Kelle Clark

Mathematician and Computer Scientist pursuing the excitement of distilling theory into practice.
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Education

PhD Mathematical Sciences, Clemson University December 2000

- Focus: Coding Theory with use of Magma, a low-level hardware design language for representing Projective Geometries over Finite Fields.

M.S. Computer Sciences, East Carolina University June 2021

- Focus: Natural Language Processing & Image Processing using Python, nltk, pandas, OpenCV; Data Mining using Weka, Neo4j and Firestore; Software Development and Design using Visual Studio & Papyrus for UML

M.A. Mathematics, University of Georgia May 1995

- Focus: Abstract Algebra, Homological Algebra

Experience

Cryptographic Solutions Engineer, Trusted Security Solutions Feb 2022 – present

- Maintained and migrated legacy C code for public key generation, signature validation and certificate parsing between KDH systems and POS devices.
- Implemented cryptographic functionality in support of interoperability between application and other systems including various Hardware Security Modules.
- Provided customer support and served as the team technical resource regarding NIST ASC X9 Standards, Public Key Cryptography Standards : X9.143, X9.139, PKCS#7, PKCS#10, PKCS#11 and ISO8583.
- Researched security vulnerabilities within the system environment and proposed mitigation strategies.
- Built custom Functionality Modules using Visual Studio, C, C++, Github, Wireshark, RHEL/Windows, makefiles, shell scripts/batch files, SSH/PuTTY, MySQLServer
- Served on NIST ASC X9 F6 Quantum Computing Readiness Workgroup and Financial Services Interoperable Secure Key Block Specification X9.143 Standard Committee

Security Engineer Intern, Certik June 2021 – September 2021

- Audited Smart Contracts and DApps for vulnerabilities by performing code reviews, applying knowledge of OpenZeppelin documentation, Slither and various blockchain explorers output.
- Used Ethereum Remix Online IDE and Hardhat within Visual Studio Code for Solidity (Contracts) and JavaScript (Interfacing Scripts) for capture-the-flag challenges and team building.

Mathematics Professor

- Taught Abstract Algebra (Graduate and Undergraduate), Cryptography (Graduate), Statistics, and Calculus Series courses at University of Virginia, University of Georgia, University of North Carolina Charlotte, Queens University and Wingate University

Technical Skills

Languages: C, C#, Python, Java, Solidity, JavaScript
Concepts: Version Control using Git, Azure DevOps for project management, UML for Use Case and Sequence Diagrams, Zero Knowledge Proofs for Verification (BulletProofs)