Sourov Jajodia

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EDUCATION

Bangladesh University of Engineering & Technology — **April, 2018 - Present**
Bachelor of Computer Science and Engineering
Department of Computer Science and Engineering
Level-4, Term-1, **CGPA**: 3.68/4.00

Birsreshtha Noor Mohammad Public College — **July, 2015 – July, 2017**
Higher Secondary Certificate (HSC)
Division of Science
GPA: 5.00/5.00

PUBLICATIONS

22nd **IEEE International Working Conference on Source Code Analysis and Manipulation (SCAM 2022)**

An Empirical Study of Code Smells in Transformer-based Code Generation Techniques, Mohammed Latif Siddiq**,** Shafayat Hossain Majumder, Maisha Rahman Mim, **Sourov Jajodia**, and Joanna C. S. Santos

RESEARCH EXPERIENCE

University of Notre Dame, Indiana, USA
Detection of Code Smells in Transformer-based Code Generation Models — **March, 2022**
Voluntary Student Research Assistant

- Volunteered for **S²E lab** on a research work for detecting **code smells in transformer-based code generation datasets**, and to determine how it impacts the code generation model as a whole.
- Analyzed, parsed & categorized code smells for nearly **0.7 million files** using tools like **pylint & bandit**.
- **Wrote flex & python scripts** to detect & categorize code smells.
- **Published a paper** on the findings in **SCAM 2022 research track**.

Concordia University, Montreal, Canada
Cloud Security — **May, 2022**
Voluntary Student Research Assistant (Ongoing)

- Collaboration project on **security & vulnerability of cloud technologies**, specifically Docker.
- Performed **dissection of docker images** to analyze its contents.
- Analyzing & testing various vulnerability detection methods, and performing literature review.

Bangladesh University of Engineering & Technology, Bangladesh
Security & Privacy of Blockchains — **May, 2022**
Student Research Assistant (Ongoing)

- Undergraduate research on **security & privacy of blockchains**, especially healthcare blockchains.
- Studied various blockchain networks extensively, including various **consensus protocols**, **fault tolerance mechanisms, connectivity protocols, network operation, anonymity, authenticity** etc.
- **Implementing test blockchain network** for understanding the network's various operations.

ACADEMIC PROJECTS

Contest.io: Online Contests Hosting Platform — **August, 2022**
Node.js, Express.js, React.js, MongoDB

Created an *online voting and contest hosting solution* that aims to make contest hosting and vote management easier for **various types of contests**; e.g., Photo, video, polls etc. Also includes various **privacy and security features** such as **anonymity** of voters, **selecting & blocking** participants, **contest types** according to varying

privacy features. Performed extensive **requirement analysis, system design phase** prior to building the said software.

February, 2022

Improvement of TCP Reno Congestion Control Algorithm
Network Simulator 3(NS3), C, Python, GNUPlot

Here I have tried to improve the existing TCP Reno Congestion Control Algorithm. And then compared the throughput, packet losses calculated from the implemented algorithm with the New modified Algorithm. The modified algorithm was tested and simulated using Network Simulator 3(NS3).

Toll Management System (with Unified Payment Integration) **February, 2022**
Python, Django REST, React.js, Oracle SQL GitHub

Designed a toll collection & management system **with a team of 6 people**. Went through an extensive **requirement analysis, system design & documentation phase** for developing the said software. Generated in the process: **BPMN, Mock UI, Class & ER, Interaction & State diagrams.**

Smart Cart **July, 2021**
C, AtMega32, Atmel Studio, Proteus 8, Arduino Demo Video

Prototyped an autonomous cart that **follows a point-of-interest** by **auto collision avoidance** with a **team of 4 people**. Designed a fully functional software simulation and later, built a working hardware prototype.

Hotel Management System **December, 2020**
Django, Bootstrap, Python, Oracle SQL GitHub, Demo Video

Developed a prototype hotel management system on the web with full functionality with a **team of 2 people**. The database of the project was **designed extensively following the relevant ER diagrams**.

Dynamite District: Java-Based Multiplayer Game **January, 2019**
Java, JavaFX GitHub, Demo Video

Developed a multiplayer shooting game playable over a WLAN network. **Built using OOP principles & server-client networking**. Supports collision & game physics inside a **2D map**.

A Book Shop Library **July, 2018**
C, iGraphics Custom Library

Developed a simple book shop app, where the customer can create an account, buy books, return books. The owner can add new books in the library, change prices of existing books, see customers list etc.

SKILLS

Languages	Java, Python, C, C++, SQL, Shell, JavaScript
Databases	Oracle, MySQL, MongoDB, Firebase
Frameworks	Django, JavaFX, React.js, Express, Node.js
Web Technologies	HTML, CSS, BootStrap, JSON
Cloud Technologies	Docker, Kubernetes
Technical Writing	LaTeX, Beamer, Overleaf
Problem Solving	CodeForces, SPOJ
Testing	JUnit, GDB
Operating Systems	Windows, Flavors of Linux (Ubuntu, Linux Mint, Kali), ChromeOS
Others	Git (GitHub), NS3, XV6, GNUPlot, OpenGL

ACHIEVEMENTS

University Cyber Drill 2022
National CTF Competition, Uni: 3rd, National: 21st

Technical Scholarship (2017-2023)
Scholarship for outstanding engineering students

College Final Examination (2016)
Straight As, **merit position** 7 in whole college

Dean's Award, BUET (2020, 2021)
For outstanding academic performance

Government Scholarship, Bangladesh (2015-2017)
For outstanding performance in Secondary School Certificate Examination

HIGHLIGHTED ACADEMIC COURSES

Undergraduate Courses, Bangladesh University of Engineering and Technology

- CSE-405 Computer Security
- CSE-423 Fault Tolerance Systems
- CSE-453 High Performance Database Systems

LANGUAGES

English	**Bangla**	**Hindi**
Fluent	Native	Listening, Speaking

PERSONAL INFORMATION

Name	Sourov Jajodia
Bengali Name	সৌরভ জাজোদিয়া
Nationality	Bangladeshi