

Fazle Mohammed Tawsif

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Research Interests

- Software Engineering

- Program Analysis

Education

2022–present **PhD in Computer Science**, *Thomas Lord Department of Computer Science*, University of Southern California, Los Angeles, CA, USA.

2014–2017 **Bachelor of Science in Software Engineering**, *Institute of Information & Technology*, University of Dhaka, Dhaka, Bangladesh.
CGPA: **3.81/4.00**

Publications

Partha Protim Paul, Md Tonoy Akanda, Mohammed Raihan Ullah, Dipto Mondal, Nazia Sultana Chowdhury, **Fazle M Tawsif (2024)**. **xNose: A Test Smell Detector for C#**, International Conference on Software Engineering (ICSE-Companion) DOI: 10.1145/3639478.3643116.

Ali S. Alotaibi, Paul T. Chiou, **Fazle M Tawsif**, and William G.J. Halfond (2023). **ScaleFix: An Automated Repair of UI Scaling Accessibility Issues in Android Applications**, International Conference on Software Maintenance and Evolution (ICSME) DOI: 10.1109/ICSME58846.2023.00025.

MR Ullah, NS Chowdhury, **FM Tawsif (2022)**. **Impact of Combining Syntactic and Semantic Similarities on Patch Prioritization while using the Insertion Mutation Operators**, International Conference on Software Engineering & Knowledge Engineering (SEKE), DOI: 10.18293/SEKE2022-047.

Tawsif, F. M., Mahmud, Q. I., Shuchi, N. Z., Mohaimen, A. & Tasnim, A. (2020). **A Machine Learning Approach to Predict Movie Revenue Based on Pre-Released Movie Metadata**. Journal of Computer Science, 16(6), 749-767. DOI: 10.3844/jcssp.2020.749.767.

Under Submission

Zhaoxu Zhang, **Fazle M Tawsif**, Komei Ryu, Tingting Yu, and William G.J. Halfond (2024). **Mobile Bug Report Reproduction via Global Search on the App UI Model**.

Research Projects

Java, Token Matching, Testing **Language Independent Program Slicing**, *Undergraduate Thesis, 2017*, Using the program slicing technique to find the minimal slice of a program without any dependency on a programming language or configuration **Github Link:** <https://github.com/tawsif93/LIPS>.

Java, JSoup, Lucene 5.0, TF-IDF, Cosine Similarity **Automated Bug Assignment**, An automated technique for assigning bugs using developer expertise and data from previous bug-solving experiences. It parses the commit text and Bugzilla or JIRA bug descriptions for a developer and assigns the developer to the new bug according to the bug similarities. **Github Link:** <https://github.com/tawsif93/DocumentSimilarity>.

Experience

05/2023–Present **Graduate Research Assistant**, *University of Southern California*.
Advisor: Dr. William GJ Halfond

01/2023–Present **Graduate Teaching Assistant**, *University of Southern California*.
CSCI 310: Spring 2023, Spring 2024

07/2021–Present (on-leave) **Assistant Professor**, *Institute of Information and Communication Technology*, Shahjalal University of Science & Technology, Sylhet-3114, Bangladesh.

03/2019–07/2021 **Lecturer**, *Institute of Information and Communication Technology*, Shahjalal University of Science & Technology, Sylhet-3114, Bangladesh.

Courses Taught

Software Design Patterns, Software Testing, Software Requirement Engineering, Data Science, Web Development, Software Metrics, Computer Architecture, Distributed Systems,.

02/2018–02/2019 **Software Engineer**, *Secure Link Services Ltd. (SELISE)*, Dhanmondi, Dhaka.

01/2017–06/2017 **Trainee Software Engineer**, *An IQVIA company*, Mohakhali, Dhaka.

Assigned Project: Audit and Data Analysis Tool

C#, Angular 8+, MongoDB, Couchbase, Native Script, Android An Inspection and Analysis tool for one of the largest European railway companies for tracking down the faults or required renovations on the railway track. The graphical presentation of different railway infrastructures allows them to easily log various issues and assign them to the appropriate team. Both web and Tablet applications were available.

Awards and Scholarships

Ph.D. Fellowship, *Department of Computer Science*, University of Southern California, 2022-2023.

Undergraduate Merit Award, University of Dhaka, 2014-15.

Talentpool Scholarship in 10th grade, Bangladesh Ministry of Education, 2011.

Skills

Program Analysis tools: Z3, Soot.

Machine Learning Frameworks: scikit-learn, pytorch.

Programming Languages: Java, Python, C, JavaScript, Typescript, Bash script.

Database Technologies & Frameworks: MongoDB, Redis, Cassandra, SQL, MySQL.

Web Technologies & Frameworks: RESTful API, Micro-services, NodeJS, Angular, ReactJs, Java Spring.

Mobile development: Android, Native Script.

DevOps Tools: Kubernetes, Docker, Jenkins, Bitbucket Pipeline, Github Actions.

Cloud PLaforms: AWS, Google Cloud.

Programming Background

Solved around **400+** problems in online judges like **UVA Online Judge**, **Light OJ** and **Codeforces**.

Academia-Industry Collaboration Experience

Organised seminars and workshops on **Software Testing, Applying Design Pattern, Mobile Development Standards etc.** in cooperation with the local renowned companies

Worked closely with local software companies and **managed sponsorship of around 5000 USD** for the purpose arranging Programming Contests and Software Hackathons.

Managed paid internship opportunities for around **60+ students** of my institute in different local software companies.

Extracurricular Activities

Student volunteer at ESEC/FSE 2023

Presented our paper at ICSME 2023

Participated in Hackathons such as NASA Space Apps Challenge 2016 and National ICT Hackathon 2017.

Player of IIT Cricket Team 2016, 2017

Arranged "Fresher's Reception and Farewell 2016", "Annual Picnic 2015"

Organised National High School Programming Competition 2016

Founding executive member of IIT Software Engineer's Community(IITSEC)

Participated in Programming contests like NCPC 2015, SUST IUPC 2015, ICPC Dhaka Regional 2015, 2016.