

# 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

<b>Masters of Science, Computer Science (Cybersecurity)</b> Arizona State University, Tempe, AZ	Graduated May 2025 3.90 GPA
<b>Bachelor of Science, Computer Science</b> Arizona State University, Tempe, AZ	Graduated May 2024 3.52 GPA

## TECHNICAL SKILLS & CERTIFICATIONS

**Core:** Django, Node.js, Laravel, .NET, MAUI, Android Studio, React Native, 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, 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