Akib Zaman

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As a Ph.D. student specializing in **Human-Computer Interaction**, I bring a strong research background in data-centric methods for machine learning models. I am enthusiastic about pursuing a role in AI research and development to apply my skills in data analysis, HCI, and software development, with the goal of promoting innovation and advancing the field.

Education

Jan 2018 - Present **Ph.D. Candidate, Computer Science**
Human-Computer Interaction x Machine Learning
University of Texas at Arlington, Arlington, Texas
Advisor: César Torres · Lab: Hybrid Atelier
Department of Computer Science and Engineering

Aug 2013 - Aug 2017 **Bachelor of Science, Computer Science**
(Minor in Mathematics)
University of Texas at Arlington, Arlington, Texas
Magna Cum Laude

Work Experience

May 2021 - Aug 2021 **Graduate Intern**
Dell Technologies Inc. [Customer Experience Subdivision]
Austin, Texas (Remote)
Manager: Ramesh Ramanathan (Austin)

June 2020 - July 2020 **Graduate Intern**
Dell Technologies Inc. [Infrastructure Solutions Group]
Austin, Texas (Remote)
Manager: Rosemary Lynch (Ireland) · Mentor: Dr. Jenwei Hsieh (Austin)

Research Experience

Feb 2020 - present **Graduate Research Assistant**
Hybrid Atelier · Director: César Torres
HCI, Department of Computer Science and Engineering

- Developed and implemented innovative research methodologies for dissecting biases within datasets and their impact on machine learning models
- Designed and deployed data collection systems and techniques that laid the foundation for robust and repairable deep learning models
- Conducted user studies to assess the usability and effectiveness of various research interventions, contributing to user-centered design and informed decision-making

Jan 2018 - Jan 2020 **Graduate Research Assistant**
MIND Lab • Director: Dajiang Zhu
Brain Imaging, Department of Computer Science and Engineering

- Performed in-depth data and image analysis of brain images (MRI, fMRI)
- Developed innovative approaches to integrate multi-modal brain imaging data for a comprehensive understanding of brain structure and function

Jun 2017 - Oct 2017 **Undergraduate Research Assistant**
SMILE Lab • Director: Junzhou Huang
Medical Imaging, Department of Computer Science and Engineering

- Implemented and fine-tuned Convolutional Neural Networks (CNNs) for the automated detection and segmentation of cell structures in medical images.

Peer-Reviewed Papers

[1] **Akib Zaman**, César Torres. "Fishing with Neural Nets: Analyzing Dataset and Model Bias through an Ecological Tag-and-Release Method." ACM Conference on Designing Interactive Systems (DIS), 2024 [Under Review].
[2] **Akib Zaman**, Shreyosi Endow, Nasir Rakib, and César Torres. "BraidFlow: A Flow-annotated Dataset of Kumihimo Braidmaking Activity." ACM Designing Interactive Systems (DIS), 2023.
[3] **Akib Zaman,** L. Zhang, J. Yan, and D. Zhu. "Multi-Modal Image Prediction via Spatial Hybrid U-Net." Multiscale Multimodal Medical Imaging (held in conjunction with MICCAI), 2019. [15% acceptance rate]. ***Best Student Paper Award***
[4] L. Zhang, **Akib Zaman**, L. Wang, J. Yan, and D. Zhu. "A Cascaded Multi-Modality Analysis in Mild Cognitive Impairment." Machine Learning in Medical Imaging (held in conjunction with MICCAI), 2019.

Research Projects

[1] *"Hum, Rattle and Purr – Ad hoc Sonic Activity Logging and Modeling for Smart Workshop Environments."* A flexible audio-logging system for a glass coldworking studio, prioritizing data collection to create robust deep learning models and enhance workshop efficiency.
[2] *"DuckCheck: Towards Tangible and Connected Debugging Support Tools."* A Hybrid Debugging Environment (HDE) that extended traditional programming environments to incorporate physical space and body interactions, providing insights into programmer behaviors.
[3] *"LadderBot: Understanding Learner Perceptions and Behaviors with Virtual Users in Interview Training."* An exploration of virtual users (AI agents) into interview training, comparing voice/video and text-based interactions to understand their impact on the learning experience.

Technical Skills

Machine Learning	Image Processing (CNN, RNN, LSTM), Natural Language Processing
Programming	Python [Numpy, Pandas, Matplotlib, Seaborn, SciPy, TensorFlow, PyTorch, Keras, Neurokit], Google Colaboratory, Jupyter, Websocket, HTML
Design	Adobe Photoshop, Adobe Premiere Pro, Adobe Illustrator, Figma

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Other Research Activity

Workshop

César Torres, **Akib Zaman**. [MosAIc] Tuning Large Language Models for Creative Bricolage. OurCS@DFW, 2024.

César Torres, **Akib Zaman**. Flow Triggers - Designing Interactions for Inducing or Sustaining Experiences of Flow in Braidmaking Tasks. OurCS@DFW, 2023.

David Levine, **Akib Zaman**. CloudMining: Building a Cloud-based, Secure, Scalable, Data Analytic Web Application. OurCS@DFW, 2021.

Talks

Akib Zaman. BraidFlow: A Flow-annotated Dataset of Kumihimo Braiding.
Lightning Talk, 50th Anniversary of Computing at UTA, 2023.

Akib Zaman. Shallow Learning: Glancing into the current and future prospects of Machine Learning.
Guest Lecture, Department of Computer Science and Engineering, UTA, 2021.

Akib Zaman. Harmonizing the Makerspace: Envisioning Adaptive Interactive Feedback Systems. [link]
Seminar Speaker, TxHCI Seminar, 2021.

Poster

Shreyosi Endow, **Akib Zaman**, An Nguyen. Re-examining the Familiar Stranger in the Hybrid Classroom through Internet of Things Interactions. Social Connections Conference. 2021.

Teaching

Teaching Assistant

Department of Computer Science, UT Arlington
CSE 6363: Machine Learning [50 students, *1 semester*]
CSE 5334: Data Mining [45 students, *2 semesters*]
CSE 3320: Operating Systems [50 students, *5 semesters*]
CSE 1320: Intermediate Programming [60 students, *2 semesters*]

Lead TA

CSE 3320: Operating Systems [75 students, *2 semester*]

Service

Volunteer

Student Volunteer, Designing Interactive Systems (DIS 2021)
Student Volunteer, Medical Image Computing and Computer Assisted Interventions (MICCAI 2019)

Reviewer

The ACM Conference on Human Factors in Computing Systems (CHI)
ACM Designing Interactive Systems (DIS)
Medical Image Computing and Computer Assisted Intervention (MICCAI)
Computer-Supported Cooperative Work & Social Computing (CSCW)

Mentorship

Mentor, Undergraduate Research Studios, Hybrid Atelier
[2020 - 2023]
Department of Computer Science and Engineering, UT Arlington

Mentorship **Graduate Mentor**, NSF REU Hybrid Design and Fabrication Site
[2022, 2023]
Department of Computer Science and Engineering, UT Arlington

Awards and Scholarships

2023 **Honorable Mention, Lightning Talk**
50th Anniversary of Computing at UTA
University of Texas at Arlington

2021 **Cyneta Networks Outstanding Graduate Teaching Assistant Award**
Department of Computer Science & Engineering
University of Texas at Arlington

2019 **Graduate Studies Travel Grant**
College of Engineering, University of Texas at Arlington

2019 **Best Student Paper Award**
MMMI (held in conjunction with MICCAI)
Shenzhen, China

2013 - 2017 **Maverick Academic Scholarship**
University of Texas at Arlington

2013 **ExxonMobil Computer Science Scholarship**
University of Houston

Leadership

2018 - 2020 **Mentor,** *Maverick Billiards Club*
University of Texas at Arlington

2017 – 2018 **Vice President,** *Texas Intercollegiate Badminton Association*
Texas, USA

2016 - 2017 **Secretary,** *Texas Intercollegiate Badminton Association*
Texas, USA

2015 - 2018 **President,** *Badminton Sport Club, University of Texas at Arlington*

References

Dr. César Torres **Assistant Professor**, *University of Texas at Arlington*
email: cearto@uta.edu

David Levine **Distinguished Senior Lecturer**, *University of Texas at Arlington*
Associate Chairperson, *Computer Science and Engineering*
email: davel@uta.edu

Dr. Jenwei Hsieh **System Engineer Director**, *Dell Technologies Inc. (Austin, TX)*
email: Jenwei_Hsieh@Dell.com

Rosemary Lynch **Data Scientist, Consultant Program Manager**, *Dell EMC (Cork, Ireland)*
email: Rosemary_Lynch@Dell.com