

Arpan Kumar Mandal

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PROFESSIONAL SUMMARY

A Computer Science enthusiast with expertise in AgenticAI, AI/ML, cybersecurity, and software development. Passionate about creating innovative solutions that bridge technology gaps and enhance system performance through advanced algorithms and cutting-edge technologies.

EDUCATION

SRM Institute of Science and Technology B.Tech in Biotechnology with specialization in Genetic Engineering	2022 – 2026
Kendriya Vidyalaya Sangathan, Hyderabad Class XII (CBSE)	88% — 2022
Kendriya Vidyalaya Sangathan, Mathura Class X (CBSE)	89% — 2020

TECHNICAL SKILLS

Programming: Python, Rust, CUDA, C++, JavaScript, SQL
AI/ML: Machine Learning, Deep Learning, Generative AI, XGBoost, TensorFlow, PyTorch
Technologies: FastAPI, Linux Systems, DevOps, Docker, Git, Vector Databases, RAG
Cybersecurity: Penetration Testing, Vulnerability Assessment, Network Security, DDoS Protection
Data Science: Data Visualization, Statistical Analysis, Bioinformatics, Genomics Analysis

PROJECTS

Stress Tolerance Gene Prediction ML Model	Sep 2024 – Nov 2024
<ul style="list-style-type: none">Created an ML pipeline to predict stress-tolerance genes in <i>Deinococcus radiodurans</i> using DNA sequence features.Developed a computational tool for rapid genome screening, enabling bioengineering applications.	
XGBoost CO₂ Adsorption Prediction Model	Aug 2024 – Oct 2024
<ul style="list-style-type: none">Implemented an XGBoost ML model to predict the adsorption capacity of nano-materials for Carbon Capture systems.Achieved high accuracy in identifying optimal configurations for CO₂ capture, supporting advanced material design.	
Samsung AI-OS – Voice-Controlled Cybersecurity Platform	Apr 2024 – Jun 2024
<ul style="list-style-type: none">Developed a voice-controlled AI automation system combining Kali Linux for cybersecurity workflows.Enabled natural speech commands for complex security operations, automated penetration testing, and multi-tool management.	
GPU Vector DB – AI Document Processing Platform	Jan 2024 – Mar 2024
<ul style="list-style-type: none">Built a GPU-accelerated AI platform for financial services with intelligent Q&A, multi-format support, vector search using Qdrant, and multiple LLM integrations.Optimized the platform with FastAPI, parallel processing, and an advanced RAG architecture for high-performance document analysis.	
AI Medical Image Scanner	Nov 2023 – Dec 2023
<ul style="list-style-type: none">Built an AI-powered medical image analysis system using generative AI for enhanced diagnostic accuracy and automated disease detection.	
High-Speed AES Encryption with GPU Computing	Nov 2023 – Dec 2023
<ul style="list-style-type: none">Implemented a GPU-accelerated AES encryption system using CUDA for high-performance cryptography.	

PROFESSIONAL EXPERIENCE

SafelyAPK — Security Analyst Intern	Chennai, TN — Jun 2024 – Jul 2024
<ul style="list-style-type: none">Conducted reverse engineering on mobile applications to identify vulnerabilities, malware, and data leaks.Enhanced mobile app security through advanced static and dynamic analysis techniques.	
SRM-IST, CENTINEL — Founder/Vice-President	Chennai, TN — Oct 2023 – Oct 2024
<ul style="list-style-type: none">Founded a cybersecurity club focused on hands-on learning, workshops, and competitions for practical skill development.	
Fiverr — Freelance Developer	Remote — Feb 2023 – Jun 2023
<ul style="list-style-type: none">Delivered coding solutions to global clients, specializing in Python development, automation, and web applications.	
SRM-IST, RUDRA — Software Developer	Chennai, TN — Nov 2022 – Feb 2024
<ul style="list-style-type: none">Contributed to a Mars Rover development project, gaining experience in robotics, embedded systems, and team collaboration.	

RESEARCH EXPERIENCE

Encryption as a Service (EaaS) Platform Development	May 2024 – Present
<ul style="list-style-type: none">Building a comprehensive encryption platform with API integration for enterprise security solutions.	
AI-Based Virtual Psychiatrist Development	Oct 2023 – Jan 2024
<ul style="list-style-type: none">Developed a Generative AI-based LLM with hallucination-reduction techniques for ethical mental health support.	

ADDITIONAL PROJECTS & CERTIFICATIONS

DDoS Protection System: Built a robust firewall application with real-time attack detection and mitigation.
JETayu Mars Rover: Designed a lightweight exploration rover with sensor integration and chemical testing capabilities.
Certifications: Advanced Machine Learning (Udemy), System Scaling and Architecture (Udemy)