

# tongyu zhou

PHD CANDIDATE · HUMAN-COMPUTER INTERACTION · VISUAL COMPUTING

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## Education

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### Brown University

PH.D. IN COMPUTER SCIENCE

Advisor: Jeff Huang

Providence, RI

2020 - present

### Williams College

B.A. IN COMPUTER SCIENCE AND STATISTICS

Advisor: Iris Howley

Academic Honor Societies: *Sigma Xi, Mu Sigma Rho*

Williamstown, MA

2016 - 2020

### Aquincum Institute of Technology

COMPUTER SCIENCE STUDY ABROAD PROGRAM

Budapest, Hungary

2018 - 2019

## Publications

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*\* denotes equal contribution*

### CONFERENCES

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

**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). [PDF](#)

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). [PDF](#)

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). (**Honorable Mention Award, Impact Recognition Award**) [PDF](#)

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). [PDF](#)

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)

**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). [PDF](#)

### 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

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### **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

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- 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

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- 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

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- 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

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'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: [\[portfolio\]](#)