Zhilin Zhang

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Educational Background

University of Oxford, UK   **10/2022 - 05/2026**

Doctor of Philosophy in Computer Science
Supervisors: Sir Nigel Shadbolt and Jun Zhao

Research Interests:
Human-Computer Interaction, Artificial Intelligence, Web Science
Social Computing, Crowdsourcing, Education, Accessibility

University of Illinois at Urbana-Champaign (UIUC), USA   **01/2017 - 08/2021**

Master of Science in Computer Science (with thesis)
Advisors: Lawrence Angrave and Karrie Karahalios

Bachelor of Science in Computer Science (with thesis)
Awards: Dean's List (2017 - 2020)

Published 7 full papers, graduated with the Highest Honors (GPA: 3.92/4.0)

Relevant Coursework:
Applied Machine Learning, Text Retrieval and Mining, Virtual Reality, Art and Science of Web Programming, Human-Computer Interaction, Experimental Methods for HCI, Social Spaces on the Internet, Database Systems, Distributed Systems, Operating Systems, Data Structures and Algorithms, Computer Architectures, etc.

Project Highlights

Ethical Web and Data Architectures   Oxford   Supervisors: Sir Nigel Shadbolt and Sir Tim Berners-Lee
- Ethical Web and Data Infrastructure in the Age of AI (EWADA) is an ambitious 3-year programme funded by the Oxford Martin School (OMS). Its mission is to reform the concentration of power on the World Wide Web by developing and deploying new forms of technical and legal infrastructure.

ClassTranscribe Team   UIUC   Supervisor: Lawrence Angrave   05/2019 - 08/2021
- ClassTranscribe is a Microsoft sponsored online learning platform (ReactJS, ASP.NET Core)
- Used Python (Pandas, NumPy and SciPy), statistical techniques (e.g., Mann-Whitney tests, chi-square tests), data mining techniques (e.g., k-means clustering), and qualitative analysis techniques (e.g., grounded-theory approach) to analyze behavioral data of 1,894 users totaling more than 5 million interactions
- Studied students' attitudes, behaviors, and learning outcomes from using ClassTranscribe
- **Published 3 papers at SIGCSE [C1] and ASEE [C2, C6]**, and won the **Honorable Mention Awards**

Social Spaces Group   UIUC   Supervisor: Karrie Karahalios   08/2020 - 08/2021
- Applied a grounded-theory approach to code the qualitative data from a 22-participant interview study
- Investigated students' folk theories, interaction strategies, perceived accuracy, satisfaction, and fairness towards an NLP-based grading system
- **Published 1 paper at CHI 2021 [C3]**

Strategic Instructional Innovations   UIUC   Supervisor: Hongye Liu   08/2020 - 08/2021
-   Conducted large-scale surveys and interviews across 49 engineering courses at UIUC
-   Studied how to improve class accessibility for all learners, especially females and students with disabilities
-   **Published 1 paper at ASEE 2021 [C5]**, and won the **3rd Best Paper Awards**

Data and Information Systems Lab   UIUC   Supervisor: ChengXiang Zhai   08/2020 - 08/2021
-   Came up with the original research ideas, designed and implemented the in-class experiments
-   Designed, conducted, and analyzed semi-structured interviews with 18 participants
-   Experimented learnersourcing for improving captions in video-based online learning
-   **Published 1 paper at Educational Technology Research and Development Journal [J1]**

Social Computing Systems Lab   UIUC   Supervisor: Yang Wang   05/2020 - 08/2020
-   Led the design and implementation of a 20-participant user study on an integrated friendsourcing tool that helped visually impaired people with inaccessible web tasks
-   Investigated users' attitudes towards the tool, regarding friendsourcing vs. crowdsourcing, paid vs unpaid, privacy concerns, and impacts on relationship
-   **Published 1 paper at SOUPS 2021 [C4]**

Teaching Experiences

Computer Science Department   Grainger College of Engineering   University of Illinois at Urbana-Champaign
Teaching Assistant, CS 225: Data Structures   Spring 2021
-   Taught 2 discussion/lab sections (45 students in each section)
-   Gave short lectures, graded homework, held office hours
-   Led 15 groups of students on final projects (4 students in each group)
Teaching Assistant, CS 410: Text Information Systems   Fall 2020
-   Moderated final projects, created quiz questions, and held office hours
Course Assistant, CS 498: Art and Science of Web Programming   Spring 2020
Course Assistant, CS 125: Intro to Computer Science   Fall 2017

Service

Reviewer for SIGCSE 2021 and SIGCSE 2022
Undergraduate Admission Interview Assistant for Jesus College, University of Oxford (December 2022)

Skills

Programming Languages: Java, C / C++, Python, C#, MIPS, Haskell, etc.
Web Development: JavaScript, HTML5, CSS3, React.js, Node.js, SQL(MySQL) / NoSQL(MongoDB)
Mobile Development: Android
VR Development: Unity, Oculus
ML Frameworks: Scikit-Learn, PyTorch, TensorFlow

(Publications on the next page)

Publications

(* = Equal Contribution)

CONFERENCE FULL PAPERS

[C6] **Zhilin Zhang***, Bhavya*, Lawrence Angrave, Ruihua Sui, Rob Kooper, Chirantan Mahipal, Yun Huang. (2021, July). How Students Search Video Captions to Learn: An Analysis of Search Terms and Behavioral Timing Data. In *Proceedings of the 2021 American Society for Engineering Education Annual Conference & Exposition.* (**ASEE 2021**)

[C5] Jenny Amos*, **Zhilin Zhang***, Lawrence Angrave*, Hongye Liu*, Yiyin Shen. (2021, July). A UDL-Based Large-Scale Study on the Needs of Students with Disabilities in Engineering Courses. In *Proceedings of the 2021 American Society for Engineering Education Annual Conference & Exposition.* (**ASEE 2021**)
  🎗 3rd Best Paper Award & 2nd Best Diversity, Equity, and Inclusion Paper Award

[C4] Zhuohao Zhang, **Zhilin Zhang**, Haolin Yuan, Natã Barbosa, Sauvik Das, Yang Wang. (2021, August). WebAlly: Making Visual Task-based CAPTCHAs Transferable for People with Visual Impairments. In *Proceedings of the Symposium on Usable Privacy and Security* (pp. 281-298). (**SOUPS 2021**)

[C3] Silas Hsu*, Tiffany Wenting Li*, **Zhilin Zhang**, Max Fowler, Craig Zilles, Karrie Karahalios. (2021, May). Attitudes Surrounding an Imperfect AI Autograder. In *Proceedings of the ACM Conference on Human Factors in Computing Systems* (pp. 1-15). (**CHI 2021**)

[C2] Lawrence Angrave, Karin Jensen, **Zhilin Zhang**, Chirantan Mahipal, David Mussulman, Christopher Schmitz, Robert Baird, Hongye Liu, Ruihua Sui, Maryalice Wu, and Rob Kooper. (2020, June). Improving Student Accessibility, Equity, Course Performance, and Lab Skills: How Introduction of ClassTranscribe is Changing Engineering Education. In *Proceedings of the 2020 American Society for Engineering Education Annual Conference & Exposition*. (**ASEE 2020**)
  🎗 Best Diversity, Equity & Inclusion Paper Honorable Mention

[C1] Lawrence Angrave, **Zhilin Zhang**, Genevieve Henricks-Lepp, and Chirantan Mahipal. (2020, February). Who Benefits? Positive Learner Outcomes from Behavioral Analytics of Online Lecture Video Viewing using ClassTranscribe. In *Proceedings of the ACM Symposium on Computer Science Education* (pp. 1193-1199). (**SIGCSE 2020**)

JOURNAL FULL PAPERS

[J1] Bhavya*, Si Chen*, **Zhilin Zhang***, Tiffany Wenting Li, ChengXiang Zhai, Lawrence Angrave, Yun Huang. Advancing Learnersourced Caption Editing for Video-Based STEM Education. (**Educational Technology Research and Development Journal, 2022**)

THESES

[T2] **Zhilin Zhang**. Attitudes, Behaviors, and Learning Outcomes from Using ClassTranscribe, a UDL-Featured Video-Based Online Learning Platform with Learnersourced Text-Searchable Captions. (Master's Thesis, University of Illinois at Urbana-Champaign, 2021)

[T1] **Zhilin Zhang**. What Benefits? Exploring the Influences of Student Behaviors in Video-Based Online Learning. (Undergraduate Senior Thesis, University of Illinois at Urbana-Champaign, 2020)

WORKSHOPS, PANELS, POSTERS, TALKS

[O5] Silas Hsu, **Zhilin Zhang**, and Karrie Karahalios. Tired of Bad Recommendations? A Design to Better Steer Your Feeds Inspired by Version Control. In *2021 Human Computer Interaction Consortium (HCIC) Virtual workshop.*

[O4] Tiffany Wenting Li*, Silas Hsu*, **Zhilin Zhang**, Craig Zilles, and Karrie Karahalios. Exploring Students' Control over Imperfect AI Autograders. In *2021 Human Computer Interaction Consortium (HCIC) Virtual workshop.*

[O3] Kendra Walther, Hongye Liu, Lawrence Angrave, Erin Carrier, **Zhilin Zhang**, Harsh Deep. Understanding the Needs of Students with Disabilities based on Universal Design for Learning Principles. In *2021 CMD-IT/ACM Richard Tapia Celebration of Diversity in Computing Conference.*

[O2] Hongye Liu, Jennifer Amos, Kusum Vanwani, **Zhilin Zhang**, Lawrence Angrave. Qualitative analysis of college students' perception of multiple representations and modalities in courses. In *2021 ASEE Illinois-Indiana Section Conference Proceedings*.

[O1]   **Zhilin Zhang**, Lawrence Angrave. 2020. ClassTranscribe: Addressing the COVID Challenge and Promoting Better Equity in Education. In *Computing Research Association (CRA) Virtual Conference 2020.*