Bishal Basak Papan

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Portfolio | Github | Linkedin | Google Scholar

Research Interests

- Systems and Security
  - Security
  - Computer Networks
  - Software Engineering
  - Distributed Systems
- Machine Learning and Deep Learning
  - Natural Language Processing
  - Computer Vision
  - Graph Neural Network

Education

Bangladesh University of Engineering and Technology(BUET) — Dhaka, Bangladesh
B.Sc in Computer Science and Engineering — *Feb. 2016 – Feb. 2021*
CGPA: 3.50 on a scale of 4.00 (Major CGPA: 3.60)

Thesis Supervisor: Professor Dr. Md. Saidur Rahman
Thesis Concentration: Algorithms, Graph Theory, Bioinformatics

Publications

- **New Results on Pairwise Compatibility Graphs**
  Sheikh Azizul Hakim, **Bishal Basak Papan**, Md. Saidur Rahman
  Information Processing Letters, Elsevier, November, 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

Incepta Solutions Inc — Ontario, Canada
Software Developer (Remote) — *June 2021 – Present*
Platforms: MuleSoft, Workato, React
Languages: Java, Ruby, TypeScript, Python

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

Class Test Management System | *JavaFX, CSS* Code
- Class test routine, seat plan and invigilation management system for a department
- A student can see his/her routine and seat plan for class tests
- A teacher can see dates of class tests of his/her courses and the ones he/she needs to invigilate

Modification of MAC802.11 Protocol Using NS-2 | *NS-2, Shell, Awk, Gnuplot* Code
- Made some modifications in original MAC protocol's congestion window size, preamble length, beacon interval, channel time etc.
- Varying the number of static & mobile nodes in a network, different metrics of the modified protocol were analyzed and compared with the original protocol using NS2

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

Technical Skills

Languages: Python, Java, C/C++, TeX, MySQL, PosteGRESQL, DataWeave, Matlab, HTML/CSS, PHP, JavaScript, Bash, Ruby, RAML, JSON, TypeScript
Frameworks: Mule 4, JavaFX, OpenGl, Unity, Laravel, React, Groovy
Platforms: MuleSoft Anypoint Platform, Workato, Jira, Confluence, Google Colab, Salesforce
Tools: Git, Bitbucket, Overleaf, Gephi, Mathcha, yEd, Jenkins, JMeter, Postman, NS-2, Wireshark
Operating Systems: Windows, Ubuntu, XV6

Professional Certifications

- MuleSoft: MuleSoft Certified Developer - Level 1 (Mule 4) Valid till Jan, 2024
- Workato: Workato Automation Pro I and Automation Pro II
- React: React 16.x (Foundation), provided by StudySection

Achievements

1. Second Runner-up in Bangladesh National Math Olympiad 2011
2. 10^{th} in Bangladesh National Physics Olympiad 2013
3. 14^{th} in Bangladesh National Science Olympiad 2015
4. Champion in Regional Math Olympiad 2010, 2011, 2013
5. First in Divisional Physics Olympiad 2013

References

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Bangladesh University of Engineering and Technology.
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