tongyu zhou

PhD Candidate · Human-Computer Interaction · Visual Computing

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Education

Brown University *Providence, RI*
Ph.D. in Computer Science *2020 - present*
Advisor: Jeff Huang

Williams College *Williamstown, MA*
B.A. in Computer Science and Statistics *2016 - 2020*
Advisor: Iris Howley
Academic Honor Societies: *Sigma Xi*, *Mu Sigma Rho*

Aquincum Institute of Technology *Budapest, Hungary*
Computer Science Study Abroad Program *2018 - 2019*

Publications

** denotes equal contribution*

Conferences

(in submission) **Tongyu Zhou**, Gromit Chan, Jeff Huang. (2024). Epigraphics: Message-Driven Infographics Authoring. In Proceedings of the 2024 Conference on Human Factors in Computing Systems (CHI '24). ACM.

Tongyu Zhou, Connie Liu, Joshua Kong Yang, Jeff Huang. (2023). filtered.ink: Creating Dynamic Illustrations with SVG Filters. In Proceedings of the 2023 Conference on Human Factors in Computing Systems (CHI '23). ACM.

Jiaju Ma, Jing Qian, **Tongyu Zhou**, Jeff Huang. (2023). FocalPoint: Adaptive Direct Manipulation for Selecting Small 3D Virtual Objects. In Proceedings of the ACM on Interactive, Mobile, Wearable and Ubiquitous Technologies (IMWUT '23). ACM.

Sarah Bawabe*, Laura Wilson*, **Tongyu Zhou***, Ezra Marks, and Jeff Huang. (2021). The UX Factor: Using Comparative Peer Review to Evaluate Designs through User Preferences. In Proceedings of the 2021 Conference on Computer-supported Cooperative Work (CSCW '21). ACM, Article 476, 23 pages. (**Honorable Mention Award, Impact Recognition Award**)

Jing Qian*, **Tongyu Zhou***, Meredith Young-Ng*, Jiaju Ma, Angel Cheung, Xiangyu Li, Ian Gonsher, and Jeff Huang. (2021). Portalware: Exploring Free-Hand AR Drawing with a Dual-Display Smartphone-Wearable Paradigm. In Designing Interactive Systems Conference 2021 (DIS '21). ACM, 205–219.

Jacob Chang, Rachel Duquette, Katherine Thai, **Tongyu Zhou**, Minh Pham, Victor Lin, and Karen Wood. (2020). Combining Genetic Algorithms and Machine Learning for Exploring the Navigation Satellite Constellation Design Tradespace. In Proceedings of the 33rd International Technical Meeting of the Satellite Division of The Institute of Navigation (ION GNSS+ 2020). 407–413.

Tongyu Zhou*, Haoyu Sheng*, and Iris Howley. (2020). Assessing Post-hoc Explainability of the BKT Algorithm. In Proceedings of the AAAI/ACM Conference on AI, Ethics, and Society (AIES '20). ACM, 407–413.

Workshops & Extended Abstracts

Young Cho, Grace Mazzarella, Kelvin Tejeda, **Tongyu Zhou**, and Iris Howley. (2020). What is Bayesian Knowledge Tracing? Poster presentation at the IEEE VIS Workshop on Visualization for AI Explainability.

Research Experience

Brown University – Research Assistant *Providence, RI*

Advisor: Jeff Huang *2020-present*

- Working on systems spanning both the web and AR domains, focusing particularly on vector graphics, to bridge the gap between artists' mental models and tool capabilities
- Investigating how individual, collective, and collaborative creativity can be supported by encouraging designers to derive inspiration from their peers or by example

Adobe – Research Scientist Intern *San Jose, CA*

Advisor: Chang Xiao (2022), Gromit Chan (2023) *Summer 2022, 2023*

- Created a web-based authoring system for infographics that treats a text-based message as the first-class object and uses it to guide LLM-powered infographic asset creation, editing, and syncing
- Designed an end-to-end pipeline for authoring and visualizing instructions for step-wise assembly in smartphone AR

Research in Industrial Projects for Students (REU at IPAM, UCLA) – Student Researcher *Los Angeles, CA*

Mentors: Victor Lin, Leah Ruckle, Karen Wood, Minh Pham *2019*

- Designed genetic algorithms to predict Walker constellation parameters that minimized 98% global dilution of precision

Williams College Department of Computer Science – Research Assistant *Williamstown, MA*

Advisor: Iris Howley *2018*

- Created interactive explainables to teach Bayesian Knowledge Tracing to various levels of understanding to spread algorithmic transparency and interpretability, work was instrumental in NSF Grant #1849984

Gavril Pasternak Lab, Memorial Sloan Kettering Cancer Center – Bioinformatics Intern *New York, NY*

Mentor: Takeshi Irie *2017*

- Constructed data models and interactive cladograms to visualize relationships between G-protein coupled receptors splice variants and alternative promoters, signal peptides, and exon abundance

Awards, Fellowships, & Grants

2023 **Conference Travel Fund, International Travel Fund (both for CHI'23)**, Brown University
2021 **CSCW Honorable Mention Award, Impact Recognition Award**, ACM
2020 **Andries van Dam Graduate Fellowship**, Brown University
2020 **Outstanding Undergraduate Researcher Awards Honorable Mention**, CRA
2019 **Computer Science Class of 1960's Scholars**, Williams College
2018 **Summer Science Research Fellowship**, Williams College
2017 **Murphy Family Scholarship**, Williams College

Service

2024 **Paper Reviewer**, CHI
2023 **Session Chair**, CHI
2023 **Paper Reviewer**, CHI, Pacific Graphics
2022 **Student Volunteer**, CHI
2021 **Paper Reviewer**, CHI
2021 **Student Volunteer**, CSCW

Teaching Experience

Fall 2022 **User Interfaces and User Experience**, Graduate TA for Jeff Huang, Brown University
2019-2020 **Algorithm Design and Analysis**, TA for Shikha Singh, Williams College
Fall 2018 **Algorithm Design and Analysis**, TA for William Lenhart, Williams College
Fall 2017 **Data Structures and Advanced Programming**, TA for Andrea Danyluk & Iris Howley, Williams College

Mentoring

’22 - ’23	**Joshua Kong Yang**, Brown HCI Lab
Spring ’22	**Connie Liu**, Brown HCI Lab
Spring ’21	**Sarah Bawabe, Laura Wilson**, Brown HCI Lab
Spring ’21	**Aurora Vo**, ExploreCSR program
Fall ’20	**Ezra Marks**, Brown HCI Lab

Other Skills

Art & Design: [portfolio]