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) Graduated May 2025
Arizona State University, Tempe, AZ 3.90 GPA

Bachelor of Science, Computer Science Graduated May 2024
Arizona State University, Tempe, AZ 3.52 GPA

TECHNICAL SKILLS & CERTIFICATIONS

Core: Django, Node.js, Laravel, .NET, Vite, Node, MAUI, Android Studio, React, Tailwind, Wireshark, Ghidra, Burp Suite, ProDiscover, Autopsy, Volatility, scikit-learn, pandas, NumPy, Decision Trees, Ethereum, Hyperledger Fabric, MetaMask, web3.js, Salesforce, Splunk, Git, Docker, Azure DevOps
Programming Languages: Python, C, C++, C#, JavaScript, TypeScript, Java, Kotlin, Go, Solidity
Databases: Apache Cassandra, Amazon DynamoDB, CockroachDB, MongoDB, PostgreSQL, Redis, Neo4j, Elasticsearch
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

SIS Group Enterprises, Delhi, India: Intern May 2024 – June 2024

- Designed a dynamic executive PowerBI report showcasing total sales, revenue distribution, and key KPIs
- Built visualizations to compare online, social media, store, and outlet sales, aiding competitive strategy planning
- Integrated sentiment analysis and regional market share insights to identify growth opportunities

SIS Group Enterprises, Delhi, India: Intern May 2023 – June 2023

- Implemented file compression and encryption using RSA and DH Key Exchange to ensure data confidentiality
- Designed system to transmit file metadata name, date, signature, hash, followed by file data
- Ensured receiving server correctly merged, decrypted, and decompressed data to user-specified location

PROJECTS

Blockchain Chain of Custody (GitHub) 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

Hyperledger Fabric: Supply Chain Smart Contract (GitHub) Spring 2025
Built and deployed a private blockchain network using Hyperledger Fabric to track product lifecycle in a supply chain.

- Implemented chaincode in Go to manage product creation, ownership transfer, and updates
- Deployed on Docker and initialized the ledger with product states for real-time queries

- Configured Fabric network, enhanced transaction integrity, and ensured enterprise-grade security

Logic Programming-Driven Robotic Warehouse Optimization (GitHub) Spring 2025

Designed a warehouse automation system using LP-driven robots to enhance logistics and minimize human intervention.

- Developed grid-based movement planning and collision-avoidance algorithms for autonomous shelf transport
- Integrated strategic routing for fast order fulfillment and dynamic shelf rearrangement
- Focused on scalability and robustness, achieving improvements in throughput and operational efficiency

Traffic Accident Hotspot Detection Using Machine Learning (GitHub) Spring 2025

Built a predictive system to identify traffic accident hotspots and evaluate accident severity through ML models.

- Created a full data mining pipeline with preprocessing, feature engineering, and model evaluation
- Applied Logistic Regression and Random Forest to address spatial imbalance and improve prediction accuracy
- Extracted high-impact factors like visibility and time of day to guide public safety planning

Context-Aware Health Monitoring App (GitHub) Fall 2024

Developed an Android app that monitors heart and respiratory rates using smartphone sensors and user feedback.

- Used back camera with flash and accelerometer/orientation sensors for real-time vital tracking
- Stored health data locally with symptom logging to assist in health trend analysis
- Enhanced app responsiveness through efficient sensor data processing and contextual insights

Distributed Media Streaming Analytics Dashboard (GitHub) Fall 2024

Engineered a distributed dashboard to analyze content trends and user behavior for streaming services.

- Leveraged CockroachDB and AWS-backed Flask APIs for distributed data routing and storage
- Visualized trends using Streamlit to support decision-making on content delivery and subscriptions
- Simulated streaming datasets to evaluate user engagement, enabling future real-time analytics integration

OTHER WORK EXPERIENCE

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

- Partnered with teaching staff and professor to design course structure and material
- Assisted over 55 students with coursework tasks on Traffic Analysis, Network Intrusion and Network Mapping
- Offered weekly in-person and online Office Hours to resolve conceptual & assignment related doubts

Arizona State University, Tempe, AZ: Fulton Peer Mentor August 2023 – May 2025

- Mentored over 430 freshmen and organized 20+ events with up to 200 attendees for personal & academic development
- Coordinated with peer mentors providing guidance and promoting community development for freshmen students doubts