# Kazi Noshin

*Apt 6, 324 Peyton Court, Charlottesville, Virginia-22903, USA*

+14347607377 | kazi.noshin.111@gmail.com | noshinxd.github.io/KN_portfolio/ | github.com/NoshinXD | Google Scholar


## Research Interest

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

## Education

**University of Virginia** — *Charlottesville, VA, USA*

M.S. in Computer Science — *August 2023 – December 2025*

- Current GPA: 4.00/4.00

**Bangladesh University of Engineering and Technology (BUET)** — *Dhaka, Bangladesh*

Bachelor of Science in Computer Science and Engineering — *Feb 2017 – May 2022*

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

## Publications

**Why is It Funny?: Contrasting Human and LLM Reasonings in Understanding Internet Memes (**Currently Under Review, Submitted to IUI 2026**)**

Authors: Mitrasree Deb*, **Kazi Noshin***, Repon Kumar Roy, Syed Ishtiaque Ahmed — *2025*

- In this study, we compared how humans LLMs interpret humor in English and Bengali memes using quantitative and qualitative analyses.
- Using the Meaning Framework and Humor Transaction Schema, we identified cognitive and cultural gaps in their humor comprehension.

**IRIS: Interpretable Risk Clustering Intelligence for Survival Analysis** — *IEEE BigData*

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 Ray Dorsey, Ehsan Hoque — *2025*

- 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.

## Research Experience

**Autism Caregiving Strategies: Informal Knowledge and Experience Shared on Reddit** — *June 2025 - Present*

(Manuscript under processing)

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 the challenges faced by children with autism.

**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 Based on Videos Collected via a Web-based Platform** (B.Sc. Thesis) **(**PDF**)** *2021 - 2022*
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.

# Teaching Experience

**Universiy of Virginia** *Charlottesville, VA, USA*
Graduate Teaching Assitant
- **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

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| **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