JAINTA PAUL

https://pauljainta.github.io/jp/

Salt Lake City, USA

jaintapaul1998@gmail.com (primary) ⬦ u1471999@utah.edu (academic)

EDUCATION

Ph.D. Student
Kahlert School of Computing, University of Utah
Security, Safety, and Privacy of Cyber Physical Systems   **January 2024 - Present**

Bachelor of Science
Computer Science and Engineering
Bangladesh University of Engineering and Technology (BUET)   **February 2017 - May 2022**

Higher Secondary Certificate(Science Track)
Notre Dame College   **August 2014 - June 2016**

RESEARCH AND PUBLICATIONS

- [CCS-RICSS'24] Towards Cross-Physical-Domain Threat Inference for Industrial Control System Defense Adaptation
  Jainta Paul, Lawrence Ponce, Mu Zhang, and Luis Garcia
  In The 2nd International Workshop on Re-design Industrial Control Systems with Security (RICSS), co-located with The 31st ACM Conference on Computer and Communications Security (CCS), Salt Lake City, Utah, October 2024.

- [Under Review] HyTwin: Hybrid Program Semantics for Digital Twin-based Security Interventions in Industrial Control Systems
  Jainta Paul, Stefan Mitsch, and Luis Garcia

- [Under Review] ICSTRACKER: Backtracking Intrusions in Modern Industrial Control Systems
  Md Raihan Ahmed, Jainta Paul, Levi Li, Luis Garcia, and Mu Zhang

PROFESSIONAL EXPERIENCE

Software Engineer, OpenRefactory, Inc.   **June 2022 - November 2023**

Contribution:

- Test Drive - OpenRefactory:
  Role : Technical Leader

  - Website: https://testdrive.openrefactory.com/

  - Description: Developed a platform allowing users to initiate static code analysis trials for open-source projects. Users log in with GitHub, select projects, and choose Python, Java, or Go for analysis.

- Open Source Python and Java Projects Bug Analysis and Reporting:
  Role : Full Stack Developer and Security Engineer

  - Website: https://triage.openrefactory.com/

- Description: The project involved finding security vulnerabilities and compliance bugs in open-source Python and Java projects through static source code analysis and automatically reporting them to the maintainer.
- **Intelligent Code Repair(iCR):**
  - Contributed to the Java core static bug detection engine. Worked with some static analysis techniques such as Call Graph Creation, Points to Analysis, Static Taint Analysis.

NOTABLE PROJECTS

Rider - A traffic Solution (Android Studio, Firebase) — [GitHub]

- Implemented some basic features of a ride sharing app.

Flickr (JavaFX, PostgreSQL, Pgadmin) — [GitHub]

- Implemented some basic features of flickr website.

Automated Car Parking Controller (Atmega 32, Lcd module, PIR sensors, Servo Motors) — [Youtube]

- Implemented automated car parking lot.
- Visualized number of cars using LCD module.
- Materialised controller entrance and exit with servo motor and PIR sensors.

Compiler for C (Yacc, Lex, C, C++, Shell) — [GitHub]

- Implemented symbol table.
- Implemented lexer and parser.
- Implemented intermediate code generator.

EXTRA-CURRICULAR ACTIVITIES

- Capture the Flag(ctf) participation by iTrust SUTD (2024)
- Member of Organizing Committee, BUET CSE FEST 2018.
- Former Organizing Secretary of TABS (a students' organization of BUET).

REFERENCES

Dr. Luis Garcia
Assitant Professor, KSOC, University of Utah
Email: la.garcia@utah.edu

Dr. Mu Zhang
Assitant Professor, KSOC, University of Utah
Email: muzhang@cs.utah.edu

Dr. Stefan Mitsch
Associate Professor, DePaul University
Email: smitsch@depaul.edu

Dr. ABM Alim Al Islam
Professor, CSE, BUET
Email: alim_razi@cse.buet.ac.bd

Dr. Munawar Hafiz
Founder and CEO, OpenRefactory, Inc.
Email: munawar@openrefactory.com