,000 units
- Conducted detailed metal and plastic material selection for each component of the design and fabrication techniques selection appropriate for the new production volume