Raj Sahu

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EDUCATION

Virginia Tech, Blacksburg - *MS* Aug 2022 - May 2024
Computer Science · 3.8/4.0 GPA
Courses : Multiprocessor Programming, Quantum Computing, Advanced OS
Responsibilities : Graduate Teaching Assistant (Systems, CS3214)

Delhi Technological University, New Delhi - B.Tech Aug 2017 - June 2021
Computer Engineering · 7.88/10 GPA
Courses : Data Structures and Algorithms, Operating System, DBMS, Object Oriented Programming, Cryptography

SKILLS

(C, C++, Python)[3], (Bash, Cryptography, Middleware)[1], (eBPF, Rust, AOSP, Deep Learning, Django,Haskell)[<1]

EXPERIENCE

Vehicle Software Engineer · Ola Electric, Bangalore · JULY 2021 - JULY 2022

- Developed middleware application for firmware flashing using **CAN** & **UDS** protocols. Currently in production for efficiently upgrading firmwares of more than **50,000** EV-scooters on road. (**C++**, **Rust, AOSP**)
- Developed cryptographic library for **TA100 chip** to perform cert-chain validation and mTLS. (**C++**)
- Programmed **automation** scripts for Over-the-air (OTA) package creation and verification. (**Python, Bash**)

Intern · Ola Electric, Bangalore · APRIL 2021 - JUNE 2021

- Developed an easy to use desktop **GUI** tool to perform firmware flashing sequence of microcontrollers with the click of a button. (**Python, CAN, UDS**)
- Performed code refactoring and security enhancements like key management and device whitelisting in subsequent releases.

Undergraduate Researcher · *DTU* - Samsung Research Lab, Delhi · MAY 2020 - JUNE 2021

- Implemented scalable user and attribute revocation in an **ECC** based **CP-ABE** scheme. (**C**) (Git)
- Mitigated an existing key-collusion attack.
- Proposed algorithm worked on constant sized secret keys and low latency revocation. (Publication : IEEE,IJISP)

PROJECTS

Runtime Mechanisms in eBPFs - *Git(in-progress)*
Researching methods to improve expressibility of eBPF programs for **Linux Kernels** with Dr. Dan Williams.
Designing and Implementing safe termination mechanism for very long running **eBPF** programs which otherwise causes Denial-of-Service. (**C**)

Influence Maximization using Spider Monkey Swarm Algorithm - *Git*
Modeling the Spider Monkey swarm algorithm to solve the **Influence Maximization** problem in twitter dataset.
Improved convergence rates by increasing randomness and local Search procedures. (**Python**).

ScheduleMe : Personal Scheduler & Tracker - *Git*
Tracking in-browser and off-browser activities of a user and using category mapping to record productivity. Used **sandboxing** to limit the software's access to required data only. (**Python, Linux**)

Python CLI - *Git*
Deliver content and perform actions like daily News feed and crypto prices from CLI using **Selenium** and Web Scraping. (**Python, Linux**)

MOOCs

- Neural Networks and Deep Learning · SEPT 2022 (*Certificate*)
- Applied Social Network Analysis in Python · MAY 2020 (*Certificate*)

Last Updated : 8 Feb 2023