

# Harsh Sahu

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## EDUCATION

### SRM Institute of Technology

Bachelor of Technology in Computer Science & Engineering (Data Science), CGPA: 9.50/10.0 Sept. 2022 – Present

### Bharat Ratan School

Higher Secondary Certificate (Mathematics, Physics, Chemistry), 92.8% April 2020 – May 2021

## EXPERIENCE

### Project Engineer

Kalvium

May 2025 – Present

Remote

- Developing enterprise-grade full-stack applications using React.js frontend with Node.js/Express backend, implementing responsive UI components and secure RESTful API integrations for scalable financial web solutions
- Building cloud-native applications on AWS/GCP with containerized deployments, participating in Agile development cycles with focus on clean code practices, automated testing, and regulatory compliance standards

### Software Engineer & Data Analyst

Rento (SRM DEI Startup)

Jan 2025 – May 2025

Chennai, India

- Architected full-stack property management platform using React.js, Node.js, and PostgreSQL, implementing real-time features and advanced search algorithms that improved user engagement by 35%
- Developed machine learning recommendation system using Python and TensorFlow, creating automated data pipelines with risk assessment capabilities that enhanced matching accuracy by 25% through collaborative filtering

### Data Scientist & Backend Developer

Zidio Development

June 2024 – Sept 2024

Remote

- Engineered end-to-end data science solutions using Python, pandas, and scikit-learn, building predictive models for risk assessment and deploying them via Flask APIs with Docker containerization
- Created interactive financial data visualizations using D3.js and Plotly, delivering actionable insights through React-based dashboards that reduced decision-making time by 40% for business stakeholders

### Computer Vision Research Scientist

National Chung Cheng University, Taiwan

July 2023 – Dec 2023

Remote

- Developed real-time computer vision applications using OpenCV, TensorFlow, and PyTorch, creating fraud detection and security monitoring systems with 92% accuracy through advanced deep learning architectures
- Published research findings in international conferences, collaborating with global teams using version control, continuous integration, and agile methodologies for reproducible research outcomes

### Mobile Developer & Data Analyst

SRM Hospitals

Jan 2023 – June 2023

Chennai, India

- Built cross-platform mobile application using Flutter and Dart, integrating with Firebase backend and implementing secure patient data management systems compliant with healthcare regulations and HIPAA standards
- Developed analytics dashboard using Python, SQL, and Tableau, creating automated reporting systems for financial and operational metrics that improved efficiency by 30% and reduced manual processing time

## KEY TECHNICAL PROJECTS

### Blockchain-Secured PII Data Masking Platform | Ethereum, Solidity, Python, React, IPFS, Web3.js

- Architected enterprise-grade document security system using blockchain technology and advanced cryptographic algorithms, achieving 99.99% data integrity with immutable audit trails for sensitive PII information
- Implemented smart contracts in Solidity for decentralized access control and automated compliance reporting, integrating with IPFS for distributed storage and reducing data breach risks by 85%

### 6G AI-Native Network Slice Orchestration System | Python, TensorFlow, 5G Core, Kubernetes, gRPC

- Pioneered next-generation 6G network architecture using AI-driven slice allocation algorithms, implementing reinforcement learning models that optimized network resource utilization by 45% for financial trading applications
- Built intelligent network orchestration platform using microservices architecture with Kubernetes, integrating with 5G Core networks through gRPC APIs and achieving sub-millisecond latency for high-frequency trading systems

### AI-Powered Fraud Detection System | *Python, TensorFlow, VGG19, InceptionV3, OpenCV*

- Published research paper implementing CNN-based fraud detection using VGG19 and InceptionV3 architectures, achieving 94% accuracy in real-time transaction analysis with comprehensive dataset validation
- Optimized deep learning models for edge deployment, reducing computational requirements by 35% while maintaining high accuracy for resource-constrained financial environments

### ChromaGenius: Deep Learning Image Processing | *Python, GANs, PyTorch, Computer Vision*

- Developed sophisticated GAN-based image processing system for document digitization, achieving 20% performance improvement through iterative refinement and advanced training techniques
- Optimized neural network architecture for financial document processing, reducing processing time by 25% while maintaining high quality for regulatory compliance documentation

## ACHIEVEMENTS & RECOGNITION

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**Winner, ITU 6G Hackathon (2025)** - Developed next-generation wireless communication solutions using AI-native network architectures for intelligent resource optimization in financial trading systems

**First Prize, HackTrax Hackathon** - Created innovative fintech application with blockchain integration and real-time data processing capabilities for secure decentralized financial systems

**Research Publication:** "Real-Time Fraud Detection with Deep Learning" - International Conference on Pattern Recognition, demonstrating practical applications of CNN architectures in financial security systems

**Global Rank 496, TCS CodeVita International (Top 1% globally)** - Advanced algorithmic problem solving and competitive programming excellence in financial modeling and optimization

**Top 2000 Global, Meta Hacker Cup** - Demonstrated expertise in complex algorithm design, data structures, and optimization techniques for large-scale systems

## TECHNICAL SKILLS

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**Programming Languages:** Python, Java, JavaScript, C++, TypeScript, SQL, R, Solidity

**AI/ML & Data Science:** TensorFlow, PyTorch, Scikit-learn, Pandas, NumPy, Apache Spark, AutoML, NLP

**Frontend Development:** React.js, Vue.js, HTML5, CSS3, Bootstrap, Tailwind CSS, WebAssembly

**Backend & APIs:** Node.js, Express.js, Django, Flask, Spring Boot, FastAPI, gRPC, RESTful APIs

**Database & Storage:** PostgreSQL, MongoDB, MySQL, Redis, Firebase, Distributed Databases

**Cloud & DevOps:** AWS, GCP, Docker, Kubernetes, CI/CD, Microservices Architecture

**Blockchain & Security:** Ethereum, Solidity, Web3.js, IPFS, Smart Contracts, Cryptography

**Analytics & Visualization:** Tableau, D3.js, Plotly, Jupyter, Statistical Modeling, Big Data Processing

## CERTIFICATIONS & PROFESSIONAL DEVELOPMENT

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**Google AI/ML AICTE Virtual Internship** - Advanced Machine Learning, TensorFlow, and practical AI implementation in financial applications with hands-on project experience

**NPTEL Python for Data Science - Elite Grade (Top 2%)** - Comprehensive training in Python programming, financial data analysis, visualization, and statistical modeling techniques

**AWS Certified Developer Associate** - Cloud computing, serverless architectures, containerization, and modern deployment strategies for scalable financial applications