Zixin (Nicole) Zhao

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RESEARCH AREA

Human Computer Interaction (HCI), Visualization, Natural Language Processing (NLP)

EDUCATION

Started Sep 2023
Doctor of Philosophy, Computer Science
University of Toronto
Supervisors: Fanny Chevalier and Gerald Penn

2023
Master of Science, Computer Science
Ontario Tech University
Supervisor: Dr. Christopher Collins
Thesis: *Gloss Positioning for a Gaze Aware L2 Reading Aid [link]*

2021
Bachelor of Science, Electric Engineering major and Computing Science minor
University of Alberta

RESEARCH EXPERIENCE

Sep 2023 to Present
Research Assistant, DGP and CL Lab, University of Toronto
Supervisor: Fanny Chevalier and Gerald Penn
Prototyping a GPT assisted writing support tools for creative writers using React, Vue.js, D3.js. Designing, running, and analyzing participant studies. Developing and evaluating NLP pipelines using LLAMA 3 for story text generation and summary generation.
Topics: Automatic Summarization • Writing Support Tools • Applications of LLMs

Sep 2023 to Apr 2024
Research Associate, vialab, Ontario Tech University
Supervisor: Christopher Collins
Qualitative analysis of an interactive visualization for a visual analytics system for advisors aid analytics system for machine learning output interpretation.
Topics: Qualitative Analysis • Learning Analytics • Interactive Visualization

May 2021 to Aug 2023
Research Assistant, vialab, Ontario Tech University
Supervisor: Christopher Collins
Thematic analysis of text data from a mental health based visualization tool. Prototyping and testing an eye tracking based reading tool for language learners using mainly Electron with JavaScript libraries.
Topics: Eye Tracking • Language Learning • Mental Health Chatbot • Visualization

Jun 2019 to Apr 2021
Research Assistant, EdTeKLA, University of Alberta
Supervisor: Carrie Demmans Epp
Full-stack development for CreeTutor, a language learning system for Plains Cree (y-dialect). Building interactive family tree visualizations. Annotated dataset for negative language transfer of Chinese ESL learners
Topics: Language Learning • Negative Language Transfer • Visualization

| May 2018 to
Dec 2018 | **Research Assistant**, Machine Intelligence Group, University of Western Australia
Supervisor: Ajmal Mian
Building and training deep models to approximate apparent age of human faces using rendered 3D faces with tensorflow and keras.
Topics: Deep Learning • Fine Tuning • Computer Vision |

TEACHING EXPERIENCE

Jan 2025 to Present	**Teaching Assistant**, University of Toronto • CSC 316 (Data Visualization: Foundations and Advanced Programming)
Sep 2024 to Dec 2024	**Teaching Assistant**, University of Toronto • STA 313 (Data Visualization) • CSC 485 (Computational Linguistics) **Project Supervisor**, University of Toronto • CSC 495 (Undergraduate Research Project: *Narrative Structure of Fanfictions*) **Instructor**, Her Code Camp • Curriculum developer and instructor for a 6 week program titled "*Hey Chat, Code Bits for Cute Fits*"
Sep 2023 to Apr 2024	**Teaching Assistant**, University of Toronto • CSC 2537 (Graduate Seminar: Information Visualization; Fall 2023 and Winter 2024 sessions) **Graduate Mentor**, University of Toronto • PRISM: Preparation for Research through Immersion, Skills, and Mentorship
Dec 2021 to Apr 2023	**Teaching Assistant**, Ontario Tech University • CSCI 4160 (Interactive Media - Introduction to Unity) • CSCI 4210 (Information Visualization) • CSCI 4620 (Human Computer Interaction)
Jan 2018 to Aug 2023	**Tutor**, University of Alberta • High school math and physics (Alberta curriculum) • University level introduction programming languages (Python, C/C++, MATLAB) • First and second year courses in calculus and physics
May 2017 to Aug 2017	**Summer Instructor**, DiscoverE • Course curriculum development for STEM classes aimed at Grade 9 students in Alberta and the Northwest Territories

PUBLICATIONS, PEER REVIEWED

R. Weagant, **Z. Zhao**, A. Bradley, C. Collins. (2024) AdVizor: Using Visual Explanations to Guide Data-Driven Student Advising. *EduVis 2024: IEEE VIS Workshop on Visualization Education, Literacy, and Activities*.

C. Collins, S. Arbour, N. Beals, S. Yama, J. Laffier, **Z. Zhao**. (2022) Covid Connect: Chat-Driven Anonymous Story-Sharing for Peer Support. *DIS '22: Designing Interactive Systems Conference*. 301-318. https://doi.org/10.1145/3532106.3533545

F. L. Wanderly, **N. Zhao**, and D. C. Epp. (2021) Negative language transfer in learner English: A new dataset. *NAACL-HLT 2021*. 3129–3142, https://doi.org/10.18653/v1/2021.naacl-main.251

WORKS IN PROGRESS

Making the Write Connections: Linking Writing Support Tools with Writer Needs, Long Paper, Submitted to *CHI 2025*

Can Large Language Models Summarize Long Narratives? A Study of Holistic versus Segmented Story Summarization, Long Paper, To be submitted to *ACL 2025*

Visual Writing: Writing by Manipulating Visual Representations of Stories, Long Paper, To be submitted to *UIST 2025,* https://arxiv.org/abs/2410.07486

PRESENTATIONS AND POSTERS

Z. Zhao, J. Bo, K. Singh, (2024) *Make it Happier! Discretizing and Amplifying Happiness in Animated Faces.* GI 2024. [Poster] Halifax, NS, Canada. [link]

Z. Zhao (2022). *Work in Progress: Exploration of glosses for gaze enhanced language learning applications.* 10 min [Conference presentation]. CAN-CWIC, Toronto, ON, Canada.

O. McLeod, **Z. Zhao**, A. Sparrow, D. Lothian, K. Richards, G. Akcayir, C. Demmans Epp, (2021) *Helping Revitalize Plains Cree with User Centered Design.* ReverseEXPO. [Poster] Edmonton, AB, Canada. [link]

M. Yousef, E. Whitby, **N. Zhao** (2020) *Energy Monitoring System for a Transactive Market*. 15 min [Presentation] IEEE Capstone Scholarship Winners. Edmonton, AB, Canada.

AWARDS AND SCHOLARSHIPS

Nov 11, 2023   Faculty of Arts and Science Program Level Fellowship
 Value: $1000

Apr 1, 2020   IEEE Capstone Award
 value: $2000

Sep 1, 2018   Queen Elizabeth II Scholars (QES) Scholarship
 Value: $6000

RELEVANT ACTIVITIES

2024   Panelist, Web-Based Surveys - Battling the Bots, Research Roundtable Series

2024   Judge, GenAI Genesis Hackathon

2023 - Present   Social Coordinator, Computer Science Graduate Students (CSGS)

2017 - 2020   Mentor, DiscoverE