

Pratik Sarkar

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EXPERIENCE:

Nebula Space Organization

KIIT, Bhubaneswar

Programming Dept

Mar 2023 - May 2024

- Identifying requirements and planning development of core programs for a GRB-detecting satellite, for black hole research.
- worked with an agile team of 9 in managing the CubeSat software lifecycle, collaborating closely with cross-functional teams.
- Establishing a comprehensive test environment with 90-95% coverage, reducing integration issues by 45%.

Independent Cybersecurity Research

- Exploited 3 Android devices in a controlled environment using payload-injected APKs via the Metasploit framework, uncovering 9 critical security gaps and recommending 6 protective measures. Mar 2024
- Injected custom DNS into a router and logged 150+ Wi-Fi requests using Cisco Umbrella service to analyze network traffic.
- Conducted ethical hacking simulations, exploited Wi-Fi passwords using WPS loopholes and brute force methods with a 60% success rate, and analyzed 300+ packets with Wireshark to capture unprotected passwords posted over HTTP.

PROJECTS:

1. Product Trustworthiness Prediction System-

March 2025

- Developed a machine learning model using Capsule BiLSTM to predict product trustworthiness based on customer reviews.
- Implemented NLP techniques (tokenization, TF-IDF) for feature extraction and text processing.
- Built and deployed a RESTful API using Flask to serve predictions to frontend applications.
- Utilized Pandas for data manipulation and Gzip for handling compressed datasets.
- Enabled CORS in Flask to allow seamless frontend-backend communication.

2. Music Recommendation System-

October 2024

- Built a recommendation system that suggests similar types of music using NLP, tokenization, and machine learning.
- Developed a frontend using Streamlit.
- Integrated Spotify API via Spotipy to load album covers.

EDUCATION:

- Kalinga Institute Of Industrial Technology** (Completed specialization in Data Structures, OS, OOP Concept, ML, Software Project Management, Computational Intelligence) Nov 2022- 7.03 CGPA
- D.A.V Model School- Durgapur** Completed coursework in Computer Science With Python. June 2022

OTHER:

Certifications: Machine Learning and Deep Learning Specialization(Coursera),Introduction to Cybersecurity(Cisco),Cyber Threat Management(Cisco),Introduction to Ethical Hacking(Great Learning),AWS Academy Cloud Foundation and Architecture

Achievements: First runner up in AISOc Hackathon conducted by KIIT, 4/4 PR MR requests accepted in Hacktoberfest.

Volunteering: Little Paws Care on field volunteer for Stray and Wounded dogs,

Extracurricular: Have played for district level basketball championship and have participated in Nationals Selection, played for my Club in various cities while proudly representing my club.

TECHNICAL SKILLS:

Languages : Python , Java (Novice), JavaScript (Novice), DART(beginner),HTML&CSS.

Development Tools and Concepts : REST API , Git version control, Data Analytics,BeautifulSoup, Scrapy, ScraperAPI, Nmap, Wireshark
PyTorch, Scikit-learn, NumPy, Pandas, Streamlit.

Software and Applications : Visual Studio Code, Github, Notion, Figma, LucidChart, Microsoft Teams.

Skills: Data Structures and Algorithms, UI/UX Design, Cloud Computing, Database Management, Marketing, Data Analysis