

Bishal Basak Papan

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RESEARCH INTERESTS

- Systems and Security
 - Distributed Systems
 - Software Engineering
 - Security
 - Operating Systems

EDUCATION

Purdue University

Ph.D. in Computer Science
Advisor: Dr. Yongle Zhang

West Lafayette, Indiana, USA

Aug. 2023 – Present

Research Concentration: Distributed Systems, Software Engineering & Security

Bangladesh University of Engineering and Technology (BUET)

B.Sc in Computer Science and Engineering
CGPA: 3.50 on a scale of 4.00 (Major CGPA: 3.60)

Dhaka, Bangladesh

Feb. 2016 – Feb. 2021

Thesis Supervisor: Dr. Md. Saidur Rahman

Thesis Concentration: Algorithms, Graph Theory, Bioinformatics

PUBLICATIONS

- **Dealing with Smart GPS Spoofing Attacks in VANETs: 3BSM Approach**
Zahin Wahab, **Bishal Basak Papan**, Md. Shohrab Hossain, Md. Atiquzzaman
In Proceedings of *2024 IEEE International Conference on Communications (ICC)*, June, 2024
(Accepted)
- **New Results on Pairwise Compatibility Graphs**
Sheikh Azizul Hakim, **Bishal Basak Papan**, Md. Saidur Rahman
Information Processing Letters, Elsevier, May, 2022 ([PDF](#))
- **On 2-Interval Pairwise Compatibility Properties of Two Classes of Grid Graphs**
Bishal Basak Papan, Protik Bose Pranto, Md. Saidur Rahman
The Computer Journal, Oxford University Press, February, 2022
- **k -Safe Labelings of Connected Graphs**
Protik Bose Pranto, **Bishal Basak Papan**, Md. Saidur Rahman
In Proceedings of *2021 IEEE International Conference on Telecommunication and Photonics (ICTP)*
December 2021, Dhaka, Bangladesh

EXPERIENCE

Purdue University

Graduate Assistant

West Lafayette, Indiana

Aug. 2023 – Present

Research Projects:

- Distributed Systems Testing: unearthing bugs in open source distributed systems like Cassandra, HBase, HDFS etc.

Teaching Assistantship:

- CS 252: Systems Programming (Spring 2024)
- CS 307: Software Engineering I (Fall 2024)

Incepta Solutions Inc

Software Developer (Remote)

Platforms: MuleSoft, Workato, React

Languages: Java, Ruby, TypeScript, Python

Ontario, Canada

Jun. 2021 – Jul. 2023

Projects worked on:

- API integration through MuleSoft for **Incepta SmartConnect**, an IoT platform solution
 - * Connected systems like SMTP, Twilio, Azure with SmartConnect portal through MuleSoft
- MuleSoft Integration support for **The Nationwide Group of Companies**
 - * Migrating NAS mobile app middleware from Mule 3.9 to Mule 4.4 using MuleSoft and Java
- **Incepta HRTech**: HR Automation system that enables faster HR on-boarding.
 - * Developed an Applicant Tracking System portal using React and TypeScript
 - * Developed a custom connector for JotForm in Workato using Ruby
- Fortify-On-Demand (FoD) integration with Jira for automating SDLC steps
 - * Created a pipeline between FoD and Jira that leverages FoD static analysis tool to reduce developer and QA efforts as well as product delivery time

SELECTED PROJECTS

eMarketPlace | *PHP, HTML, JavaScript, CSS, MySQL, Laravel*

- A simple E-commerce website containing different modules for customer, vendor and admin
- Customers can search and order different categories of products online and provide feedback
- Vendors can add new product or update existing products' attribute

GPS Spoofing Detection in VANETs using ML | *Python*

- Detection of GPS Spoofing attack in a VANET from three consecutive BSM packets using the VeReMi dataset
- Performance comparison with existing two consecutive BSM approach on KNN, Naive Bayes, Decision Tree and Random Forest models
- Analyzing how three consecutive BSM approach beats the existing two consecutive BSM approach

Hall Management System for BUET | *Java, Oracle, SQL, C++, CSS*

[Code](#)

- A residential hall management system for BUET students and authorities
- Can be used by students and hall and university administrators in their respective modules to assign hall and room to BUET students, to clear fees of students

Simulation of TCP Session Hijacking Attack | *Python, Shell*

[Code](#)

- TCP Session Hijacking attack in a network using three SEED virtual machines
- First, the attacker will launch arp spoofing attack to sniff the packets between client and server
- Then the attacker will generate a correct session id depending on the ongoing sessions and hijack the session

A Comparison of Modern JVM Based Garbage Collectors | *Shell, Python*

[Code](#)

- A study of the performance of three JVM based garbage collectors: G1GC, ZGC and Shenandoah
- Observed performance variation with modifying heap sizes by analyzing log files using GCEasy
- Comparing their performance on several big-data benchmarks from two Benchmark Suites: Renaissance and DaCapo, on OpenJDK Java version 11.0.15

Predicting Football Players' Injuries from Past Injuries | *Python*

- Developed crawlers to collect data from a website and collected injury history along with other relevant data of around 4000 footballers currently playing
- Used deep learning models to predict footballers' injuries using time series forecasting techniques

REFERENCES

Dr. Yongle Zhang - *Assistant Professor*

Department of Computer Science,
Purdue University.

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Dr. Md. Saidur Rahman - *Professor*

Department of Computer Science and Engineering,
Bangladesh University of Engineering and Technology.

Email: saidurrahman@teacher.cse.buet.ac.bd