

Kazi Noshin

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Research Interest

Human-Computer Interaction – Human Well-being – ICTD – CSCW – Computational Social Science – Social Computing – Human-centered ML Design – Ethics

Education

University of Virginia

M.S. in Computer Science

- Current GPA: 4.00/4.00

Charlottesville, VA, USA

August 2023 – December 2025

Bangladesh University of Engineering and Technology (BUET)

Bachelor of Science in Computer Science and Engineering

- CGPA: 3.68/4.00
- Last two-year CGPA: 3.84/4.00

Dhaka, Bangladesh

Feb 2017 – May 2022

Research Experience

Autism Caregiving Strategies: Informal Knowledge and Experience Shared on Reddit

(Manuscript under processing)

June 2025 - Present

Mentor: Dr. Sharifa Sultana (Assistant Professor, UIUC)

Collaborator: Dr. Karrie Karahalios (Professor, UIUC)

- Employing Statistical and Thematic Analysis to examine the strategies caregivers follow to address various challenges faced by children with autism.

Understanding the Gaps of Capturing Cultural Context by LLM Interpretation

June 2025 - Present

Mentor: Dr. Syed Ishtiaque Ahmed (Associate Professor, University of Toronto)

- Conducting qualitative research to investigate how much cultural contextual information large language models (LLMs) can capture from input.

Alzheimer's Disease Prediction with Deep Learning approaches (MS Thesis)

(Graduate Research Assistant at University of Virginia)

August 2023 - October 2025

Supervisor: Dr. Aidong Zhang (Professor, University of Virginia)

External Collaborators: Dr. Li Shen (Professor, University of Pennsylvania), Dr. Mary Regina Boland (Assistant Professor, Saint Vincent College, USA)

Earthquake Early Warning System using Graph Neural Network

(Research Assistant at BUET-Japan Institute of Disaster Prevention and Urban Safety)

July 2022 - Jan 2023

Supervisor: Dr. Mohammed Eunus Ali (Professor, BUET)

Automated Analysis of Parkinson's Disease (PD) Characteristics and Severity

2021 - 2022

Based on Videos Collected via a Web-based Platform (B.Sc. Thesis) (PDF)

Supervisor: Dr. Mohammad Saifur Rahman (Professor, BUET)

External Collaborators: Dr. Ehsan Hoque (University of Rochester), Dr. Imran Sarker (NINH, BD)

Actionable Analytics of Cancer

2021-2023

Supervisor: Dr. Mohammad Saifur Rahman (Professor, BUET)

External Collaborator: Dr. Abu Zafer Mohammed Dayem Ullah (Barts Cancer Institute, UK)

- Identifying the association of various clinical or molecular factors with the survival of patients diagnosed with cancers.

Publications

IRIS: Interpretable Risk Clustering Intelligence for Survival Analysis (Currently Under Review, Submitted to IEEE BigData conference)

Authors: **Kazi Noshin***, Bojian Hou*, Mary Regina Boland, Zixuan Wen, Boning Tong, Li Shen, Aidong Zhang

2025

- This study introduces IRIS, a novel framework that enhances risk clustering and interpretability in survival analysis.
- It demonstrates superior risk stratification across benchmark and real-world datasets, including Alzheimer's disease and EHR data.

AI-Enabled Parkinson's Disease Screening Using Smile Videos ([Link](#))

NEJM AI

Authors: Tariq Adnan, Md Saiful Islam, Sangwu Lee, EM Wasifur Rahman Chowdhury, Sutapa Dey Tithi, **Kazi Noshin**, Md Rayhanul Islam, Imran Sarker, M Saifur Rahman, Ruth B Schneider, Jamie L Adams, E

2025

Ray Dorsey, Ehsan Hoque

- This study presents an AI-driven method for screening Parkinson's disease by analyzing facial expression videos, specifically focusing on smiles.
- It demonstrates high accuracy and generalizability across different populations using ML models trained on facial features, suggesting a scalable and accessible tool for PD screening when clinical access is limited.

Uncovering Important Diagnostic Features for Alzheimer's, Parkinson's and Other Dementias Using Interpretable Association Mining Methods ([Link](#))

Pacific Symposium on
Biocomputing (PSB)

Authors: **Kazi Noshin***, Mary Regina Boland*, Bojian Hou, Victoria Lu, Carol Manning, Li Shen, Aidong Zhang

2024

- This study leverages Electronic Health Records (EHR) to identify important predictive features for Alzheimer's Disease and Related Dementia (ADRD) using various Machine Learning methods.

Determining the Importance of Clinical Modalities for NeuroDegenerative Disorders, Alzheimer's Disease, and Risk of Patient Injury Using Machine Learning and Survival Analysis ([Link](#))

AMIA Informatics Summit

Authors: **Kazi Noshin***, Mary Regina Boland*, Bojian Hou, Weiqing He, Victoria Lu, Carol Manning, Li Shen, Aidong Zhang

2024

- This study examines the role of Machine Learning in survival analysis for predicting fall-related injuries among elderly patients with NDD.
- It finds that combining medication and laboratory data improves prediction performance while mitigating racial biases in risk estimation.

Integrating Social Determinants of Health in a Multi-Modal Deep Clustering Survival Model for Injury-Risk in Alzheimer's and Related Dementia Patients ([Link](#))

AI for Medicine and Healthcare (AAAI
Bridge Program)

Authors: **Kazi Noshin***, Mary Regina Boland*, Bojian Hou, Weiqing He, Victoria Lu, Carol Manning, Li Shen, Aidong Zhang

2024

- This study reveals that SDOH improves the performance of a deep clustering survival model, with laboratory data outperforming medications in predicting fall risk.
- It finds that education is a key SDOH factor, underscoring its significance in Alzheimer's Disease progression.

Teaching Experience

University of Virginia

Charlottesville, VA, USA

Graduate Teaching Assistant

- **Courses Assisted:**
 - CS 6205: Research Methods in Human-Computer Interaction (Fall 2025)
 - CS4501: HCC for Digital Well-Being (Summer 2025)
 - CS 6316: Machine Learning (Fall 2024)
- **Responsibilities:**
 - Grading assignments and provided feedback.
 - Leading weekly office hours and supported students on Piazza.

University of Asia Pacific

Dhaka, Bangladesh

Lecturer (Full-time)

Aug 2022 - June 2023

- **Courses Taught:**
 - Introduction to CS and Programming Methodology • Structured Programming (C) • Data Structures • Software Development
- **Responsibilities:**
 - Efficient planning of assignments to enhance the student's ability to understand computer basics.

Course-Based Projects

Webfitt Study

HCI Project ([Github link](#))

2023

- In this study, we conducted a within-subject experiment with four participants using the Webfitt platform and analyzed the collected data to draw quantitative and qualitative insights.
- Language: Python

SHIKHON - The Admission Helper

Software Development Project ([Github link](#))

2021

- The targeted users of the platform is University Admission Candidates and the purpose of the application is to provide tutorials, notes, and solutions about a particular topic of a particular subject. The main challenge of this project is to learn how to build an interactive live application.
- Language : Javascript, Library : NodeJS, Database : MongoDB, Frontend : React Native JS

Skills

Programming Python, R, C/C++, Javascript
Frameworks PyTorch, Keras, React-Native
Libraries Pandas, NumPy, Matplotlib, SciPy, Scikit-Learn, OpenFace
Tools/Software Git, GitHub Actions, Hugging Face, Microsoft Word, PowerPoint, Excel, MATLAB, Latex
Database MongoDB

References

Aidong Zhang Professor, Computer Science, UVA, email: aidong@virginia.edu
Mary Regina Boland Assistant Professor, Data Science in Mathematics, Saint Vincent College, Latrobe, PA, USA, email: mary.boland@stvincent.edu