Bob Tianqi Wei

San Francisco, CA | bobtianqiwei@berkeley.edu | 510-816-2381 | www.bobwei.top/design

Education

University of California at Berkeley, College of Engineering Aug 2023 – Dec 2024
M.Des in Human-Computer Interaction Distinguished Scholar, 3.66/4

Tsinghua University, Academy of Arts and Design Aug 2019 – Jun 2023
B.A. in Industrial and Product Design 3.71/4

Skills

Mechanical Design: Mechanism layout, kinematics, tolerance-aware assemblies, microfluidic channels, sealing strategies, DFM
CAD & Visualization: SolidWorks, Rhino, Grasshopper, AutoCAD, KeyShot, technical drawings and exploded views
Prototyping & Fabrication: 3D printing, laser cutting, silicone casting, fixturing, adhesive bonding and sealing
Mechatronics & Embedded: Raspberry Pi, Arduino, motor drivers and servos, sensor integration
Software & AI: Python, JavaScript, C++, HTML/CSS, OpenCV, React/Node, basic ML and LLM APIs

Projects

MorphingSkin – Flexible EOP Soft-Actuation Platform, UC Berkeley ME (Research) Feb 2025 - May 2025

- Fabricated a flexible EOP stack: laser-cut membrane, heat-pressed TPU, silicone encapsulation; sealed reservoirs and channels
- Built a portable 16-channel high-voltage driver with a serviceable harness enabling independent control and fast iteration
- Characterized flow, pressure, stroke, and durability — ∼20 mL/min, ∼25 kPa @ 250 V, 6.0 mm, 600 cycles
- Mitigated failures via stack-up, sealing, and trace routing updates; improved robustness and manufacturability

ILLUMINATIO – Mechatronic Adaptive Lighting (Mechanical Design & Fabrication) Jan 2023 - May 2023

- Designed a servo-actuated lamp arm (4× high-torque) on a 360 base; Rhino/AutoCAD drawings; laser-cut 3 mm aluminum structure with custom mounts and cable routing
- Integrated embedded controller, dual task/ambient LEDs, camera, and mini projector; kinematic aiming to reduce glare
- Bench-tested mechatronics; demonstrated adaptive scenes with vision-based control

Floro – Autonomous Plant-Care Mobile Platform (Industrial Design & Prototyping) Apr 2022 - May 2022

- Fabricated a two-piece chassis for a dual-motor mobile base; mounted driver and sensors with strain relief and service access
- Integrated light/moisture/IR sensors and camera; implemented line tracking, obstacle avoidance, light seeking, and moisture-triggered watering; demo-validated

Experiences

Research Design Engineer, Morphing Matter Lab, UC Berkeley Mechanical Engineering, Contract Feb 2025 - May 2025

- Led design and fabrication of a skin-like soft interface, integrating multimodal actuation and sealed assemblies
- Defined the design space and built functional demos to validate mechanics, control, and user interaction
- Practiced mechanical design and material prototyping in a research setting, coordinating iteration with the team

Research Design Engineer, Berkeley Institute of Design Lab, UC Berkeley EECS, Part-Time Nov 2023 - Present

- Led prototyping of AI-assisted learning tools with physical-digital interfaces, focusing on usability and build feasibility
- Conducted studies with educators to co-design a contextual-feedback web app, translating insights into interface flows
- Collaborated with cognitive researchers on a real-time hand-tracking conducting interface, refining interaction ergonomics

Industrial Designer, ANTA Sports, Internship Aug - Dec 2021

- Designed a memory-based lacing mechanism for badminton footwear, improving fit and ease of use
- Conducted user research and competitor tear-downs, including BOA-style systems, to inform mechanism choices
- Led mechanical prototyping and CAD modeling, reducing lacing time from 15 s to 3 s

Teaching

UC Berkeley, INFO 213: Introduction to User Experience Design, TA Aug 2024 - Dec 2024
UC Berkeley, DESINV 22: Prototyping and Fabrication, Lead TA Jun 2024 - Aug 2024
UC Berkeley, INFO C262: Theory and Practice of Tangible User Interfaces, Lead TA Aug 2023 - Dec 2023