Tabassum Mahmud

tmahmud@iastate.edu | linkedIn/Tabassum Mahmud | github/mahmudtabassum

EDUCATION

Ph.D. Student in Computer Engineering Fall2019-Present
Iowa State University GPA:3.73/4
Ames, IA

B.Sc. in Electrical and Electronic Engineering Mar2013-Dec2017
Chittagong University of Engineering and Technology GPA:3.71/4
Bangladesh

EXPERIENCE

Research Assistant-Data Storage Lab, ECpE, ISU Fall2019 - Present

- Surveyed existing techniques for bug detection, e.g. Static Analysis, Dynamic Analysis (Fuzzing), Symbolic Execution (S2E, KLEE).
- Explored configuration related issues in the storage stack and storage applications.

Teaching Assistant ECpE, ISU Spring2023 - Present

- CprE 308: Operating System

Network Engineer-Fiber@Home, Dhaka, Bangladesh Mar2018 - Nov2018

- Worked in the integration section of Info-Sarkar-III project.

RESEARCH INTEREST

Storage Systems, Systems Reliablitiy, Distributed Systems

RESEARCH PROJECT

- Configuration bug detection in the storage stack and storage applications
  In this project, we studied configuration bugs in the storage stack and identified the pattern and critical cross-component configuration dependencies. Our aim is to identify the critical cross-component dependencies in the storage stack automatically and use those to check the behavior of the programs when following and violating the dependencies. (To appear in FAST 2023)

PUBLICATIONS

- Analyzing Configuration Dependencies of DAX File Systems. *To appear* Tabassum Mahmud, Om Rameshwar Gatla, Duo Zhang, Carson Love, Ryan Bumann and Mai Zheng.
  14th Annual Non-Volatile Memories Workshop (NVMW), 2023.
- Drill: Log-based Anomaly Detection for Large-scale Storage Systems Using Source Code Analysis. *To appear* Di Zhang, Chris Egersdoerfer, Tabassum Mahmud, Mai Zheng, Dong Dai.
  Proceedings of the 37th IEEE International Parallel Distributed Processing Symposium (IPDPS), 2023.
- CONFD: Analyzing Configuration Dependencies of File Systems for Fun and Profit. (*To appear*)
  Tabassum Mahmud, Om Rameshwar Gatla, Duo Zhang, Carson Love, Ryan Bumann and Mai Zheng.
  Proceedings of the 21st USENIX Conference on File and Storage Technologies (FAST), 2023.
- On the Reproducibility of Bugs in File-System Aware Storage Applications.
  Duo Zhang, Tabassum Mahmud, Om Rameshwar Gatla, Runzhou Han, Yong Chen, and Mai Zheng.
  Proceedings of the 16th IEEE International Conference on Networking, Architecture, and Storage (NAS), 2022.
- Understanding Configuration Dependencies of File Systems.
  Tabassum Mahmud, Duo Zhang, Om Rameshwar Gatla and Mai Zheng.
  Proceedings of the 14th ACM Workshop on Hot Topics in Storage and File Systems (HotStorage), 2022. ***Best Paper Nominee***

- Understanding Configuration Issues in Storage Systems.
  Tabassum Mahmud, Mai Zheng.
  Work in Progress (WiP) & Poster Sessions, 20th USENIX Conference on File and Storage Technologies (FAST), 2022.

SKILLS

- Programming Language
  C, C++, Python
- Software Testing
  LLVM, American Fuzzy Lop (AFL), KLEE, S2E
- Technology
  Git, Docker
- Systems
  File Systems architecture (Specially EXT4), File System Utility Packages (Specially E2fsprogs), File System Testing Suite (xfsprogs)

COURSES TAKEN

- High-Performance Communication Networks (CprE 541) (Fall-22)
- Applied Formal Methods (ComS 507) (Fall-21)
- Distributed Systems (CprE 550) (Spring-21)
- Design and Analysis of Algorithms (ComS 511) (Fall-20)
- Network Protocols and Security (CprE 530) (Fall-20)
- Statistical Theory for Research Workers (Stat 588) (Spring-20)
- Advanced Data Storage (CprE 563)(Spring-20)
- Real-Time Systems (CprE 554) (Fall-19)

AWARDS AND SCHOLARSHIP

- Received "Best Paper Nominee" at `HotStorage'22`
- Received **USENIX** diversity grant to attend `FAST'20, FAST'22, FAST'23` conference

OTHER PROFESSIONAL ACTIVITIES

- Served as sub-reviewer for the 36th IEEE International Parallel Distributed Processing Symposium (IPDPS), 2022
- Served as sub-reviewer for the 8th National Workshop for REU Research in Networking and Systems (REUNS), 2022
- Selected as a Mentee in **CCS iMentor 2021** Workshop