ABDULLAH AL MAMUN

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RESEARCH INTERESTS

Deep Learning, Mobile Health, Time-Series Forecasting, Semi-Supervised Learning, Computer Vision

EDUCATION

Doctor of Philosophy - Computer Science   **Expected May 2026**

Arizona State University   **GPA: 3.95**

- Advisor: Dr. Hassan Ghasemzadeh
- Selected courses: Reinforcement Learning, Embedded Machine Learning, Planning and Learning in AI, Knowledge Representation, Image Analytics & Informatics (completed 36 credit hours of coursework)

Bachelor of Science - Computer Science and Engineering   **October 2018**

Bangladesh University of Engineering and Technology   **GPA: 3.70**

- Thesis: Comparative Analysis of Modern Garbage Collectors for Big Data in Distributed Systems
- Selected courses: Data Structures, Algorithms, Compilers, Operating Systems, Microprocessors and Microcontrollers, Computer Architecture

PUBLICATIONS

Neonatal Risk Modeling and Prediction. *A. Mamun, C.-C. Kuo, D. W. Britt, L. D. Devoe, M. I. Evans, H. Ghasemzadeh, & J. Klein-Seetharaman. IEEE Conference on Body Sensor Networks (BSN 2023)*

Multimodal Time-Series Activity Forecasting for Adaptive Lifestyle Intervention Design. *A. Mamun, K. S. Leonard, M. P. Buman, & H. Ghasemzadeh. IEEE Wearable and Implantable Body Sensor Networks (BSN 2022)*

Designing Deep Neural Networks Robust to Sensor Failure in Mobile Health Environments. *A. Mamun, S. I. Mirzadeh, & H. Ghasemzadeh. IEEE Engineering in Medicine and Biology Conference (EMBC 2022)*

EXPERIENCE

Graduate Research Associate   **December 2021 - Present**

Arizona State University   **Phoenix, Arizona**

- Implemented clustering technologies to automatically create optimal number of groups for similar labels.
- Developed multimodal forecasting tools with early and late fusion methods for predicting completion of next-day activity goal of a person in advance with 81% accuracy.
- Developing risk analysis tools for predicting risk of neurological impairments in newborn children and suggesting intervention methods to minimize risk by analyzing 200,000+ labor cases.
- Developed and maintained data collection platforms, such as APIs for servers and features on smartphone apps. Prepared IRB protocol submissions, data access requests, and conducted user studies.

Teaching and Research Assistant   **January 2021 - December 2021**

Washington State University   **Pullman, Washington**

- Prepared and submitted a conference paper. Mentored undergraduate research. Helped over 100 students with homework and programming assignments in Advanced Data Structures C/C++, taught by Dr. Yan Yan.

Lecturer   **September 2019 - January 2021**

United International University   **Dhaka, Bangladesh**

- Taught five theoretical undergraduate courses: Software Engineering, Object-Oriented Programming, Digital System Design, Structured Programming Language, and System Analysis and Design.

Software Developer   **November 2018 - September 2019**

HLC Technologies Limited   **Dhaka, Bangladesh**

- Developed cybersecurity solutions for Windows, MacOS, Ubuntu, and CentOS platforms, patch management and configuration monitoring tools, and online learning management systems.
- Reduced data transfer overhead by more than 90% after converting a query-based system to an alert reporting system. Developed tools and tutorials for easy deployment of software solutions on new servers.

- Led daily stand-up meetings. Implemented new features every sprint. Reviewed code and fixed bugs in large projects written by other developers.

SKILLS

Machine Learning: Tensorflow, Keras, PyTorch Scikit-learn, CNN, LSTM, Label Spreading, Clustering, GradCAM
Software Development: Python, Java, C, C++, ReactJS, Shell, Hadoop, Android, MySQL, Oracle SQL, 8086 Assembly Language Programming
Critical Reasoning: GRE General Test (2019): Quant - 166 (P86), Verbal - 156 (P72), Writing - 4.0 (P54)
Communication Skills: Full professional proficiency in English.

AWARDS & HONORS

- Invited Talk: Time-Series Wearable Activity Forecasting at ASU Machine Learning Day (2023)
- Best paper (honorable mention) award at the IEEE BSN 2022 conference (2022)
- 19th position at Bengali Handwritten Digit Recognition challenge by Bengali.ai (2018)
- University Merit List Scholarship by Bangladesh University of Engineering and Technology (2017)