

# 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 Experience

**UC Berkeley, EECS Department, 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, 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** Expected 2025

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

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

**Labor, Power, and Belonging: The Work of Voice in the Age of AI Reproduction** Expected 2025

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

**Shaping Ecological HCI through Materials Design and Fabrication: A Review and Future Design Considerations** Expected 2025

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 Danielescu, Pedro Lopes, Vikram Iyer, Hiroshi Ishii, Lining Yao, Qiuyu Lu, Meng Li.

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

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

Oct 2024

**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

## Projects

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### EKPHRASIS

Sep 2024 - Present

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.

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

Jan 2024 - Present

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.

## Teaching Experience

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

Aug 2024 - Dec 2024

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

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

Jun 2024 - Aug 2024

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

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

Aug 2023 - Dec 2023

- 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.

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

Sep 2021 - Jul 2022

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

**Xiaozhe Art Studio and Wufang Design Studio, Graphic Design Courses for High School Students**, Instructor (Part Time)

Aug 2019 - Feb 2021

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

## Presentations and Speeches

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**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

<b>UC Berkeley Education Research Day Conference</b>	Apr 2024
Building Professional Hearing: Research on New Tools and Educational Methods for Enhancing the Understanding and Processing of Polyphonic Music, Paper	
<b>Jacobs Institute of Design Innovation Showcase, UC Berkeley</b>	Dec 2023
Poetry in Motion, Installation; Plano, Installation	
<b>International Symposium on Academic Makerspaces 2023, Carnegie Mellon University</b>	Oct 2023
Intelligent Illuminating Product Design Based on Machine Learning, Poster	
<b>2023 Undergraduate Exhibition of Academy of Arts and Design, Tsinghua University</b>	Jun 2023
Intelligent Illuminating Product Design Based on Machine Learning, Demonstration and Paper	
<b>The 41st Student Extra-curricular Academic and Scientific Works Exhibition, Tsinghua University</b>	Apr 2023
Sympathetic Orchestra, Demonstration and Poster	

## Awards

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

## Music Performance

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

## Leadership

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<b>Tsinghua University Student Art Troupe Clavier Team</b> , President	Aug 2021 - Aug 2022
<ul style="list-style-type: none"> <li>Organized and held large-scale concert activities and art popularization lectures.</li> <li>Empowered the team to participate in international professional competitions.</li> </ul>	
<b>Tsinghua University iOS Club</b> , Leader of Publicity Group and Member of Product Manager Team	Aug 2021 - Aug 2022
<ul style="list-style-type: none"> <li>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.</li> <li>Led team developed a cognitive training app for the elderly to help them practice mental exercises to prevent dementia.</li> </ul>	
<b>Tsinghua University Student Union</b> , Member of Sport and Recreation Department	Aug 2019 - Aug 2020
<ul style="list-style-type: none"> <li>Organized basketball games and planned a promotional campaign for graduation music festivals.</li> </ul>	

## Skills

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**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