UJJWAL BARANWAL

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SUMMARY

Graduate Computer Science (Cybersecurity) student with experience in Web-Dev, Blockchain Models, Computer Forensics, Network and Data Security, and Cryptography. Project experience includes Tech Stack applications with APIs, Manufacturing Blockchain model to monitor evidence, and implementing Cryptographic Schemes.

EDUCATION

Masters of Science, Computer Science (Cybersecurity) Graduating May 2025
Arizona State University, Tempe, AZ 4.00 GPA

TECHNICAL SKILLS & CERTIFICATIONS

Core: MAUI, .NET, Laravel, Django, Node.js, scikit-learn, Splunk, ProDiscover, WireShark, Ghidra, CTF, Salesforce
Programming Languages: Python, C, C++, C#, JavaScript, Java, Kotlin
Certifications: CompTIA Security+

EXPERIENCE

Paqt, Toronto, Ontario: Student Developer (Capstone) August 2023 – May 2024

- Integration of Google Calendar API to Paqt for effective teams and time management using Node.js & PHP Laravel
- Assisted team in addition of templates to programmatically create agreements for signing documents using Node.js & ReactJS

PROJECTS

Academic Paper on Fully Homomorphic Encryption Schemes Fall 2023
Collaborated in a team of three to research and compare CKKS and BGV schemes.

- Explored six multiple research papers from Google Scholars on BGV Encryption Scheme and its use cases
- Engaged with collaborators to contrast CKKS and BGV schemes and map its differences
- Peer Reviewed and composed academic research article under professor Ni Trieu's guidance

Blockchain Chain of Custody Spring 2024
Developed a blockchain-based Chain of Custody to track evidence from discovery to case resolution..

- Designed and implemented a blockchain that records multiple classes and evidence items, enhancing traceability and integrity in forensics investigation
- Generated functionalities for checking out and checking in evidence items by authorized parties, improving the transparency of evidence status
- Implemented a verification feature to detect any unauthorized modifications to the blockchain, ensuring the security and legality of the evidence handling process

Secure File Transfer Application Spring 2024
Independently developed a secure file transfer application utilizing TCP/IP sockets for reliable communication.

- Implemented file compression and encryption using RSA and Diffie-Hellman Key Exchange algorithms to ensure data integrity and confidentiality
- Designed the system to transmit file metadata, including file name, creation date, file signature, and file hash, followed by the actual file data
- Ensured the receiving server accurately merged, decrypted, and decompressed the data, storing it in the user-specified location

OTHER WORK EXPERIENCE

Arizona State University, Tempe, AZ: Teaching Assistant (Network Security) January 2024 – May 2024

- Partnering with teaching staff and professor to design course structure and material
- Assisting 55+ students with coursework on topics such as Traffic Analysis, Network Intrusion and Network Mapping
- Offering weekly in-person and online Office Hours to resolve conceptual & assignment related doubts