

# RYAN CHIANG

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## EDUCATION

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**University of California, Berkeley | College of Engineering**

B.S. Mechanical Engineering

*Expected May 2025*

*GPA 3.852/4*

*Relevant Courses:* Manufacturing, Mechanics of Materials, Advanced CADD, Statistics & Data Science, Static and Dynamic Mechanics, Fluid Mechanics, Thermodynamics, Dynamic Feedback Systems, Experimentation, Product Development

*Accolades:* TBP Honors Society (Top 5% Engineering Class), BCDI Design Certificate, SCET Certificate

## RESEARCH

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**Student Researcher** | *University of California, Berkeley*

*December 2023 - Present*

Analyzing Structural Integrity of Buildings via Concrete Impedance UAV

- Performed experimental stress tests to design carbon fiber and Nylon 6 frame under strict weight requirements
- Stabilized drone flight via load testing to achieve weight of 220g and minimizing moment of inertia
- Designed point-to-point hardware architecture with ESP32 in C to receive sensor data to store within SD card
- Analyzed data via principal component analysis to map out 2D plane to generate moisture heatmap

## EXPERIENCE

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**Web Development Director** | *SAAS Berkeley* | *Berkeley, CA*

*January 2022 - Present*

- Performed leadership duties within 6 project teams to iteratively develop website features within deadlines
- Redesigned the full front end of website from scratch via Bootstrap, leading to 42% increase in user retention
- Developed the current design and branding of SAAS, increasing applicants by 150% compared to previous years

**Network Engineer Intern** | *Atos* | *Norco, CA*

*May 2020 - August 2021*

- Designed custom PLA mounting platforms for 100 surveillance cameras for video analytics via CADD
- Spearheaded the redistribution of \$50k in surveillance spending to server installation via DevOps
- Installed video surveillance hardware for predictive failure and preventative maintenance across 7 production lines

## PROJECTS

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3D-Printer Automatic Print Removal

- Designed linear actuating system via herringbone gears and rail driven by 12V, max torque 0.711 Nm, DC motor
- Analyzed the loading conditions on the push-bar via FEA, resulting in a max von Mises stress 0.67 MPa and FOS of 2
- Formulated 8 GD&T drawings of parts using fit and tolerance specifications data

360 Degree Security Camera

- Created hardware architecture utilizing MOSFETs to supply power to 2 stepper motors and camera module
- Designed 4:1 planetary gearbox in Fusion 360 to yaw rotation, 0.03 Nm stepper motor to move under load
- Regulated internal heat generation by utilizing proper ventilation through the hardware housing unit

2-in-1 Knife with Built-in Sharpener

- Devised a high-fidelity knife with a high carbon steel blade, CNC fabricated sharpener, and 3D printed handle
- Extensively prototyped via CADD (SolidWorks & Shapr3D), FDM, and Polyjet 3D printing (Polyjet Objet Connex)
- Analyzed strength of product through FEA, achieving a max von Mises stress of 13.5 MPa and min FOS of 2

Automatic Coffee Maker

- Automated coffee making using IoT and MQTT protocols to turn on/off, log temperature, and receive updates
- Utilized an ESP32, Servo Motor, LED, Button, and Thermocouple inside a FDM printed housing via CADD
- Integrated a Discord channel via IFTTT to communicate coffee temperature and statuses

## SKILLS

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*Technical Skills:* FDM Printing, GD&T, PCB Design, Soldering, ESP32, Carpentry, TIG Welding, Lathe/Mill, CNC

*Software:* SOLIDWORKS, Creo, Onshape, SOLIDWORKS Simulation, MATLAB, Fusion 360, AutoCAD, Shapr3D, 3DS Max, Python, C, Java, HTML, CSS, Javascript, React.js, Bootstrap, Figma, Adobe Illustrator, Photoshop