

AFSARA BENAZIR

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EDUCATION

University of Virginia, School of Engineering and Applied Science

PhD. In Computer Science

Supervisor: [Dr. Felix Xiaozhu Lin](#)

August 2022-Present

CGPA: 3.90/4.00

Bangladesh University of Engineering and Technology (BUET)

BSc. In Computer Science and Engineering

Supervisor: Dr. Sadia Sharmin

Mar 2016-Feb 2021

Last term GPA: 3.96/4.00

Major CGPA: 3.56/4.00

CGPA: 3.19/4.00

WORK EXPERIENCE

Department of Computer Science, University of Virginia

Charlottesville, VA

- Graduate Research Assistant

August 2022-Present

- Graduate Teaching Assistant

Fall'23: CS4414 Operating Systems, Spring'24: CS 6501 Natural Language Processing

Systems, Solutions and Development Technologies (SSD-Tech)

Dhaka, Bangladesh

- Engineer, Technology

March 2021-July 2022

Developed features for an e-commerce website using Laravel Framework

RESEARCH AREA

Systems x Machine Learning, Foundation LLMs, On-Device Execution, User Privacy

PUBLICATIONS

- [Afsara Benazir](#), [Zhiming Xu](#), [Felix Xiaozhu Lin](#). **Speech Understanding on Tiny Devices with A Learning Cache** (Mobisys'24)

We integrate on-device execution with cloud offloading to understand human like speech in a \$5 MCU at 1.5MB memory with 75% faster latency [[PDF](#)]

- [Afsara Benazir](#), [Zhiming Xu](#), [Felix Xiaozhu Lin](#). SpeechShield: Safeguarding Privacy in edge Speech Understanding with Tiny Foundation Models (*under review*)
- [Afsara Benazir](#), [Sadia Sharmin](#). Credibility assessment of User Generated health information of the Bengali language in micro blogging sites using NLP techniques and Machine Learning, Workshop [paper](#) at the 2020 IEEE/WIC/ACM International Joint Conference on Web Intelligence and Intelligent Agent Technology (WI-IAT'20)

POSTER

- [Afsara Benazir](#) and [Felix Xiaozhu Lin](#). Maximizing the Capabilities of Tiny Speech Foundation Models in a Privacy Preserving Manner (MobiCom'24)

ACADEMIC PROJECTS

Moving [Cube Game](#) with interactive sound effects (2023)

- Designed and implemented a handheld game on the TM4C123G MCU and Booster Pack MKII fulfilling the constraints of RTOS including multi-threading and deadlock prevention, using C and Arm Keil Studio IDE

[Adaptive Step Tracking](#) using Smartwatch for Smart Health Application (2023)

- Collected and evaluated data to design a closed loop feedback system using WaDa app and WEKA classifier

[BetterSound](#): a real time location based noise alert android application (2022)

- Notifies users to avoid historically noisy areas built using Java Frontend and Firestore Database in Backend

TECHNICAL SKILLS

Languages: Python, C/C++, Java, Bash, SQL, PHP, HTML/CSS, Assembly (8086)

Framework/Libraries: PyTorch, HuggingFace, PEFT, Pandas, Numpy, soundfile, NLTK, Laravel, Django

Software: STM32CUBE IDE, Arm Keil IDE, Atmel Studio, Cisco Packet Tracer, Wireshark, Proteus, MATLAB

Miscellaneous: STM32F7 Booster Pack, xv6, Linux

ACHIEVEMENTS

- Faculty choice award at the poster presentation session of UVa CSGSG Research Symposium (2023) [poster](#)
- HPCI selected participant at The International Conference for High Performance Computing, Networking, Storage, and Analysis (SC'20)
- Undergraduate University Merit Scholarship in Level 4/Term 1 (March 2020)
- Undergraduate ABI student scholar at Grace Hopper Celebration of Women in Computing (GHC'19)

LEADERSHIP

Mentorship Aug'24-Dec'24

- Mentoring 2 Charlottesville high school students in developing an engineering capstone project. [\(news article\)](#)

BUET Debating Club 2017-2020

- Positions: Director (2019-2020), Logistics Secretary(2018-2019), Information Secretary (2017-2018)
- In charge of organizing debate tournaments, weekly practice sessions, reaching out to 1000+ school and college and university students over the years

BSADD (BUET system analysis, design and development community) May'20 – Dec'20

- Co-ordinator - Planned and organized webinars of the segment Women in Tech

BWCSE (Bangladeshi Women in Computer Science and Engineering) 2020-2021

- Member of advising committee