Basanta Chaulagain

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EDUCATION

PhD in Computer Science | University of Georgia, Athens, GA **(GPA: 4.0)** Aug 2021 – Dec 2025

Relevant Coursework: Secure Programming; IoT Security; Software Security and Cyber Forensics; Advanced Operating System; Privacy-Preserving Data Analysis; Computer Networks; Algorithms; Data Science; Data Mining.

SKILLS

- **Languages** Python (8+ years), C/C++ (6+ years), Bash (5+ years), PHP, Rust, Java. **Frameworks:** Django, Flask.
- **Libraries** TensorFlow, PyTorch, Pandas, OpenSSL, NLTK, Cryptography, NetworkX, Transformers, AutoGen.
- **Tools** Linux, Windows, Git, Docker, SQL, MongoDB, Regex, AWS, Jira, KVM, ZFS, Wireshark, NMAP, Qualys.
- **Others** SIEM, UEBA, SOAR, REST API, Multithreading, Threat Hunting, Time series analysis, TCP, SOC2.
- **Certification** Cyber Security Foundation Professional Certificate (CSFPC), 2021.

EXPERIENCE

Graduate Research Assistant Aug 2021 – Present
The University of Georgia Athens, GA
- Research Area: Digital Forensics, Software Security, Web Security.
- Spearheaded **end-to-end research lifecycle**: ideation, design, implementation, evaluation, and paper-writing of FASEAL, a system that performs forensic analysis on encrypted logs while ensuring confidentiality and efficiency.
- Mentored an undergraduate student, resulting in the simulation of **5 attack cases** used for validation of FASEAL's efficacy.

Security Analytics Engineer Oct 2020 – Jul 2021
LogPoint (SIEM solution) Copenhagen, Denmark
- Engineered **30+ applications** that extracted security insights from log sources (OS, Firewall, IDS, AD, servers, routers) across multiple vendors including the development of Analytics components (**dashboards, alert rules, reports**).
- Authored **100+** custom alert rules, mapped precisely to different stages of cyber-attacks per the MITRE framework, enhancing proactive threat detection by **20%.**

Data Engineer - Customer Success Oct 2018 – Oct 2020
LogPoint (SIEM solution) Copenhagen, Denmark
- Debugged product-related problems and developed hotfixes, often applying fixes in the live production environment.
- Developed and integrated **50+ plugins** for technical proof of concept, converting **75%** of demos to business.
- Created key performance metrics to assess customer system performance, achieving a **20% improvement** in monitoring, and developed automated scripts that cut manual monitoring tasks by **30%.**
- Conducted **20+** certified user and administrator training sessions, contributing to product adoption by **120+** individuals.

Lecturer (part-time) May 2019 – Apr 2020
Cosmos College of Management and Technology Lalitpur, Nepal
- Delivered engaging lectures on programming courses like C and C++ to **60+ undergraduate students**.
- Designed and implemented hands-on assessments, assignments, and lab exercises to evaluate students' performances.

PROJECTS/PUBLICATIONS

FA-SEAL: Forensically Analyzable Symmetric Encryption for Audit Logs **[ACSAC'24]**
- Designed and implemented FA-SEAL, a forensic analysis system that enables forensic analysis on encrypted audit logs, disclosing only **0.68%** of log data and processing **30GB** of daily logs in just **1 hour and 28 minutes** using a single core.

SynthDB: Synthesizing Database via Program Analysis for Security Testing of Web Applications **[NDSS'23]**
- Evaluated real-world PHP applications with SynthDB, a system that synthesizes databases for dynamic analysis of PHP web applications; and discovering **33 previously unknown vulnerabilities** from 5 real-world applications.

Text Manipulation **[Project Link]**
- Collaborated in a 3-person team to develop a Rust crate for advanced text manipulation, including multilingual text generation, translation, and word definitions, with over **1800 downloads**.

Casualty Information Extraction and Analysis from News **[ISCRAM'19]**
- Developed a real-time software for extracting road accident information from online news portals with **90.8%** accuracy.