

Richard Hsiao

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EDUCATION



Master of Science, Mechanical Engineering: Design Stanford University
(3.62/4.00)

Stanford, CA
Jun 2019



Bachelor of Science, Bioengineering University of California, San Diego
Magna Cum Laude (3.85/4.00)

La Jolla, CA
Jun 2016

INDUSTRY/ENGINEERING EXPERIENCE

UX and Design Engineer, Kukua Labs



San Francisco, CA
Mar 2019 - Present

Led efforts in designing a low cost version of the Kukua incubator intended on collecting batch data to validate egg hatch rates, saving the company 70% in costs per testing unit. Assisted with UI redesign.

- Rapidly prototyped several iterations of a low cost incubator containment unit and using material alternatives that can mimic the conditions of the Kukua incubator product.
- Analyzed user data and created wireframes sourced from user studies of families and farmers from Arusha using the Kukua incubator to suggest design decisions of the UI.
- Visualized user data to draw insights of incubator conditions and usage using Python and Excel

Project Manager, ME210 Mechatronics Competition

Stanford University

Stanford, CA
Feb 2019 - Mar 2019

Managed a team of 4 for designing and integrating mechanical, electrical, and software systems for a robot that would navigate a field with ultrasonic sensors and launch balls to hit beacons.

- Led the team by keeping track of team deadlines, providing integration support, and having a holistic overview of navigation, ball aiming, and ball launching modules.
- Headed navigational development by coding with C++ and Arduino IDE and designing the circuit and power supply system for the entire robot.
- Validated motor choice and circuit design through engineering calculations and parsing electronic datasheets.

Global Product Support Engineer, Front-End Products BU

Applied Materials

Santa Clara, CA
Sep 2017 - Nov 2018

Led efforts for implementing a collaborative framework for the technical publications team and designing business intelligence dashboards to improve project execution

- Iterated a O365 SharePoint site to develop a structured environment on the cloud for file management through user interviews and observations
- Led change management efforts to move away from work silos into more collaborative workspaces by hosting weekly meetings and workshops for dozens of employees
- Designed a project management dashboard with risk assessment and post-mortem analysis aimed at improving project execution and resource allocation
- Created and validated retrofit documentation to prepare for Epitaxy tool retrofits as needed by customer accounts

UX/UI, Business Intelligence Management Department

Applied Materials

Santa Clara, CA
Sep 2017 - Nov 2018

Assisted with dashboard wireframing, workflows, and documentation for company-wide BI tools

- Illustrated internal website and dashboard wireframes for various business intelligence applications using Adobe Illustrator and sketches
- Assisted with documentation of functional specifications and training videos for various dashboards in order to facilitate tool adoption

Product Designer, Nestlé: ME310 Product Design Stanford University

Stanford, CA
Sep 2016 - Jun 2017

Collaborated with the Paris-est d.school under sponsorship of Nestlé to produce a product that aims to reinvigorate the cooking experience and increase culinary aid sales

- Explored design space through benchmarking of existing products such as culinary aids, autonomous cooks, smart tools in the kitchen, and grocery environments
- Interviewed relevant parties (families, chefs, students, robotic chef start-ups) aimed at identifying needs of potential users and opportunities
- Generated prototypes aimed at exploring functions and experiences critical to the user

Posture Decision Support, UCSD: Todd Coleman Lab UC San Diego


La Jolla, CA
Sep 2015 - Jun 2016

Developed a support decision tool for ergonomics in surgery. Established a proof of concept for a posture correction method that accounts for the subjective nature of ergonomics in an interdisciplinary project between UCSD Dept. of Bioengineering and UCSD School of Medicine

- Utilized video data to create a machine learning tool that can infer postures
- Analysis done with PCA, ROC Curves, and N-fold cross validation

Research Associate, SAGE2 Research Group

Osaka, Japan
Jun 2015 - Sep 2015

 Deployed a prototype disaster management app on a new multi-site visualization and collaborative platform, SAGE2. Demonstrated the feasibility of data-intensive applications on SAGE2.

- Developed a web-based app with a user interface using JavaScript, HTML/CSS
- Created a data broker to parse JSON datasets with disaster data
- Visualized coordinate-specific data using D3 and Leaflet Map Libraries

PERSONAL PROJECTS

Spotify Connect, Personal Project

East Palo Alto, CA
May 2019 - July 2019



Designed a new feature in Spotify to help expand its user base and cater towards creator platform

- Performed user interviews, online surveys, competitive analysis to get an understanding of the audio streaming landscape and to create a journey map to differentiate listeners
- Developed a chatting feature that is used to connect artists with other artists in order to facilitate a creator community as a solution to Spotify's lack of presence for new artists

Game Designer, Personal Project

East Palo Alto, CA
Jun 2018 - Dec 2018

We Are Not Alone

Designed a deception-based card game and managed operations of printing the game

- Collaborated with a co-creator to iterate gameplay and the story of the game to ensure that the game was not only fun, but also had immersion and flavor
- Created wireframes, mockups, and illustrations to convey card design, rulebook, and specifications for an online printer to manufacture the playing cards

SKILLS

- | | | | |
|------------------------|--------------------------|--------------------|-----------------------|
| • Adobe Illustrator | • C++ | • Fusion360 (CAD) | • Machining |
| • Adobe XD | • MATLAB | • SolidWorks (CAD) | • Casting |
| • Web/Dashboard Design | • Julia Language/Jupyter | • ANSYS (FEA) | • Woodworking |
| • Storyboarding | • Exposure to JavaScript | • Microsoft Office | • Rapid Prototyping |
| • User Research | • Exposure to SQL | • SharePoint Admin | • Arduino Programming |

RELATED COURSEWORK

- Product-based Engineering (ME310)
- Dynamics and Controls
- Decisionmaking Under Uncertainty (RL)
- C++ Programming Abstractions
- Intro to MATLAB
- Biomechanics of Movement
- Modeling and Simulation of Human Movement
- Bioengineering Design
- Bioinstrumentation and Biomedical Imaging
- Finite Element Analysis in Mechanical Design