

# Divyaroop Sagar Kovi

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## PROFESSIONAL SUMMARY

Computer Science student (CGPA: 9.02) with practical experience in Full Stack development and Machine Learning, with emphasis on object-oriented design and data structures. Designed and implemented production-level software – from ML models with 0.93 ROC AUC to a full-stack decentralized messaging application – in individual and team settings, employing Agile development methodologies. Object-Oriented Programming, Data Structures, and Algorithms are a strong foundation to solve complex engineering problems and contribute to the development of efficient systems.

## WORK EXPERIENCE

<b>Exafluence</b>	May 2025 – Jun 2025
<b>Machine Learning Intern</b>	
Designed a predictive modeling pipeline with Python (Random Forest, XGBoost) to predict customer behavior patterns for financial clients.	
Improved data preprocessing tasks by designing an SMOTE algorithm to address class imbalance issues, ensuring model validity and minimizing false negatives.	
Enhanced hyperparameter search techniques with GridSearchCV, maximizing model accuracy (ROC AUC) at 0.93 while ensuring efficiency.	
Worked with senior developers to integrate the model with the existing software infrastructure, ensuring data prototypes satisfied system boundary conditions.	

## PROJECTS

<b>Biased Random Walk for P2P Search</b>	2023–2024
Developed a biased random walk algorithm in Python for unstructured peer-to-peer networks, selecting nodes using softmax to rate candidates based on degree, resource likelihood, and capacity, resulting in a 50% reduction in average hops (3.0 to 1.5) through adaptive learning.	
Created a NetworkX simulation framework to compare performance against flooding and random walk baselines for hops, message cost, and nodes visited, outperformed both approaches at every point.	
Added a query cache and adaptive weight update system to enable the algorithm to self-optimize with repeated execution, directly comparable to real-time optimization in high-performance data processing pipelines.	

<b>Advanced Image Recognition &amp; Information Extraction System</b>	2025
Designed and developed a multi-modal AI solution that utilized dual-engine OCR, spaCy’s NLP library, enhanced preprocessing, YOLOv8 for carrying out accurate automatic document understanding under different lighting conditions, orientations, and qualities of the documents, While following Agile methodology.	
Created adaptive processing modes along with Streamlit frontend to provide real-time feedback, annotated results, and fallback to a different engine based on accuracy for various real-world document queries.	

<b>IPFS-based Decentralized Messaging App</b>	2024
Developed a full-stack, decentralized messaging app with immutable message storage through IPFS (InterPlanetary File System), with a responsive frontend with React and TypeScript, ensuring type safety and maintainability.	
Worked with team of 3 from start to finish of entire software development life cycle (requirements, design, implementation, testing, deployment) using agile development processes and Git version control system	
Designed secure authentication subsystem with Supabase(PostgreSQL), added local caching support for offline messaging, and ensured performance with asynchronous blockchain operations that keep message delivery time under 3 seconds	

## EDUCATION

2023 – Present	B.Tech in Computer Science and Engineering, <b>VIT Chennai</b>	(CGPA: 9.02/10, Current)
2021 – 2023	Class XII, <b>Narayana Junior College</b>	(94.9%)
2011 – 2021	Class X, <b>Bharatiya Vidya Bhavan’s SVV</b>	(96.4%)

## SKILLS

Languages	Python, Java, C, C++, MySQL, Shell Scripting, JavaScript, HTML, CSS, Assembly (8051, 8086)
Core Competencies	Data Structures, Software Development Life Cycle, Agile, Algorithms, Object-Oriented Programming, MySQL, PostgreSQL, Firebase, MongoDB, Elasticsearch, Cloud Computing (AWS), Cryptography & Network Security
Frameworks & Tools	Linux, React, Next.js, Vite, Node.js, Firebase, Git/GitHub, Streamlit, Pinata API
AI & ML	PyTorch, TensorFlow, Pandas, NumPy, Scikit-learn, Matplotlib, YOLOv8, spaCy, MLOps, Exploratory Data Analysis, OCR, Natural Language Processing, Computer Vision, Dimensionality Reduction

## COURSEWORK

Data Structures & Algorithms, Operating Systems, Computer Networks, Cloud Computing, AWS Cloud Architecture, Blockchain Foundations, DBMS, Web Development, Probability & Statistics, Discrete Mathematics, Software Engineering, Cryptography and Network Security, Microprocessors and Microcontrollers, Predictive Analytics