SAIF MAHMUD

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RESEARCH INTEREST

Software Engineering, Machine Learning, Explainable AI

EDUCATION

PhD in Computer Science, *University of Texas at Arlington* — Expected: Dec 2027
MS in Computer Science, *University of Texas at El Paso* — Dec 2022
BS in Software Engineering, *University of Dhaka, Bangladesh* — Dec 2016

Courses: Advanced Algorithms, Machine Learning, Statistical Methods for Data Science, Information Retrieval and Information Visualization, Distributed Systems.

SKILLS

ML / Statistical Analysis	R, TensorFlow, ScikitLearn, Pandas, Matlpolib, Seaborn
Editors / IDE	Jupyter Notebooks, VS Code, Jet Brains IDEs
Programming / Scripting	Python, Java, C, C#
Database	Oracle, MySQL
Version Control	Git, SourceTree
Containerization	Docker

PROJECTS

🔗 **Pet Adoption** | *gRPC, Java, Python, Flask, Docker*
– A multi-threaded server for a Pet Adoption system using gRPC. Can handle two different types of requests - 1. register for a new pet and 2. search for a pet (by name, age, breed, type and image). The client-side is implemented with Python and the server-side is written in Java. They communicate through gRPC stubs. Developed as part of Graduate Distributed Systems course.

🔗 **Code Smell Detection Project** | *Machine Learning, Python, ScikitLearn, Pandas*
– Increased the accuracy of code smell detection techniques by applying traditional machine learning models and artificial neural networks to detect several code smells in a given repository.

🔗 **UTEP Faculty Interest Search Project** | *Web Scrapping, Python, BeautifulSoup, Flask*
– Basic search engine to find the research interests of the faculties at UTEP, developed using python web scrapping library - BeautifulSoup

– The related faculties are ranked based on the keywords using TF-IDF

🔗 **Git Repository Analyzer Commit Parser** | *Java*
– Created a tool to analyze dependency between methods and classes in GitHub repositories.
– Parsed commit information to generate lists of modified chain of methods and classes in between given commits.

PROFESSIONAL EXPERIENCE

Software Engineer, *Mobil-Jamuna Lubricants Bangladesh Ltd.* — Mar 2018 - Aug 2019
– Led the successful design and implementation of several modules of in-house legacy ERP system by maintaining CI/CD pipelines using git and ASP.NET Web Forms and C#.
– Improved user experience (UI/UX) by modernizing the user interface using JavaScript, JQuery, HTML5, CSS3, and Bootstrap3.

– Managed the development of categorical leave management module using Django/Python and MySQL, streamlining operational procedures.

– Organized test plans and conducted functional testing to ensure the system integrity.

Intern Software Engineer, *Monstar Lab Bangladesh Limited* Jan 2016 - Jun 2016
  – Developed the Award Management feature for a live, cross-platform HRMS application using PHP/ Laravel 5.2, MySQL, Eloquent ORM, and Bootstrap2.
  – Organized test plans and conducted functional testing across various platforms, including IOS, Android, Windows, and MacOS leading Behavioral Driven Development (BDD).

ACADEMIC EXPERIENCE

Graduate Teaching Assistant, *University of Texas at Arlington* Jan 2024 - Present
  – Conducted in-depth lab sessions for Computer Networks and Machine Learning courses.

Graduate Research Assistant, *University of Texas at El Paso* Jun 2020 - May 2022
  – Constructed a code-quality-attribute dataset using CodeMR tool for code smell analysis on 60 releases of 10 open-source GitHub projects from 2015-2020
  – Analysed the performance of Machine Learning Models on detecting several code smells in the dataset using scikit-learn, keras and tensorflow

Graduate Teaching Assistant, *University of Texas at El Paso* Sept 2019 - Dec 2022
  – Conducted lectures and lab sessions on several courses including Database Management, Advanced OOP.
  – Prepared demonstrations on Selenium, Java Microbenchmark Harness, Coverage.py, OpenClover tools.

Web Development Instructor, *University of Dhaka* Sep 2016 – Dec 2017
  – Provided lectures and conducted laboratory classes on PHP & MySQL, HTML/CSS, and MS Office applications.