

# ATHARV ASHISH GARG

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Location: Hyderabad, India | DOB: 22/02/2005

A Computer Science learner specialising in cyber security, machine learning and cryptography, with proven experience in impactful technical solutions.

## COMPETITIONS & AWARDS

**Shellshock CTF** - Winner (Team of 4). Cyber security competition

11/2025

- 1st Place among ~40 teams (>200 participants) at Mahindra University; organised by **5th Bridge Technologies**; prize ₹30,000 (20 Nov 2025).
- Led web & API exploit strategy and coordinated rapid vulnerability triage for flags.

## WORK EXPERIENCE

**Project Kairos** - Lead Researcher. Uni. logistics with evolutionary AI. 08/2025 - Present

- Engineering a multi-objective optimisation engine using **Genetic Algorithms** to solve the NP-hard University Timetabling Problem (UTP), balancing thousands of complex constraints including faculty availability, room capacity, and student course preferences.
- Implementing an **Interactive Evolutionary Computation (IEC)** framework, enabling a human-in-the-loop approach that allows administrators to guide the algorithm toward a Pareto-optimal set of solutions, reflecting nuanced institutional priorities beyond simple constraint satisfaction.

**Black Hole Sim.** - Project Lead. Graphics optimisation for edge devices 08/2025 - 09/2025

- Developed a high-fidelity simulation of the Sagittarius A\* black hole, porting and optimizing a C++ implementation into Rust to leverage modern performance and safety features.
- Engineered the simulation for GPU acceleration using Apple's Metal Performance Shaders (MPS), achieving significant performance gains in rendering complex gravitational lensing and accretion disk physics.

**Social Credit** - Project Lead. Fun neo-brutalist themed credit system 08/2025 - Present

- Engineered a full-stack social currency application (for Social Computing, CS4222) leveraging **Next.js 15**, **TypeScript**, and **MongoDB** to manage user-to-user transfers, an admin-controlled economy, and leaderboards. The project, featuring secure email auth with httpOnly tokens.

**AI+People** - Founder. Disrupting social connections with AI. 12/2024 - 04/2025

- **Connecting people through AI** agents by enhancing social interactions using natural language processing and previous learnt social cues.
- Helping people understand their friends in a language of their own; invited by **FR8**, a finnish incubation program, to continue building.

**TBort** - Founder. Printing money with AI. 01/2025 - Present

- Personal investment platform that uses a **multi model** approach to analyse market trends, predict stock movements, and provide personalised investment recommendations.
- Designed to run on a **low compute** environment and optimize resource usage for cost-effective operation.

**Build & Ship** - Head Builder. Building & shipping cool tech. 11/2024 - 02/2025

- Established T-Works defense CoE prototype manufacturing business model.

**MU Calendar Synchronous** - Project Lead. Uni. calendar made easy. 11/2024 - 02/2025

- Developed a scalable calendar platform for 1,500+ users to sync the university ERP with personal calendars, achieving 99.9% **uptime**. Secured a Tech Mahindra grant, leading to a \$10,000 system valuation for potential external deployment.

<b>Euclid: Mahindra University - Full-Stack Developer.</b>	08/2024 - Present
• Host & extend LMS on local Caddy infra with custom IDE/code runners & performance optimization.	
<b>Enigma (CS Club) - R&amp;D Specialist.</b>	02/2024 - 07/2025
• Led Mirai CTF & hackathon ops; delivered maze solver & notification systems.	
<b>Nexus - Head of Technology.</b> Connecting & training ATCs of next gen.	06/2022 - 04/2024
• ATC simulation with 200+ concurrent flights & validated traffic API for ~200 weekly users.	
<b>Notepad for Aviators - Founder.</b> A notepad designed to reduce pilot workflow	12/2022 - Paused
• Open-source pilot workflow tool syncing flight data with real-time performance calculations.	
<b>OhmWay - Project Lead.</b> Navigate mazes through electricity.	02/2024 - 03/2024
• Maze pathfinding modeled as electrical circuits (PySpice/OpenCV) with interactive Flask visualization.	
<b>EVOLVE: Evolutionary Virus Lab Environment - Founder.</b>	09/2024 - Paused Temp.
• Built a cybersecurity research platform with <b>multi-layered</b> sandbox environments and real-time monitoring protocols	
• Developed <u>machine learning models</u> to analyze threat patterns and predict vulnerabilities; created <b>adaptive defense</b> systems and quarantine protocols for testing against polymorphic threats	
<b>NH-ZKP - Lead Researcher.</b>	04/2023 - 08/2023
• Neural network hash-based authentication research inspired by ZK proofs; benchmarked vs SHA256 & conventional methods.	
<b>Smart Data Packet Movement - Lead Researcher.</b> My first paper publication	01/2021 - 07/2021
• Published packet modification model at Internet Layer to improve routing speed & efficiency.	

## SKILLS & CERTIFICATIONS

**Languages:** Rust, Java, Python, C/C++, Bash, TypeScript, HTML, CSS, MySQL, Markdown

**Frameworks:** Linux, React, MongoDB, ERP, Flask, Docker, Git, PyTorch, NumPy

**Security Tools:** BurpSuite, nmap, Penetration Testing, Cryptography

**Certifications:** THM Jr. Penetration Tester, THM CompTIA PenTest+, THM Pre Security

## EDUCATION

<b>Summer School on AI by CVIT - IIIT Hyderabad</b>	07/2025 - 07/2025
Successfully completed the summer school on AI	
<b>B.Tech in Computer Science And Engineering - Mahindra University</b>	08/2023 - Present
CGPA: 8.00/10.00 (Until 4th Semester)	
<b>A Levels - JBCN International School, Borivali</b>	03/2021 - 06/2023
Awarded "The Most innovative student of the year", co-directed a programming club, chaired MUNs and played basketball whilst being a food connoisseur	