

Soumyashis Sarkar

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Education

VIT Bhopal University

Bhopal, MP

Bachelor of Technology in Computer Science and Engineering

Oct 2022 – Aug 2026

- CGPA: 8.39/10.0
- Relevant Coursework: Data Structures & Algorithms (DSA), Database Management, Software Engineering, SDLC

Ryan International School, Sanpada

Navi Mumbai, India

Higher Secondary Certificate (12th Grade)

Jul 2020 – Jul 2022

- Percentage: 72.5%

St. Mary's ICSE School, KK

Navi Mumbai, India

Senior School Certificate (10th Grade)

Apr 2020

- Percentage: 97.8%

Work Experience

Machine Learning Intern

Apr 2023 – Dec 2024

Omdena

Remote

- Collaborated with 40+ engineers using Git version control, Agile methodologies, and SDLC practices and implemented REST APIs for system integration
- Built comprehensive unit tests achieving 85% code coverage using JUnit framework and participated in system architecture discussions and conducted peer code reviews

Projects

Real-Time P2P Video Communication Platform | Node.js, WebRTC, JavaScript, Socket.io, HTML, CSS May 2025

- Built scalable real-time video communication platform using Node.js backend and WebRTC technology
- Implemented WebSocket-based signaling server handling 50+ concurrent room connections with 99.9% uptime
- Developed comprehensive room management system with JWT-based user authentication and session control
- Optimized peer-to-peer connection establishment reducing connection latency by 40% through DSA optimization
- Created responsive web interface with real-time error handling and cross-browser compatibility (Chrome, Firefox, Safari)

File Upload & Sharing Service | Node.js, Express, MongoDB, JWT, AWS S3, Redis

May 2025 – Present

- Developing enterprise-grade file sharing platform handling 100+ concurrent uploads following SDLC best practices
- Implementing secure file storage with AWS S3 integration and JWT-based authentication
- Building RESTful APIs for CRUD operations including upload, download, sharing, and granular access control management
- Designed optimized MongoDB schema for file metadata and user permissions, achieving 200ms average query response time using efficient DSA
- Implemented file validation, compression (30% size reduction), and streaming for optimal performance with large files

Urban Green Space Mapping using VM-UNet | Python, PyTorch, CUDA, OpenCV, Docker Dec 2024 – Apr 2025

- Developed hybrid deep learning architecture combining Vision Transformers with UNet for satellite imagery processing
- Implemented scalable model training pipeline using PyTorch and CUDA optimization for GPU acceleration (3x speedup)
- Achieved 82% F1-score and 77% accuracy on 100+ satellite images through advanced data augmentation techniques
- Built containerized training environment with Docker and Conda for reproducible model deployment across platforms
- Optimized model performance reducing validation loss by 15% and improving specificity by 3.5% through hyperparameter tuning

Technical Skills

Programming Languages: Python, Java, SQL, C++, JavaScript

Backend Technologies: Node.js, REST APIs, WebRTC, Socket.io

Development Tools: Git, VS Code, Kaggle, AWS, Docker

Software Engineering: Object-Oriented Programming, Design Patterns, System Architecture, Agile Methodology, SDLC

Core Skills: Analytical Thinking, Excellent Communication, Team Collaboration, Problem Solving

Certifications & Achievements

Professional Certifications: IBM DevOps and Agile Development, IBM Blockchain Developer, NPTEL Cloud Computing, NPTEL Marketing Analytics, Coursera Deep Learning and Neural Networks with Keras