

Junayed Mahmud

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EDUCATION

George Mason University, Virginia, USA

Ph.D. in Computer Science

Aug 2019 – Present

- Advisor: [Dr. Kevin Moran](#)
- CGPA: 3.98 (out of 4.00)

Islamic University of Technology, Dhaka, Bangladesh

B.S. in Computer Science and Engineering

Jan 2013 – Dec 2016

RESEARCH INTERESTS

Bug Reporting, NLP for Software Engineering, Automated Mobile Testing

WORK EXPERIENCE

George Mason University, Virginia, USA

- *Graduate Research Assistant*

May 2021 – Present

Working on Bug Report Management and Automated Source Code Summarization.

- *Graduate Teaching Assistant*

Aug 2019 – May 2021

Assisted in the following courses:

- CS367 (Computer Systems and Programming)
- CS222 (Computer Programming for Engineers)

Software Engineer at Samsung R&D Institute Bangladesh Ltd., Dhaka, Bangladesh

Jan 2017 – Mar 2019

At Samsung R&D Institute Bangladesh Ltd., I worked in an iOS project titled “SmartThings.” The details of my responsibilities are given below:

- **IoTivity**

IoTivity is an architecture that is used to communicate between cloud and devices (consumer electronics). For “SmartThings” project, we modified IoTivity source code to make it compatible for connecting different home devices with iOS mobile devices.

- Programming Language: C++

- **Samsung Cloud Client Framework**

Using IoTivity source code, we created the Samsung Cloud Client framework, which “SmartThings” project used for various features to perform. It is used to call the APIs of IoTivity. I created a universal builder so that the framework can be used for all iOS versions.

- Programming Language: C++, Objective C

- **UI development**

I developed several UI for the “Smarthings” project. After getting the design from the UX design team, I developed the UI and implemented the logic behind it.

- Programming Language: Swift

PUBLICATIONS

- Y. Song, **J. Mahmud**, N. D. Silva, Y. Zhou, O. Chaparro, K. Moran, A. Marcus, and D. Poshyvanyk, “BURT: A Chatbot for Interactive Bug Reporting,” in *Proceedings of the 45th IEEE/ACM International Conference on Software Engineering (ICSE’23)*, Formal Tool Demonstrations Track, Melbourne, Australia, May 2023.
- Y. Song, **J. Mahmud**, Y. Zhou, O. Chaparro, K. Moran, A. Marcus, and D. Poshyvanyk, “Toward Interactive Bug Reporting for (Android App) End Users,” in *Proceedings of the 2022 ACM Joint European Software Engineering Conference and Symposium on the Foundations of Software Engineering (ESEC/FSE’22)*, Singapore, Nov 2022 (**22% acceptance rate**).
- J. Johnson, **J. Mahmud**, T. Wendland, K. Moran, J. Rubin and M. Fazzini, “An Empirical Investigation into the Reproduction of Bug Reports for Android Apps,” in *Proceedings of the 29th IEEE International Conference on Software Analysis, Evolution and Reengineering (SANER’22)*, Honolulu, Hawaii, Mar 2022 (**24% acceptance rate**).

- K. Moran, A. Yachnes, G. Purnell, **J. Mahmud**, M. Tufano, C. B. Cardenas, D. Poshyvanyk, and Z. H'Doubler, "An Empirical Investigation into the Use of Image Captioning for Automated Software Documentation," in *Proceedings of the 29th IEEE International Conference on Software Analysis, Evolution and Reengineering (SANER'22)*, Honolulu, Hawaii, Mar 2022 (**24% acceptance rate**).
- **J. Mahmud**, F. Faisal, R. I. Arnob, A. Anastasopoulos, and K. Moran, "Code to Comment Translation: A Comparative Study on Model Effectiveness & Errors," in *Proceedings of the First Workshop on Natural Language Processing for Programming (NLP4Prog'21)*, Co-Located with [ACL-IJCNLP'21](#), Bangkok, Thailand, Aug 2021.
- T. Wendland, J. Sun, **J. Mahmud**, S. M. H. Mansur, S. Huang, K. Moran, J. Rubin and M. Fazzini, "AndroR2: A Dataset of Manually-Reproduced Bug Reports for Android Apps," in *Proceedings of the 18th Conference on Mining Software Repositories (MSR'21)*, Data showcase track, Madrid, Spain, May 2021.
- A. R. Chowdhury, **J. Mahmud**, A. R. M. Kamal, and M. A. Hamid, "MAES: Modified Advanced Encryption Standard for Resource Constraint Environments," in *Proceedings of the 2018 IEEE Sensors Applications Symposium (SAS'18)*, Seoul, Korea (South), pp. 1–6, Mar 2018.

TALKS & FORMAL PRESENTATIONS

- **Invited Seminar Talk** - Microsoft Research, Virtual Apr 20, 2022
 - "Automated Software Documentation: A Brief Retrospective & Future Directions"
- **Research Paper Presentation** - [SANER'22](#), Virtual (originally Honolulu, Hawaii) Mar 16, 2022
 - "An Empirical Investigation into the Use of Image Captioning for Automated Software Documentation"
- **Research Paper Presentation** - Software Engineering Seminar, George Mason University, Virginia, USA Nov 11, 2021
 - "Code to Comment Translation: A Comparative Study on Model Effectiveness & Errors"
- **Research Paper Presentation** - [NLP4Prog'21](#), Co-Located with [ACL-IJCNLP'21](#), Virtual (originally Bangkok, Thailand) Aug 06, 2021
 - "Code to Comment Translation: A Comparative Study on Model Effectiveness & Errors"

PROFESSIONAL SERVICES

- **External Reviewer:** ASE'22, SANER'22, ICPC'21, MSR'21

SKILLS

- Programming Languages: Python, Java, C, C++, MATLAB, Swift, Objective C
- Databases: Oracle, MySQL, PostgreSQL
- Development Frameworks & IDE: Pytorch, Tensorflow, Xcode, Android Studio, IntelliJ IDEA, Spring, Angularjs, Hibernate, Bootstrap, Unity
- Operating Systems: MacOS, Windows, Linux

HONORS & AWARDS

- Summer Research Initiation Award May 2020
- Professional level (second highest level programming skill test at Samsung) programmer at Samsung Electronics. Jan 2018
- Icon of the month at Samsung R&D Institute Bangladesh Ltd. Apr 2018
- Received 4 years of OIC scholarship. 2012
- Received 4 years of government scholarship for Higher Secondary Certificate result. 2012

REFERENCES

- **Assistant Professor Kevin Moran**
 Assistant Professor of Computer Science
 George Mason University
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