

Bob Tianqi Wei ("Tyan-Chi", he/they)

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Education

University of California at Berkeley, College of Engineering, CA, USA Aug 2023 – Dec 2024
M.Des in Human-Computer Interaction GPA: 3.662/4

- Relevant Courses: COMPSCI 260B: Human-Computer Interaction Research(A-), EDUC 222C: Design-Based Research Forum(A), MUSIC 158B: Situated Instrument Design for Musical Expression(A), DESINV 210: Designing Emerging Technologies

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

- Relevant Courses: Manufacturing Engineering Practice - Robot Development(A-), Design Engineering Application, Design Methodology(A-), Interface Design of Product Semantics(A-), Fundamental Industrial Design(A-), Multi-discipline Design Practice(A), Design Thinking(A), Basic Design Engineering - Functional Principle (Mechanical Design), Computer-Aided Design(A), Prototype Making(A), Formation Fundamentals(A), Creative Design in Mechanics, Human Factor Engineering in Industrial Design, Engineering Drawing

Music Course Series

- Relevant Courses: Classical Piano Pieces Performance(A), Romantic and 20th Century Piano Pieces Performance(A+), Basic Choral Conducting(A-), Music Phenomena in the Multi-Culture(A-), Basic Music Theory, Appreciation and Analysis of Western Classical Opera, Sound Design and Research(A), Musical Theater Performance, Theory and Production of music Arrangement(A)

Research & Professional Experience

UC Berkeley EECS, Berkeley Institute of Design Lab, Prof. Bjoern Hartmann, Researcher Nov 2023 - Present

- Conducted HCI research on generative AI systems for creative work, voice acting, and interactive learning environments, combining quantitative analysis with qualitative studies.
- Developed web-based interfaces and prototypes using JavaScript and HTML for human-AI interaction experiments.

UC Berkeley ME, Morphing Matter Lab, Prof. Lining Yao, Researcher Feb 2025 - Present

- Developed flexible electroosmotic pumps, using silicone to fabricate flexible materials. Assisted in the conceptualization of applications, produced video documentation, and conducted physical performance testing on materials and structures.
- Co-authored a literature review on Ecological HCI, exploring materials design and fabrication's impact on sustainability and ecological integration.

Association for Computing Machinery (ACM), Reviewer Sep 2024 - Present

- Reviewed papers for the ACM CHI conference, providing feedback on submissions related to human-computer interaction research.

UC Berkeley, School of Education, Prof. Dor Abrahamson, Graduate Student Researcher Aug 2023 - Dec 2023

- Investigated cognitive processes in tacit knowledge acquisition through learning sciences and cognitive science research, focusing on embodied learning in interactive educational environments.
- Developed educational tools with multimodal feedback to study how learners construct understanding through guided physical interaction.

Tsinghua University, Department of Industrial Design, Prof. Lintao Tang, Student Researcher Nov 2022 - Jul 2023

- Developed an adaptive AI-driven lighting system that responds to user behavior to create personalized ambient environments.
- Conducted comprehensive literature review on illumination design principles through analyzing 18 technical publications from German Lighting Association, synthesizing findings to inform adaptive lighting parameters.
- Implemented a functional prototype using Raspberry Pi and machine learning, integrating sensor data processing and environmental control algorithms in Python and C++.

Publications

Generating Visual Aids to Help Students Understand Graphic Design with EKPHRASIS Expected 2025

Bob Tianqi Wei, Shayne Shen, Shm Almeda, Bjoern Hartmann.

ACM Conference on Human Factors in Computing Systems (CHI) 2025, PAPER UNDER REVIEW

Leveraging Digital Disentanglement in Romantic Breakups to Improve Access Control for Cybersecure Advanced Manufacturing

Caseysimone Ballestas, *Bob Tianqi Wei*, Subin Lee, Moritz Rietschel, Bjoern Hartmann.

ACM Conference on Human Factors in Computing Systems (CHI) 2025, PAPER UNDER REVIEW

Expected 2025

Labor, Power, and Belonging: The Work of Voice in the Age of AI Reproduction

Shm Almeda, Robin Netzorg, Isabel Li, Ethan Tam, Skyla Ma, *Bob Tianqi Wei*.

ACM Conference on Fairness, Accountability, and Transparency (FAccT) 2025, PAPER UNDER REVIEW

Expected 2025

Shaping Ecological HCI through Materials Design and Fabrication: A Review and Future Design Considerations

Yaning Li, Ziqian Yu, Chengjun Li, Yuexi Chen, Yue Yang, Tingyu Cheng, Ziyao He, *Bob Tianqi Wei*, Eldy S. Lazaro Vasquez, Zeyu Yan, Di Wu, Tianyu Yu, Yuecheng Peng, Dinesh K. Patel, Huaishu Peng, Nivedita Arora, Aditi Maheshwari, Guanyun Wang, Teng Han, Josiah Hester, Jean-Baptiste Labrune, Andreea Danielelescu, Pedro Lopes, Vikram Iyer, Hiroshi Ishii, Lining Yao, Qiuyu Lu, Meng Li.

International Journal of Human–Computer Interaction (IJHCI), PAPER UNDER REVIEW

Expected 2025

Demonstration of Sympathetic Orchestra: An Interactive Conducting Education System for Responsive, Tacit Skill Development

Bob Tianqi Wei, Shm Almeda, Ethan Tam, and Dor Abrahamson.

ACM Symposium on User Interface Software and Technology (UIST) 2024, doi/10.1145/3672539.3686783

Oct 2024

Projects

EKPHRASIS

Bob Tianqi Wei and Shayne Shen, Shm Almeda, Bjoern Hartmann

- Through a mixed-methods approach combining expert interviews, professional designer dataset collection, and machine learning, we developed an AI-enabled educational platform that facilitates students' acquisition of tacit design knowledge through structured, iterative chess-like practice.

Sep 2024 - Present

Flexible Electroosmotic Pumps

Tianyu Yu, Bob Tianqi Wei, Lining Yao

- FlexEOP is a method to create flexible electroosmotic pumps that are fully composed of flexible materials, facilitating shape-changing actuators with high flexibility and self-containment. We demonstrated the design space of FlexEOP, including shapechanging display on flexible strips, panels, and curved surfaces, and a novel design of soft robotic fiber. We envision future applications including wearable tactile devices, curved shapechanging displays, and multi-degree-of-freedom self-contained soft robotics.

Sep 2024 - Present

Investigating the Impact of Responsive Feedback on the Experience of Learning to Conduct with Sympathetic Orchestra

Bob Tianqi Wei, Shm Almeda, Ethan Tam, Dor Abrahamson

- Designed and implemented Sympathetic Orchestra, an interactive conducting education system using hand-tracking technology to provide real-time responsive musical feedback for conducting students
- Led empirical research comparing learning outcomes between traditional methods and the interactive system, analyzing performance parameters including phrasing, modulation, and interpretation.

Jan 2024 - Present

Teaching Experience

UC Berkeley, INFO 213: Introduction to User Experience Design, Graduate Student Instructor (Reader)

- Grades and provides feedback on assignments and coaches students practice in-depth interviews and UX research.

Aug 2024 - Dec 2024

UC Berkeley, DESINV 22: Prototyping and Fabrication, Graduate Student Instructor (Lead TA)

- Teaches manufacturing techniques and basic electronics to help students build a Bluetooth-controlled vehicle.

Jun 2024 - Aug 2024

UC Berkeley, INFO C262: Theory and Practice of Tangible User Interfaces, Graduate Student Instructor (Lead TA)

- Delivered introductory courses on open-source hardware development and programming.
- Developed a course website enabling students to submit assignments, access course materials, schedule office hours.

Aug 2023 - Dec 2023

Tsinghua University, Romantic and 20th Century Piano Pieces Performance, Lead TA

- Assisted in planning the course schedules, tutored students to complete homework exercises, and participated in the design and marking of course assignments.

Sep 2021 - Jul 2022

Xiaoze Art Studio and Wufang Design Studio, Graphic Design Courses for High School Students, Aug 2019 - Feb 2021
Instructor (Part Time)

- Analyzed outstanding design works, explained the art and design principles, and supervised the creation of design works.

Presentations and Speeches

UC Berkeley Fall 2024 Master of Design Graduation Ceremony	Dec 2024
The Transformative Power of Interdisciplinary Design, Speech	
UC Berkeley MDes Graduate Exhibition “VEINS OF THE COSMOS”	Dec 2024
EKPHRASIS: Learning Tacit Knowledge in Foundational Visual Design Through Human-AI Co-Practice, Demonstration and Paper	
Jacobs Winter Design Showcase: HCI Research, UC Berkeley	Dec 2024
Romantic Breakups as a Lens for Industrial Cybersecurity: Cross-Domain Insights for Access Control, Poster	
ACM Symposium on User Interface Software and Technology (UIST) 2024, Pittsburgh	Oct 2024
Demonstration of Sympathetic Orchestra: An Interactive Conducting Education System for Responsive, Tacit Skill Development	
UC Berkeley Education Research Day Conference	Apr 2024
Building Professional Hearing: Research on New Tools and Educational Methods for Enhancing the Understanding and Processing of Polyphonic Music, Paper	
Jacobs Institute of Design Innovation Showcase, UC Berkeley	Dec 2023
Poetry in Motion, Installation; Plano, Installation	
International Symposium on Academic Makerspaces 2023, Carnegie Mellon University	Oct 2023
Intelligent Illuminating Product Design Based on Machine Learning, Poster	
2023 Undergraduate Exhibition of Academy of Arts and Design, Tsinghua University	Jun 2023
Intelligent Illuminating Product Design Based on Machine Learning, Demonstration and Paper	
The 41st Student Extra-curricular Academic and Scientific Works Exhibition, Tsinghua University	Apr 2023
Sympathetic Orchestra, Demonstration and Poster	

Awards

MDes Distinguished Scholar Award, University of California, Berkeley	Mar 2023
Social Work Excellence Award, Tsinghua University	Jan 2023
Social Work Excellence Award, Tsinghua University	Dec 2020
Award for Excellence in Literature and Art, Tsinghua University	Nov 2022
Award for Excellence in Literature and Art, Tsinghua University	Dec 2021
Award for Excellence in Literature and Art, Tsinghua University	Dec 2020
Honorable Mention, 3rd China College Student Power Battery Innovation Competition	Nov 2021
First Prize of Youth Group, The 7th Macau-Asia Pacific Youth Piano Competition	Jul 2021
Second Prize of Tsinghua University, Beijing College Students Engineering Ability Competition	Dec 2019

Music Performance

Bob Tianqi Wei: Stringed Harmony, Live at CNMAT, UC Berkeley	May 2024
Tianqi Wei & Friends' Graduation Concert, Live at Tsinghua University Music Library	May 2023
Rachmaninoff: Piano Concerto No.2, Conductor, Live at New Tsinghua School Concert Hall	May 2022
Elisabeth (musical, Japanese), Rudolf, Live at Meng Minwei Hall, Tsinghua University	Oct 2021
J.S.Bach: Concerto in D Minor BWV 974, Piano Solo, Live at Steinway Hall Beijing	Jul 2021
J.S.Bach: Goldberg Variations BWV 988, Piano Solo, Live at Meng Minwei Concert Hall	Dec 2020

Leadership

Tsinghua University Student Art Troupe Clavier Team, President	Aug 2021 - Aug 2022
• Organized and held large-scale concert activities and art popularization lectures.	
• Empowered the team to participate in international professional competitions.	
Tsinghua University iOS Club, Leader of Publicity Group and Member of Product Manager Team	Aug 2021 - Aug 2022

- Represented the club to Apple headquarters for an interaction and hardware theme exchange, allowing the club to receive support for development equipment, funding, and internship resources.
- Led team developed a cognitive training app for the elderly to help them practice mental exercises to prevent dementia.

Tsinghua University Student Union, Member of Sport and Recreation Department

Aug 2019 - Aug 2020

- Organized basketball games and planned a promotional campaign for graduation music festivals.

Skills

Languages: Mandarin Chinese (Native), English (TOEFL 110), Japanese (Fluent)

Programming: C++, Java, Python, MATLAB, Processing, JavaScript, HTML, Max MSP

CAD: Rhinoceros, Grasshopper, Solidworks, AutoCAD, KeyShot, Autodesk Fusion 360

Software: Figma, Microsoft Office, Adobe Photoshop, Adobe InDesign, Logic Pro, Final Cut Pro

Skills: Mechanical Design, Digital Fabrication, Prototyping with Embedded Systems, Music Production

Hobbies: Photography, Musical, Watercolor, Badminton, Cooking, Palmistry, FengShui