

Tzu-Sheng Kuo

✉ tzushenk@cs.cmu.edu
📁 tskuo.github.io

Curriculum Vitae

Education

- 2021 – present **Carnegie Mellon University**
School of Computer Science
Ph.D. in Human-Computer Interaction
Committee: Kenneth Holstein (co-advisor), Haiyi Zhu (co-advisor), Aniket Kittur, Amy X. Zhang, Michael S. Bernstein
- 2019 – 2021 **Stanford University**
M.S. in Electrical Engineering
GPA: 4.00/4.00
- 2014 – 2019 **National Taiwan University (NTU)**
B.S. in Electrical Engineering, Summa Cum Laude (Top 1%)
GPA: 4.25/4.30

Honors and Awards

- 2025 ACM CHI Best Paper Honorable Mention Award
- 2025 K&L Gates Presidential Fellowship in Ethics and Computational Technologies
- 2024 MLCommons ML and Systems Rising Star
- 2023 ACM CHI Best Paper Award
- 2023 Taiwanese GSSA Fellowship
- 2022 MLCommons Hero Award
- 2021 Stanford Course Assistant Outstanding Award
- 2019 ACM UIST Best Paper Honorable Mention Award
- 2019 ACM CHI Best Paper Honorable Mention Award
- 2018 Phi Tau Phi Scholastic Honor Society Honorary Membership
- 2018 Chien Shih-Liang Memorial Scholarship
- 2017 Irving T. Ho Memorial Scholarship

Refereed Conference & Journal Publications

† indicates co-first authorship and ‡ indicates co-senior authorship

- P15 **Botender: Supporting Communities in Collaboratively Designing AI Agents through Case-Based Provocations**
Tzu-Sheng Kuo, Sophia Liu, Quan Ze Chen, Joseph Seering, Amy X. Zhang, Haiyi Zhu[‡], Kenneth Holstein[‡]
Under Revision
- P14 **PolicyPad: Collaborative Prototyping of LLM Policies**
K. J. Kevin Feng, **Tzu-Sheng Kuo**, Quan Ze Chen, Inyoung Cheong, Kenneth Holstein, Amy X. Zhang
Under Revision
- P13 **Understanding and Challenging Gig Workers' Perceptions of Their Vulnerabilities**
Sander de Jong, Jane Hsieh, **Tzu-Sheng Kuo**, Rune Møberg Jacobsen, Niels van Berkel, Haiyi Zhu
Under Review
- P12 **PolicyCraft: Supporting Collaborative and Participatory Policy Design through Case-Grounded Deliberation**
Tzu-Sheng Kuo, Quan Ze Chen, Amy X. Zhang, Jane Hsieh, Haiyi Zhu[‡], Kenneth Holstein[‡]
Proceedings of the 2025 CHI Conference on Human Factors in Computing Systems (CHI '25)

-  P11 **Gig2Gether: Datasharing to Empower, Unify and Demistify Gig Work**
Jane Hsieh, Angie Zhang, Sajel Surati, Sijia Xie, Yeshua Ayala, Nithila Sathiyar, **Tzu-Sheng Kuo**, Min Kyung Lee, Haiyi Zhu
Proceedings of the 2025 CHI Conference on Human Factors in Computing Systems (CHI '25)
Best Paper Honorable Mention (Top 5%)
- P10 **The Future of Open Human Feedback**
Shachar Don-Yehiya, Ben Burtenshaw, Ramon Fernandez Astudillo, Cailean Osborne, Mimansa Jaiswal, **Tzu-Sheng Kuo**, Wenting Zhao, Idan Shenfeld, Andi Peng, Mikhail Yurochkin, Atoosa Kasirzadeh, Yangsibo Huang, Tatsunori Hashimoto, Yacine Jernite, Daniel Vila-Suero, Omri Abend, Jennifer Ding, Sara Hooker, Hannah Rose Kirk, Leshem Choshen
Journal of Nature Machine Intelligence (2025)
- P9 **DMLR: Data-centric Machine Learning Research – Past, Present and Future**
Luis Oala, Manil Maskey, Lilith Bat-Leah, Alicia Parrish, Nezihe Merve Gürel, **Tzu-Sheng Kuo**, Yang Liu, Rotem Dror, Danilo Brajovic, Xiaozhe Yao, Max Bartolo, William A Gaviria Rojas, Ryan Hileman, Rainier Aliment, Michael W. Mahoney, Meg Risdal, Matthew Lease, Wojciech Samek, Debojyoti Dutta, Curtis G Northcutt, Cody Coleman, Braden Hancock, Bernard Koch, Girmaw Abebe Tadesse, Bojan Karlaš, Ahmed Alaa, Adjai Bousso Dieng, Natasha Noy, Vijay Janapa Reddi, James Zou, Praveen Paritosh, Mihaela van der Schaar, Kurt Bollacker, Lora Aroyo, Ce Zhang, Joaquin Vanschoren, Isabelle Guyon, Peter Mattson
Journal of Data-centric Machine Learning Research (2024)
- P8 **AI Failure Cards: Understanding and Supporting Grassroots Efforts to Mitigate AI Failures in Homeless Services**
Ningjing Tang, Jiayin Zhi, **Tzu-Sheng Kuo**, Calla Kainaroi, Jeremy J. Northup, Kenneth Holstein, Haiyi Zhu, Hoda Heidari, Hong Shen
Proceedings of the 2024 ACM Conference on Fairness, Accountability, and Transparency (FAccT '24)
- P7 **Wikibench: Community-Driven Data Curation for AI Evaluation on Wikipedia**
Tzu-Sheng Kuo, Aaron Halfaker, Zirui Cheng, Jiwoo Kim, Meng-Hsin Wu, Tongshuang Wu, Kenneth Holstein[‡], Haiyi Zhu[‡]
Proceedings of the 2024 CHI Conference on Human Factors in Computing Systems (CHI '24)
- P6 **DataPerf: Benchmarks for Data-Centric AI Development**
Mark Mazumder, Colby Banbury, Xiaozhe Yao, Bojan Karlaš, William Gaviria Rojas, Sudnya Diamos, Greg Diamos, Lynn He, Alicia Parrish, Hannah Rose Kirk, Jessica Quaye, Charvi Rastogi, Douwe Kiela, David Jurado, David Kanter, Rafael Mosquera, Juan Ciro, Lora Aroyo, Bilge Acun, Lingjiao Chen, Mehul Smriti Raje, Max Bartolo, Sabri Eyuboglu, Amirata Ghorbani, Emmett Goodman, Oana Inel, Tariq Kane, Christine R. Kirkpatrick, **Tzu-Sheng Kuo**, Jonas Mueller, Tristan Thrush, Joaquin Vanschoren, Margaret Warren, Adina Williams, Serena Yeung, Newsha Ardalani, Praveen Paritosh, Ce Zhang, James Zou, Carole-Jean Wu, Cody Coleman, Andrew Ng, Peter Mattson, Vijay Janapa Reddi
Advances in Neural Information Processing Systems (NeurIPS '23)
-  P5 **Understanding Frontline Workers' and Unhoused Individuals' Perspectives on AI Used in Homeless Services**
Tzu-Sheng Kuo[†], Hong Shen[†], Jisoo Geum, Nev Jones, Jason I. Hong, Haiyi Zhu[‡], and Kenneth Holstein[‡]
Proceedings of the 2023 CHI Conference on Human Factors in Computing Systems (CHI '23)
Best Paper Award (Top 1%)
-  P4 **TilePoP: Tile-type Pop-up Prop for Virtual Reality**
Shan-Yuan Teng, Cheng-Lung Lin, Chi-Huan Chiang, **Tzu-Sheng Kuo**, Liwei Chan, Da-Yuan Huang, and Bing-Yu Chen
Proceedings of the 32nd Annual ACM Symposium on User Interface Software and Technology (UIST '19)
Best Paper Honorable Mention (Top 5%)
-  P3 **AutoFritz: Autocomplete for Prototyping Virtual Breadboard Circuits**
Jo-Yu Lo, Da-Yuan Huang, **Tzu-Sheng Kuo**, Chen-Kuo Sun, Jun Gong, Teddy Seyed, Xing-Dong Yang, and Bing-Yu Chen
Proceedings of the 2019 CHI Conference on Human Factors in Computing Systems (CHI '19)
Best Paper Honorable Mention (Top 5%)
- P2 **PuPoP: Pop-up Prop on Palm for Virtual Reality**
Shan-Yuan Teng, **Tzu-Sheng Kuo**, Chi Wang, Chi-Huan Chiang, Da-Yuan Huang, Liwei Chan, and Bing-Yu Chen
Proceedings of the 31st Annual ACM Symposium on User Interface Software and Technology (UIST '18)
- P1 **Depth from Gaze**
Tzu-Sheng Kuo, Kuang-Tsu Shih, Sheng-Lung Chung, and Homer H. Chen
The 25th IEEE International Conference on Image Processing (ICIP '18)

Organized Workshops

- O4 **WikiNLP: Advancing Natural Language Processing for Wikipedia**
Akhil Arora, Isaac Johnson, Lucie-Aimée Kaffee, **Tzu-Sheng Kuo**, Tiziano Piccardi, Indira Sen
Workshop at the 63rd Annual Meeting of the Association for Computational Linguistics (ACL '25)
- O3 **Sociotechnical AI Governance: Challenges and Opportunities for HCI**
K. J. Kevin Feng, Rock Yuren Pang, **Tzu-Sheng Kuo**, Amy A. Winecoff, Emily Tseng, David Gray Widder, Harini Suresh, Katharina Reinecke, Amy X. Zhang
Workshop at the 2025 CHI Conference on Human Factors in Computing Systems (CHI '25)
- O2 **DMLR Workshop: Data-Centric Machine Learning Research**
Ce Zhang, Praveen Paritosh, Newsha Ardalani, Nezihe Merve Gürel, William Gaviria Rojas, Yang Liu, Rotem Dror, Manil Maskey, Lilith Bat-Leah, **Tzu-Sheng Kuo**, Luis Oala, Max Bartolo, Ludwig Schmidt, Alicia Parrish, Daniel Kondermann, Najoung Kim
Workshop at the 40th International Conference on Machine Learning (ICML '23)
- O1 **DataPerf: Benchmarking Data for Data-Centric AI**
Newsha Ardalani, Lora Aroyo, Colby Banbury, Greg Diamos, **Tzu-Sheng Kuo**, Peter Mattson, Mark Mazumdar, Praveen Paritosh, William Gaviria Rojas, James Zou, Vijay Janapa Reddi, Carole-Jean Wu, Cody Coleman
Workshop at the 39th International Conference on Machine Learning (ICML '22)

Case Study, Workshop, and Poster Publications

- C6 **Collective Meaning Cascades but Strange Ducks Swim Upstream: Facilitating Collective Meaning-making through Co-development of AI Models**
Aaron Halfaker, **Tzu-Sheng Kuo**, Ciell Brusse, Kenneth Holstein, Haiyi Zhu
Extended Abstracts of the 2025 CHI Conference on Human Factors in Computing Systems (CHI EA '25)
- C5 **LLMs as Workers in Human-Computational Algorithms? Replicating Crowdsourcing Pipelines with LLMs**
Tongshuang Wu, Haiyi Zhu, Maya Albayrak, Alexis Axon, Amanda Bertsch, Wenxing Deng, Ziqi Ding, Bill Guo, Sireesh Gururaja, **Tzu-Sheng Kuo**, Jenny T. Liang, Ryan Liu, Ihita Mandal, Jeremiah Milbauer, Xiaolin Ni, Namrata Padmanabhan, Subhashini Ramkumar, Alexis Sudjianto, Jordan Taylor, Ying-Jui Tseng, Patricia Vaidos, Zhijin Wu, Wei Wu, Chenyang Yang
Extended Abstracts of the 2025 CHI Conference on Human Factors in Computing Systems (CHI EA '25)
- C4 **Measuring Adversarial Datasets**
Yuanchen Bai, Raoyi Huang, Vijay Viswanathan, **Tzu-Sheng Kuo**, Tongshuang Wu
Conference of the Asia-Pacific Chapter of the Association for Computational Linguistics (AACL '23 ART of Safety Workshop)
- C3 **Let It Rip! Using Velcro for Acoustic Labeling**
Tzu-Sheng Kuo and Eric Rawn
Adjunct Proceedings of the 33rd Annual ACM Symposium on User Interface Software and Technology (UIST '20 Adjunct)
-  C2 **Assessing Political Bias using Crowdsourced Pairwise Comparisons**
Tzu-Sheng Kuo, McArdle Hankin, Miranda Li, Andrew Ying, and Cathy Wang
Proceeding of the 8th AAAI Conference on Human Computation and Crowdsourcing (HCOMP '20 Poster)
Best Poster Award
- C1 **Deep Aggregation Net for Land Cover Classification**
Tzu-Sheng Kuo[†], Keng-Sen Tseng[†], Jia-Wei Yan[†], Yen-Cheng Liu, and Yu-Chiang Frank Wang
IEEE/CVF Conference on Computer Vision and Pattern Recognition (CVPR '18 DeepGlobe Workshop)

Grants

- 2024 – 2025 **PolicyCraft: Supporting Better Collaborative Policy Design through Case-Grounded Deliberation**
Co-PI with Kenneth Holstein, Haiyi Zhu, Jane Hsieh
Block Center for Technology and Society
\$65,000
- 2024 – 2025 **PolicyCraft: Supporting Collaborative, Bottom-Up Policy Development through Case-Grounded Deliberation**
PI with Co-PIs Quan Ze Chen, Amy X. Zhang, Haiyi Zhu, Kenneth Holstein
Metagov Interoperable Deliberative Tools Grant
\$12,500

2023 – 2024 **Community-Driven AI Evaluation: Empowering Communities to Drive the Evaluation of AI Systems that Impact Them**
Co-PI with Kenneth Holstein, Haiyi Zhu, Tongshuang Wu
Block Center for Technology and Society
\$40,000

Teaching Assistantship

- Fall 2024 CMU 05430: Programming Usable Interfaces
Instructor: Prof. Dominik Moritz
- Spring 2024 CMU 05391: Designing Human Centered Software
Instructor: Prof. Chris Harrison
- Spring 2021 Stanford CS347: Human-Computer Interaction: Foundations and Frontiers
Instructors: Prof. Danaë Metaxa, Prof. Parastoo Abtahi
Outstanding Award
- Winter 2021 Stanford CS147: Introduction to Human-Computer Interaction
Instructor: Prof. James Landay
- Spring 2018 NTU CommE5052: Deep Learning for Computer Vision
Instructor: Prof. Yu-Chiang Frank Wang
- Fall 2017 NTU EE5184: Machine Learning
Instructor: Prof. Hung-Yi Lee
- Spring 2017 NTU EE2011: Signals and Systems
Instructor: Prof. Lin-Shan Lee

Mentoring Students

P# denotes references to co-authored publications.

- 2025 **Sophia Liu**, University of California, Berkeley, BS — P15
- 2023 **Zirui Cheng**, Tsinghua University, BS — P7
- 2023 **Jiwoo Kim**, Columbia University, BS — P7
- 2023 **Meng-Hsin Wu**, Carnegie Mellon University, MS — P7
- 2022 **Jisoo Geum**, Carnegie Mellon University, MS — P5

Service and Leadership

Conference Organizing Committee

- 2026 **Student Volunteer Co-Chair** (w/ Annie Chu, Yuki Onishi, Esen K. Tütüncü)
ACM CHI in Barcelona, Spain
- 2025 **Student Volunteer Co-Chair** (w/ Mikołaj Woźniak, Shohei Mori, Nuwan Janaka)
ACM CHI in Yokohama, Japan

University Service and Outreach

- 2022 – 2025 **Student Co-Lead** (w/ Daye Nam, Jane Hsieh, Alexandra Nisenoff)
CMU Graduate Application Support Program (GASP)
GASP is a student-led initiative in the School of Computer Science designed to support PhD applicants from historically underrepresented or disadvantaged groups. Over the past four years, we have matched 478 applicants from under-resourced backgrounds with current PhD students who volunteer as mentors to help applicants strengthen their applications.
- 2022 – 2025 **Admission Committee**
CMU Research Experience for Undergraduate Program (REU)
I served on the admissions committee for the HCII REU program for three years ('22, '23, '25). The program offers summer research opportunities at CMU HCII for undergraduate students, especially those from under-resourced backgrounds.

- 2020 – 2021 **Student Co-Lead** (w/ Danaë Metaxa)
Stanford HCI Qualifying Exam, Equity & Justice Update
In light of the Black Lives Matter movement and anti-Asian racism, Danaë and I co-led an initiative at the Stanford HCI Group to include readings on diversity, equity, and inclusion in the PhD qualifying exam.
- 2020 – 2021 **Community Associate**
Stanford Escondido Village Graduate Residences (EVGR)
I worked with the Stanford Graduate Life Office and fellow community associates to promote wellness and build community in graduate residences with over 1,200 students. I organized social events focused on celebrating cultural diversity.
- 2016 – 2017 **Co-Director** (w/ Fan-Keng Sun and Jim Liu)
NTUEE Academic Department of the Student Association
We led a team of 30 students to organize a variety of departmental and university outreach events, including research competitions, university fairs, NTUEE+ alumni mixers, and more.
- 2016 – 2017 **Co-Founder** (w/ Fan-Keng Sun and Jim Liu)
NTUEE Makerspace
We established Taiwan's first student-run makerspace, offering students access to equipment, workshops, and mentorship. We aim to empower students to pursue independent projects and engage in hands-on learning beyond the classroom.
- 2017 **Co-Chair** (w/ Fan-Keng Sun and Jim Liu)
MakeNTU Makeathon
We led 60 students and organized Taiwan's first hardware hackathon. We raised \$70,000 USD in funding, partnered with the Taipei City Government and 22 companies, and invited 200 participants to engage in rapid prototyping over 24 hours.

Conference Program Committee

- 2026 CHI, Subcommittee on Interaction Beyond the Individual

Workshop Program Committee

- 2025 CHI, Sociotechnical AI Governance Workshop
2025 Wikimedia Foundation, Wiki Workshop
2024 NeurIPS, Pluralistic Alignment Workshop
2023 ICML, AI & HCI Workshop
2023 ICML, Data-Centric ML Research Workshop
2022 ICML, DataPerf Workshop

Conference & Journal External Reviewer

CHI 23 24 25
CSCW 22 23 24 25
UIST 22 23 24
DIS 23
FAccT 24 25
TOCHI 24 25

Student Volunteer

- 2023 ICML, Hawaii
2023 DIS, Pittsburgh
2022 CSCW, Virtual
2022 CHI, New Orleans
2021 UIST, Virtual

Invited Talks

- 2025 **KIdeKu Workshop: AI & Deliberation**
Germany's Federal Ministry for Education, Family Affairs, Senior Citizens, Women and Youth, FZI Research Center for Information Technology, Karlsruhe Institute of Technology

- 2025 **Research Talks with Block**
Block Center for Technology and Society
- 2025 **Conference on Generative AI: Ethics and Governance**
K&L Gates Initiative in Ethics and Computational Technologies
- 2024 **Human-Centered AI Workshop**
Taiwanese Association of Computer Human Interaction (TAICHI)
- 2024 **Interoperable Deliberative Tool Workshop**
Metagov
- 2024 **Wikimedia Research Showcase**
Wikimedia Foundation
- 2023 **Operationalizing the NIST Risk Management Framework**
National Institute of Standards and Technology (NIST), CMU Responsible AI Initiative
- 2023 **Purposeful AI Special Interest Group**
ACM CSCW Conference

Selected Press

- CMU. From CHI first-timer to perfect attendance. Aug 11, 2025
- CMU. SCS tool improves community buy-in for policy decisions. May 1, 2025
- CMU. Wikibench allows Wikipedians to improve AI evaluation datasets. May 16, 2024
- Northwestern CASMI. Research explores how a Wikipedia-like approach could improve AI evaluation. Apr 22, 2024
- Northwestern CASMI. Designing AI tools for underserved populations from the ground up. Oct 31, 2023
- The Guardian. AI can be a force for good or ill in society, so everyone must shape it, not just the 'tech guys.' Aug 11, 2023
- CMU. CMU researchers use comics to explain AI-supported public housing system to people who need it most. May 8, 2023
- Mad in America. How AI-based programs are harming homeless populations. Apr 20, 2023
- Forbes. There is more to trust than explainability. Nov 30, 2022

Prior Research Experiences

- 2019 – 2021 **Stanford HCI Group**
Advisors: Prof. James Landay, Prof. Elizabeth Murnane
- 2017 – 2019 **NTU Interactive Graphics Lab**
Advisors: Prof. Bing-Yu Chen, Prof. Xing-Dong Yang
- 2017 – 2019 **NTU Vision and Learning Lab**
Advisor: Prof. Yu-Chiang Frank Wang
- 2016 – 2019 **NTU Multimedia Processing and Communications Lab**
Advisor: Prof. Homer H. Chen