Arpit Sengar

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Professional Summary

Results-driven Software Engineer with experience in Machine Learning, Information Retrieval, Backend Development and Computer Vision. Proficient in programming languages including Python and C++. Adept at designing and deploying scalable systems, optimizing performance, and solving complex technical challenges. Passionate about leveraging artificial intelligence and large-scale system design to create impactful solutions.

Education

VIT Bhopal University, B.Tech. in Computer Science — Sept 2022 – Aug 2026

- GPA: 7.8/10.0
- **Relevant Coursework:** Distributed Systems, Machine Learning, Data Structures, Algorithms, Networking
- **Co-Curriculars:** President, Omdena VITB Chapter - Led and contributed to 10+ open-source projects.
- **Achievements:** Selected for the finals of Smart India Hackathon (SIH) 2024.

Experience

SDE Intern, Simplify3x – Bangalore, India — Oct 2024 – Dec 2024

- Improved chatbot response accuracy by developing a context-aware RAG-based system that integrated retrieval and generation techniques.
- Designed and implemented bidirectional communication using WebSocket connections.
- Optimized conversational AI through enhanced NLP and real-time data streaming techniques for seamless user interactions.

AI ML Intern, Paritranaya Global Pvt. Ltd. – Bhopal, Madhya Pradesh — Jun 2024 – Aug 2024

- Built a CDSS-based ML model for skin lesion detection using Grounding DINO with Meta SAM, enhancing diagnostic accuracy
- Deployed the solution as an API on Hugging Face for scalable and efficient medical image analysis

Junior ML Engineer, Omdena – Remote — Apr 2024 – Jun 2024

- Led deployment of team-developed models and APIs, ensuring scalable and reliable integration of solutions.
- Developed and fine-tuned a sentiment analysis model using Google BERT, improving classification accuracy across diverse text inputs.
- Worked extensively with Unix/Linux environments to preprocess data and deploy machine learning models.

SDE Intern, Rex Industries – Bhopal, Madhya Pradesh — Nov 2023 – Apr 2024

- Developed computer vision scripts using OpenCV with a focus on accurate body pose estimation
- Specialized in implementing efficient solutions for real-time human pose tracking and analysis
- Worked with ROS (Robot Operating System) to integrate computer vision modules with robotic systems for enhanced automation.

Projects

Personal NAS with Nextcloud — arpy8/raspberry-pi-nas

- Deployed a personal NAS (Network Attached Storage) using Nextcloud on a Raspberry Pi 4B, enabling secure file storage and sharing.
- Configured a Linux-based environment with Docker and Nginx for efficient containerized deployment.
- Tools Used: Raspberry Pi 4B, Nextcloud, Docker, Nginx, Linux, SSL/TLS

Plant Disease Detection — arpy8/plant-disease-detect

- Developed a plant disease detection API using a Convolutional Neural Network (CNN) model built from scratch.
- Achieved 90% accuracy in classifying plant diseases across multiple categories using a custom dataset.
- Deployed the model as a RESTful API for seamless integration with mobile and web applications.
- Tools Used: Python, TensorFlow, Flask, REST API, Docker

Baatcheet: Video Calling Application arpy8/baatcheet

- Developed a real-time video calling application using WebRTC for peer-to-peer communication.
- Deployed the application on Hugging Face Spaces, ensuring scalability and ease of access.
- Tools Used: WebRTC, JavaScript, Python, Flask, Hugging Face Spaces

DisDial: Terminal-Based IRC arpy8/disdial

- Built a terminal-based IRC (Internet Relay Chat) application for real-time communication in a common server.
- Integrated Discord as the backend server for managing chat rooms and user sessions.
- Implemented features like user authentication and message broadcasting.
- Tools Used: Python, Discord API, Socket Programming, Terminal UI Libraries

Myoelectric Prosthetic Hand with App Control arpy8/Team-Hastakriti

- Designed and developed a myoelectric prosthetic hand controlled by EMG (Electromyography) sensors to detect muscle signals.
- Implemented advanced signal processing techniques, including special filters, to remove noise and improve accuracy.
- Built a React Native mobile app using WebSockets for real-time control and monitoring of the prosthetic hand.
- Integrated hardware and software components to enable seamless communication between the app and the prosthetic hand.
- Tools Used: EMG Sensors, React Native, WebSockets, Python, Signal Processing, Arduino

Technologies

Languages: Python, Java, C, C++, JavaScript, TypeScript

Domains Covered: Machine Learning, Information Retrieval, Networking, Data Storage, Web Development, App Development, Backend Development, Frontend Development, Computer Vision, Data Science, DevOps

Softwares & Tools: Unix/Linux, Docker, AWS, Git, GitHub, Selenium, Postman, Fusion 360, Figma, Adobe Illustrator, Blender