Akshitha Peguda

Bachelor of Technology
in Computer Science and Engineering
Indian Institute Of Technology, Ropar

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Education

Degree	Institute/Board	CGPA/Percentage	Year
Bachelor of Technology	Indian Institute of Technology, Ropar	6.98 CGPA	2021-2025
Senior Secondary	Telangana State Board of Intermediate Education	98.6%	2021
Secondary	Telangana State Board of Secondary Education	10 CGPA	2019

Experience

- **CodeUnity** *May. 2024 - Aug. 2024*
  Software Engineer Remote
  – Worked as a **Backend Development Intern**, building and deploying backend for a production-grade matrimony platform. (**Spring Boot**)
  – Collaborated within a team of 5 developers to design and implement secure, scalable features including profile discovery, user verification, real-time admin controls, and **JWT-based authentication with role-based access**, enhancing platform security and user management.
  – Led deployment efforts by configuring **AWS EC2** instances and **MySQL on RDS** for reliable data persistence; integrated RESTful APIs with frontend clients (**Next.js and React.js**) using Axios, and deployed the frontend on **Vercel**, achieving a seamless and performant user experience.

Projects

- **LLM as an Attack Simulator** *Jan. 2025 - May. 2025*
  Bachelor's Term Project
  Tech stack: Python, OpenAI GPT APIs, Gensim, scikit-learn
  – Developed a simulator using **GPT-4o** to generate over **50+** structured attack and benign log templates, across multiple hosts.
  – Used **Mitre Att&ck** top 10 stages to create targeted prompts, enhancing the attack relevance and depth.
  – Incorporated **prompt engineering** techniques to simulate spear-phishing, BEC, and data exfiltration attacks.
  – Evaluated simulator effectiveness using **Word2vec** and **TF-IDF Cosine Similarity** on existing datasets, achieving **98.52%** similarity.
  – Demonstrated how LLMs can both simulate and assess AI-driven cybersecurity threats in a controlled environment.

- **Portfolio Optimization** *Jan 2024- May 2024*
  Deep Reinforcement Learning Project **Github**
  Tech stack: Python, PyTorch, OpenGym
  – Engineered a portfolio management model using **Deep Reinforcement Learning** (PPO/TRPO), achieving **3.5%** cumulative returns and reducing drawdown by **27%** compared to baseline models.
  – Implemented Sortino Ratio as a reward function to improve risk-aware learning, leading to a **40%** improvement in annual returns under volatile market conditions.
  – Designed and tested multiple DRL architectures with custom feature extractors, improving **training stability** and **policy consistency** across market scenarios.

- **CauseCraft** *Jan 2024- May 2024*
  NGO hosting and networking website **Github**
  Tech stack: MERN, JWT, Canva
  – Built an **NGO hosting platform**, collaborating with a 10-member team to let organizations create and manage websites using templates.
  – Developed end-to-end task management workflows, facilitated volunteer engagement, and embedded automated **email notifications**, enabling seamless coordination and real-time updates across NGO platforms.
  – Led the **frontend** team and co-designed the **system architecture**, implementing responsive UI components to ensure a smooth and intuitive user experience.

Technical Skills

- **Programming Languages**: Python, C, C++
- **Web Development**: MERN, Django, Spring Boot
- **Databases**: MySQL, PostgreSQL, MongoDB
- **AI Tools**: OpenAI, Phind, DeepSeek, Gemini, Llama
- **Tech Tools**: Git, GitHub, LaTeX
- **Cloud & DevOps**: AWS (EC2, RDS, S3), Docker
- **Other Skills**: Competitive Programming (Codechef, LeetCode), Web Development, Teamwork

Key courses taken

- **CSE**: Machine Learning, Reinforcement Learning, Data Structure & Algorithm, Database Management System, Computer Architecture, Operating Systems, Computer Networks, Software Engineering, Analysis and Design of Algorithms
- **Maths**: Foundations of Data Science, Theory of Computation, Calculus, Differential Equations, Probability and Statistics

Positions of Responsibility

- ,Coordinated hospitality logistics for **Aarohan**, IIT Ropar's annual fest *2023*
- , Active member of **Vibgyor** (Fine Arts Club); contributed to event visual design as part of the decoration team. *2023*

ACHIEVEMENTS

- **NASA**,Selected for **NASA Planetary Colonization Challenge (2018)** – conceptual design *2018*
- **IIT Jee**, Ranked amongst top **1%ile** amongst **1.2 millions** candidates *2021*