ARSH MAHESHWARI

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EDUCATION

JIET Institute of Design and Technology | Jodhpur, Rajasthan September 2023 – May 2027
B. Tech Computer Science, Specialization: Artificial Intelligence and Machine Learning

JESC (JIET Entrepreneurship and Development Cell) | JIET Institute of Design and Technology
Core Member

Relevant Coursework: Data Structures and Algorithms, Operating Systems, Machine Learning, System Design, Software Engineering, Object-Oriented Programming

CGPA: 8.39

SKILLS

- **Programming:** Python, C/C++, JavaScript, SQL
- **Frameworks & Libraries:** FastAPI, Flask, React, Next.js, Tailwind CSS, Bootstrap, PyTorch, Tensorflow, NumPy, Pandas, Matplotlib, Seaborn
- **AI & Machine Learning:** CNNs, NLP, Transformers, LLMs, Hugging Face, LangChain, LlamaIndex, spaCy, Model Training & Evaluation, Hyperparameter Tuning, Model Deployment
- **Developer Tools:** Git, GitHub, Docker, PostgreSQL, MongoDB, Firebase, Hardhat, OpenZeppelin, Yarn, Vercel, Netlify
- **Cloud & DevOps:** API Development, GCP, Microservices
- **Web3 Technologies:** Ethereum, Smart Contracts, Sepolia Testnet, Wallet Integration
- **Soft Skills:** Problem Solving, Research & Innovation, Cross-Functional Collaboration, Agile Development, Communication

WORK EXPERIENCE

Maxgen Technologies Pvt. Ltd: *Machine Learning Intern* June 2025 – August 2025

- Implemented core machine learning algorithms—including Naive Bayes, k-NN, SVM, Random Forest, Decision Trees, HMM, and multiple regression models—to analyze datasets and compare model performance.
- Performed end-to-end data preprocessing, feature engineering, and exploratory analysis using NumPy, Pandas, Matplotlib, Plotly, and Seaborn.
- Developed **QuerySure**, an AI-powered health insurance query processor that uses FastAPI, semantic search, and a fine-tuned insurance-domain transformer model to parse policy PDFs, understand user queries, and generate clause-level automated decisions (approved/rejected).

PROJECTS

QuerySure – AI Powered Health Insurance Query Processor

- Built an AI system using FastAPI and NLP/semantic search to automate health-insurance query resolution, enabling instant pre-assessment and reducing manual interpretation of policy documents.
- Designed a backend pipeline that parses complex insurance PDFs using PyMuPDF, extracts key clauses with spaCy + regex, and generates automated coverage decisions with clear, clause-level justifications.
- Fine-tuned an insurance-domain transformer model (llmware/industry-bert-insurance-v0.1) to perform semantic similarity scoring and sequence classification, improving the accuracy of policy–query matching.
- Delivered a production-ready full-stack solution with a Python (FastAPI) backend and a lightweight HTML/CSS/JS frontend, showcasing practical skills in document intelligence, ML model integration, and explainable decision-making.

CredoPay (Web3 payment platform)

- Developed CredoPay, a full-stack Web3 micropayment and escrow platform built on Ethereum, using a monorepo architecture (Hardhat + Next.js) to support modular smart-contract and frontend development.
- Wrote and deployed Solidity smart contracts on the Sepolia testnet, implementing a programmable escrow system for milestone-based payments and a decentralized marketplace. Integrated OpenZeppelin for contract security and used Hardhat for automated testing and deployment workflows.
- Built a responsive frontend using Next.js, TypeScript, and Tailwind CSS, integrating wallet SDKs (Coinbase Wallet, RainbowKit) and libraries like Wagmi and Viem to enable smooth on-chain interactions. Added QR-based payments and used Zustand + React Query for efficient client-side state and data management.
- Implemented advanced Web3 features including Account Abstraction, ENS integration, and a Universal Wallet ID Registry to streamline identity management and improve user experience. Designed the platform for future multi-chain expansion and included detailed event tracking for transparent on-chain auditing.

MagnifyDX

- Built a CNN-based SAR image colorization model using Sentinel-1 and Sentinel-2 satellite data to enhance geospatial interpretation for landform analysis and environmental monitoring. Trained the model on NDVI, SAR, and RGB datasets to improve clarity and visual usability.
- Developed a medical scan identification and upscaling pipeline using object-detection libraries and a custom dataset of 1,000+ MRI, X-ray, and CT scans. Applied image-enhancement and resolution-upscaling techniques to generate high-definition outputs comparable to 3T MRI quality.
- Implemented advanced image processing modules for upscaling 1.5T → 3T MRI scans and improving thermal/infrared imagery, significantly increasing diagnostic readability and overall image quality for downstream analysis.

ACHIEVEMENTS

- **Winner – Hack-Arya-Verse, Arya College of Engineering & IT, Jaipur**: Built **MagnifyDX**, an AI-powered imaging system featuring SAR image colorization, medical scan enhancement, and diagnostic upscaling, earning first place for innovation and execution.
- **2nd Runners-up – Innovate-A-Thon 3.0, BIT Mesra, Ranchi**: Developed **CredoPay**, a decentralized micropayment and escrow platform on Ethereum, recognized for its strong technical architecture and real-world applicability.
- **Top 10 – Hackground India 2K25, TechVerse NEXUS**: Created **QuerySure**, an AI-driven insurance query processor using NLP, semantic search, and transformer models to automate policy understanding and claim pre-assessment.
- **Top 5 – Reckon 6.0, JIET, Jodhpur**: Built a custom deep learning SAR image colorization model using Sentinel-1 and Sentinel-2 datasets, achieving 90.27% accuracy and significantly improving visual interpretability for geospatial analysis.
- **Shortlisted – Smart India Hackathon 2024**: Selected through a competitive national screening process for proposing a high-impact AI solution aligned with real-world industry problem statements.