

# Bismarck Chiang, EIT

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US Citizen

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## SKILLS

**Analysis:** MATLAB, Minitab, Excel, ANSYS FEA, and Office Suite, with experience in Python, C++, Unity, Swift, SQL

**Manufacturing and Quality:** CREO, GD&T, AutoCAD, SolidWorks, PFMEA, DMAIC, RCCA, ISO 10012:2003

**Documentation:** PTC Windchill PDMlink, Manufacturing Execution System (MES), Google Drive, Microsoft Office 365

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## EDUCATION

### The California State University, Long Beach

*M.S. Mechanical Engineering w. Mechatronics Emphasis* | **GPA:** 3.67/4.00

Long Beach, CA

May 2023

**Affiliations:** Human Performance Robotics Laboratory (HPRL), Tau Beta Pi Honors Society

### The University of California, Irvine

*B.S. Mechanical Engineering w. Aerospace Minor* | **Major GPA:** 3.13/4.00

Irvine, CA

December 2019

**Awards:** UROP Fellowship 2018 – 2019, Dean's Honor List (Winter 2019, Fall 2019)

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## EXPERIENCE

### Raytheon Intelligence and Space

*Test Automation Engineering Intern*

El Segundo, CA

May 2022 – August 2022

- Reflected over 150 new changes to four UUT (Unit Under Test) using CREO and documented the changes in the drawings, formal documents, change notices, and 3D assembly files for immediate DoD aircraft program release
- Quoted two qualified suppliers to find a Commercially-off-the-Shelf (COTS) solution for thermal, stress, strain requirements, price, and shipment speed, tested said part for product integration compatibility verification
- Created a new part in the Windchill PDM system and updated all the drawing and assembly models
- Collaborated with electrical engineers in reviewing and recording new UUT changes for the wiring diagram
- Helped script and test a new AC/DC electrical test for the UUT using the ATE INTEPRO Powerstar testing software

### Sorenson Engineering

*Manufacturing and Quality Engineer Co-op*

Yucaipa, CA

March 2020 – June 2020

- Recovered ~\$50K worth of CNC machined products with tolerances of +/- 0.0005" using six sigma approaches
- Identified post-process inefficiencies in Quality Control Plans (QCP) and reduced machine downtime by 35 mins per tool change per milling machine using 99% mean confidence interval reports
- Analyzed test data using Statistical Quality Control tools (SQC) to justify the corrective actions in deviations and Engineering Change Request (ECR) in recovering ~\$26K in hooded and non-hooded gold- and nickel-plated parts

### MEGGITT, Waste to Energy Project

*Industrial Engineer Co-op*

Irvine, CA

September 2019 – December 2019

- Modeled the master algorithm that generates an economic analysis including power production, power cost, carbon credits, and the full payback time depending on all the 12 exchangeable system parts
  - Evaluated generators and flue gas filtration systems to perform 3 trade studies for compatibility, cost, and efficiency
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## PROJECTS

### Human Performance and Robotics Laboratory

*Graduate Researcher*

Long Beach, CA

December 2022 – Present

- Designed an iOS native iPhone application to mesh bluetooth IMU sensors and tools from the Unity game engine to record motion capture and export it via iPhone's core framework
- Created product requirements and metrics to test and collect data on the application
- Prototyped the app in Figma using solid UX / UI design and human psychology principles
- Analyzed system architecture using a down selection matrix to prove MVVM was the best fit for the requirements
- Collected feedback from 15 test users to improve the usability of the application

### Solar Airplane Capstone Project

*Design Engineer – (Fuselage Team) / Risk & Safety Manager*

Irvine, CA

November 2016 – December 2019

- Defined the project parameters for stability, aerodynamics, and structure with the 3 sub-teams and a Ph.D. student
- Designed and iterated the first 3 SolidWorks models of the fuselage and the final airplane assembly
- Implemented weekly internal design review sessions and design review logs to give to future project iterations

### Undergraduate Research & Opportunities Program (UROP)

*Undergraduate Research Fellow; Pre-Spinning Airplane Tires (Research Project)*

Irvine, CA

April 2018 – June 2019

- Researched the interactions of fluids and fin geometry to optimize the maximum torque given 3 physical constraints
- Found the velocity profiles of wheel models using an FEA to find the quickest decline in velocity
- Tested 4 final fin prototypes and developed a Buckingham Pi equation to relate the geometry to the RPMs found