Utkarsh Parashar

Charlotte, NC

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Education

University of North Carolina, Charlotte **Aug. 2025 – May 2027**
Master's in Cybersecurity *Charlotte,USA*

Vellore Institution of Technology **Sep. 2021 – June 2025**
Bachelors in Computer Science Engineering *Bhopal, India*

Relevant Coursework

- Artificial Intelligence
- Information Security
- Secure Systems
- Penetration Testing
- Networking
- Computer Architecture
- System Programming
- Digital Forensics
- Secure Coding Practices
- Reverse Engineering
- Logic and system design
- Software Development
- Probabilistic Mathematics

Experience

University of North Carolina Charlotte **Jan 2026 – Present**
Teaching Assistant *Charlotte, NC*

- Helped revise and structure syllabus for **ITIS 6200 - Principles of Information security and Privacy**
- Programmed scripts, apps, tools and weekly labs to help students understand secuirty principles and encryption algorithms alongside blockcipher operating modes.
- Crafted intentionally controlled vulnerable environments for students to experiment and perform analysis.
- Responsible for hosting regular TA sessions to explain important logic and exploits like XSS and SQLi

University of North Carolina Charlotte **May 2026 – Jul 2026**
Research Assistant *Charlotte, NC*

- Pitched ARGUS - Adaptive safety for LLMs via internal mechanistic interpretability methods
- Programmed and trained Sparse Auto-Encoders to understand and interpret meaningful internal signals and features

The Globalizers **July 2024 – Nov 2024**
Technical intern *Indore, India*

- Responsible for the development of iOS and Android applications for the business while maintaining security protocols
- Created machine learning algorithms to ensure maximum learning rate in students by personalizing data feeding algorithms

Fllink **February 2024 – May 2024**
Security Analyst Intern *Bhopal, India*

- Monitored and analyzed security incidents to identify threats and recommend appropriate actions, resulting in a 30% decrease in the time taken to respond to security breaches.
- Communicated effectively with stakeholders at all levels to raise awareness of cybersecurity risks and promote a culture of security consciousness.

Defence Research and Development Organisation **October 2023 – February 2024**
Artificial Intelligence Intern *DRDO, Ministry of Defence, India*

- Developed neural networks and simulation systems for military intelligence purposes, achieving accuracy metrics of 92% in identification assessment.
- Collaborated with a team of scientists to design and implement a comprehensive intelligence-gathering system that integrated data from multiple sources.
- Conducted safety research on the project using simulation systems.
- Presented findings and recommendations to senior military officials, influencing decision-making and improving the effectiveness of intelligence operations.

Research work

Secure Federated Learning for Collaborative Intrusion Detection Systems **December 2024**
- Published in a SCOPUS indexed journal, Nanotechnology Perceptions Vol.20,S16 ISSN: 1660-6795. Linked here

Building Resilient AI-enabled Detection Systems for .NET Threats **December 2024**
- Published in a SCOPUS indexed journal, Nanotechnology Perceptions Vol.20,S16 ISSN: 1660-6795. Linked here

Cryptographic Protocol Design for Cloud Environments **December 2024**
- Published in a SCOPUS indexed journal, Nanotechnology Perceptions Vol.20,S16 ISSN: 1660-6795. Linked here

Projects

Hyperion | *PostQuantum Encryption, memory-safe retrieval, password management* **January 2026**

- Developed a cross-platform, zero-dependency password manager in C, implementing XChaCha20-Poly1305 authenticated encryption and a custom 64MB memory-hard KDF to mitigate GPU brute-force attacks; Coupled with a hardware-agnostic entropy harvester that seeds a custom CSPRNG using nanosecond-precision keystroke timing, eliminating reliance on compromised OS-level RNGs.

Marvin | *Log parsing, Crossplatform auditing, Forensic collection* **2025**

- Crafted a lightweight, cross-platform forensic log collection tool designed for simplicity, modularity, and verifiable integrity. Unlike general-purpose log shippers.

ElfEnc | *Linux Binary, Encryption, Cryptography* **2025**

- A security tool that encrypts ELF binary executables using password protection, custom cryptographic algorithms (modified RC4 stream cipher and key derivation), and in-memory execution to create uncrackable static executables for Linux systems.

Peepapp | *Decompiling, Android Security, Privacy* **September 2024**

- Developed a full-scale python library to decompile android apps and determine using code signatures the invasive permission and access each app has over devices.

Meowlinter | *SAST, Lexical Tokenization, Secure programming, Cybersecurity* **May 2024**

- Developed a static analysis tool specifically designed to identify potential security vulnerabilities in C/C++ source code. Enabling users to perform code patching and vulnerability assessment simulations.

Attack-ml | *, Python, Classification, Machine learning, Packet-deconstruction* **April 2024**

- Developed a machine learning pipeline for preprocessing network data, including data cleaning, balancing, and analysis complete with active sniffing for all existing protocols, ensuring comprehensive network monitoring.

GoodSniffer | *Networking, Python, WinAPI, Packet-deconstruction* **November 2023**

- **Conceptualized** and developed GoodSniffer, a packet sniffer that surpasses Wireshark in its capabilities with advanced features to capture all types of headers and data in hex, raw, and ASCII formats.

Technical Skills

Languages: C/C++, Python, Rust, HTML/CSS, JavaScript, SQL, Go
Developer Tools: IDEs, Google Cloud Platform, Git, AWS, Azure, Embedded systems
Technologies/Frameworks: System programming, Linux kernel, Bash scripting, Git, OSINT, AI-driven development

Certifications

EC-COUNCIL Ethical Hacking Essentials
The Bits and Bytes of Computer Networking
Google Cybersecurity Professional
EC-COUNCIL CEH - Certified Ethical Hacker - Utkarsh Parashar, ECC5280194673
NPTEL - Blockchain and its Applications

Leadership / Extracurricular

FORTRESS Research Lab **January 2026 - Present**
Member *UNCC*

- Active discussion leader and member of Dr. Xiang's Formal Techniques for Resilient and Secure Systems Lab
- Brainstorm and contribute to the research group's ongoing projects.
- Hold weekly discussions and present new research gaps and potential implementations.

CyberWarriors - CyberSec Enthusiasts Club **February 2022 – July 2024**
President and co-founder *VIT*

- Founder of the on-campus cybersecurity enthusiasts club.
- Organized events and educational bootcamps for juniors to gather insights from upperclassmen.
- Managed VMs, recorded results, propagated findings.