CHARLES LIU

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EDUCATION

University of California, Berkeley **Expected: May 2021**

B.S. Mechanical Engineering with Industrial Engineering and Operations Research Minor

Skills: *SolidWorks, Fusion 360, MATLAB, Simulink, Python, AutoCAD, Adobe PS/Illustrator, Jira, Confluence, PTC Windchill/Arbortext, MS Office, 3D Printing, Laser Cutting, Circuit Design, Soldering, IoT Devices, Materials Testing*

Related Coursework: *Mechanical Behavior of Engineering Materials, Fluid Mechanics, Dynamic and Feedback Control Systems, Designing Information Devices and Systems, Nonlinear and Discrete Optimization, Thermodynamics, Solid Mechanics and Dynamics, Designing for the Human Body, Manufacturing and Tolerancing, Product Development*

WORK EXPERIENCE

The Boeing Company **Everett, WA**

Incoming Payloads Interior Design Engineering Intern *May 2020 – Aug. 2020*

Allegiant Air **Las Vegas, NV**

Aircraft Structures and Interiors Engineering Intern *June 2019 – Aug. 2019*

- Drafted technical documentation on converting an A320 from 186 to 180 PAX by removing/re-pitching seats for more legroom, repositioning overhead PSU's, requesting a new CAM system from Airbus and an FAA 8110-3
- Created component build specification detailing the conversion & P/N evolution for Emergency Slide/Raft Covers
- Directed maintenance on how to repair Space-Flex V2 Lavatory issues based on service bulletins from SAFRAN
- Navigated Airbus World for IPC, AMM, SRM, CMM and AutoCAD DWG's to help support repairs/alterations
- Substantiated repairs & modifications to comply with FAA FAR's and helped obtain a STC for a new EE LOPA

imagiCal Advertising Consultancy **Berkeley, CA**

Adobe, *Strategy Consultant* *Aug. 2018 – Dec. 2018*

- Conducted primary and secondary research through focus groups and surveys to formulate a three-pronged strategy for Adobe to increase their Creative Cloud reach on the UC Berkeley campus over the next three years
- Narrowed research on how Generation Z's habits compared to Berkeley students' and derived consumer segmentations/marketing guide with relevance to Adobe's perception and presented 40+ slides at the SF office

Wienerschnitzel, *Media Planning Committee* *Jan. 2019 – June 2019*

- Competed in National Student Advertising Competition by analyzing Wienerschnitzel's media presence through various KPI's and recommending a media flight plan within a $25 million budget on different media vehicles

AIAA Design Build Fly Team **Berkeley, CA**

Mechanical Engineer *Sept. 2018 – Dec. 2018*

- Collaborated in a team to design and build a RC plane that can complete a pre-determined set of tasks
- Utilized skills such as airfoil testing software, working with servo motors, and chamfering with razor blades

PROJECTS

Teeth Grinding Tracker ***Nov. 2019 – Dec. 2019***

- Brainstormed/3D modeled concepts that monitored teeth grinding (bruxism) forces on temporomandibular joint
- Narrowed ideas using Pugh Chart/criteria through interviews with industry client and built low fidelity prototype
- Iterated thermoplastic mouthguard designs with strain gauges to force sensitive resistors, performed tissue loading calculations and user testing, and programmed Arduino to register forces/return varying severity levels of grind

IMU Self-Balancing Robot Car ***Apr. 2019 – May 2019***

- Assembled robot using ESP32 microcontroller, motor encoders, Inertial Measurement Unit BNO055 Absolute Orientation Sensor, 7.2V NiMH batteries, and metal gear motors on a fiberglass chassis mounting plate
- Fed gyroscope readings from IMU to MicroPython drivers, which calculated Euler Pitch angle and detected orientation of robot, triggering PID controllers to set accurate duty cycle or speed to both motors to balance

Wind Turbine Tower ***Oct. 2018 – Dec. 2018***

- Designed 3D CAD models of turbine rotor blades, tower frame, and generator housing in SolidWorks
- Ran Finite Element Analysis simulations to determine weak areas of pressure distribution under different tensions
- Fabricated prototypes with Type A 3D Printer for testing structural stiffness and efficiency in power output