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Shazibul Islam Shamim

PhD student, Computer Science, Tennessee Tech University

Education

Tennessee Technological University *Jan' 20 - Present*
PhD in Computer Science

Bangladesh University of Engineering and Technology *(Graduated) Nov' 16*
Bachelor of Science, Computer Science and Engineering

Research Areas

Secure Software Development, DevOps

Publications

Shazibul Islam Shamim, Farzana Ahamed Bhuiyan, Akond Rahman "XI Commandments of Kubernetes Security: A Systematization of Knowledge Related to Kubernetes Security Practices" to appear in *Proceedings of the 2020 IEEE Secure Development Conference* (SecDev), Atlanta, GA. (pre print)

Work Experience

Software Engineer
iPay Systems Limited *Nov '17 - Dec '19*

Developed Backend services with Java *Spring Boot* framework with proper unit tests, maintained code quality with SonarQube and deployed with Docker container. Set up and configure ELK stack cluster for centralized logging system with Apache Kafka, Zookeeper. Configured monitor and alert systems with Kibana visualizer and Elastic search for production application. Collaborated with security team for Penetration testing.

Software Engineer, Automation
iPay Systems Limited *Aug '16 - Oct '17*

Developed automated test suite for mobile platforms such as Android, iOS and web platform with Calabash, Appium, Capybara framework respectively. Designed test suites and developed automated test pipeline for backend services with Gatling.

Awards & Achievements

Awarded as **1ST RUNNER UP** for poster presentation at **BIOS '15**
Awarded as **CHAMPION** in the National Software Project Show at **BUET CSE FEST '15**.

Research Projects

Identifying the violation of security practices in Kubernetes provisioning scripts
Supervisor : Prof. Dr. Akond Rahman *Aug '20 - Present*

- Conducting qualitative analysis on open source Kuberentes provisioning scripts to identify violation of security practices.

Systemization of knowledge for Kubernetes security practices from internet artifacts
Supervisor : Prof. Dr. Akond Rahman *Mar '20 - Present*

- Conducted a grey literature review on 101 Internet artifacts such as blog posts, videos and presentations related to Kubernetes security practices.
- Synthesized a list of 11 security practices and built a curated dataset with a mapping between Internet artifacts and identified security practices.
- *Paper accepted in IEEE SecDev 2020, a peer-reviewed conference in Secure Software Development*

Identifying insecure coding patterns in microservice OSS projects
Supervisors : Prof. Dr. Akond Rahman *Sep '19 - Aug '20*

- Derived a list of 10 insecure coding patterns after qualitative analysis on 3,779 files from open source microservice projects.
- Evaluated the frequency of insecure coding pattern with a static analysis tool SESAME on 229 open source microservice projects and observed 21,563 instances of insecure coding pattern.
- Conducted developer survey to empirically validate our results by randomly submitting 1000 pull request for instances of insecure coding patterns with a fix and achieved 83.7% agreement response from the developers.
- *Paper submitted in one of the premier peer-reviewed conferences in Software Engineering(under review)*

Designing parallel algorithms for planted motif search
Supervisor : Prof. Dr. Abul Kashem Mia *March '15 - Feb '16*

- Reproduced and generated the results of *qPMS9, PMS8, qPMS7* algorithms and proposed a new parallel algorithm *PMS-Alpha* for planted motif search. Implemented and compared the results with *qPMS9, PMS8 with PMS-Alpha* for performance benchmarks.
- Poster accepted to Bioinformatics and Stringology Conference BIOS '15 in BUET, Dhaka.

Computer Skills

Languages:Python, C, C++, Java, Bash, LaTeX
Frameworks and tools: Gatling, Calabash, Selenium, Capybara, Spring Boot, Docker, Kubernetes, Apache Kafka, Elastic search, Logstash, Kibana.

Reference

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