

Guntreddy Kula Prakash

Aspiring SDE | AI/ML Enthusiast | Fresher

Bachelor of Technology

Indian Institute of Information Technology Sri City, Chittoor

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Kula Prakash

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SUMMARY

Adaptable Full Stack Developer and Data Scientist with hands-on experience building scalable MERN applications, cloud-ready systems, and data-driven solutions across diverse domains. Strong foundation in Python, Java, SQL, machine learning, and deep learning, with practical exposure to bioinformatics, geospatial analytics, high-performance computing, and graph neural networks. Proven ability to quickly learn new technologies, apply algorithms and statistical methods to real-world problems, and deliver efficient, insight-driven, user-centric solutions..

EDUCATION

• Bachelor of Technology in Computer Science and Engineering

Indian Institute of Information Technology Sri City, Chittoor

2022-26

CGPA: 8.08

PROJECTS

• WanderLust - Full Stack Rental Platform

Tech Stack: JavaScript, Node.js, Express.js, MongoDB

- Developed a full-stack rental platform (MERN) enabling users to list, book, and review properties.
- Implemented **JWT authentication**, **CRUD operations**, and **dynamic property search** functionality.
- Integrated **cloud/local image uploads** for seamless property management.
- Designed a **responsive UI** ensuring cross-device compatibility.

• StudySphere - Full Stack Learning Platform

Tech Stack: JavaScript, Express, NodeJS, MongoDB

- Built an **interactive course platform** with subject, difficulty, and popularity filters.
- Created **instructor profiles** with booking for live or pre-recorded sessions.
- Implemented **real-time collaborative whiteboard tools** for visual teaching.
- Designed **dashboard views** to track student progress and learning analytics.

• ComplexOne - Unified Commercial Platform

Tech Stack: React, Express, NodeJS, MongoDB

- Engineered a **multi-service booking platform** for restaurants, cinemas, and sports venues.
- Implemented **real-time seat and table reservations** with SMS/email confirmations.
- Added **interactive floor plans**, **pricing tiers**, and **calendar-based scheduling**.
- Optimized backend APIs for faster data retrieval and smoother user interaction.

• Customer Churn Prediction After Discount Campaigns

Tech Stack: Python, Machine Learning, EDA, Business Analytics

- Built an **end-to-end Machine Learning pipeline** to predict **customer churn** after discount campaigns.
- Performed **data cleaning**, **preprocessing**, and **exploratory data analysis (EDA)** to extract **customer behavioral insights**.
- Executed **feature engineering** to derive actionable business metrics and improve model interpretability.
- Used **GridSearchCV** for **model optimization and performance evaluation**.
- Deployed the final model with **Gradio** for **interactive insights**.
- Delivered **data-backed recommendations** to improve **customer retention**, mapping to the “**convert data into actionable insights**” responsibility.

• Genome Sequence Analysis & Classification

Tech Stack: Python, BioPython, ML (Classification models), NumPy, Pandas, Data Cleaning & Feature Extraction

- Designed a bioinformatics pipeline to process and analyze genomic FASTA sequences using Python and BioPython libraries.
- Extracted biologically relevant features from DNA sequences and applied machine learning techniques for sequence classification.
- Implemented data preprocessing, feature engineering, and evaluation workflows to derive meaningful biological insights from raw genetic data.

• Basic Containerized Node.js Application

Tech Stack: JavaScript, Node.js, Express.js, Docker, RESTful APIs

- Developed a Node.js web application and containerized it using Docker to ensure portability, scalability, and environment consistency.
- Configured Dockerfiles and managed application dependencies for efficient deployment in cloud-based environments.

- Gained hands-on experience with containerization, service isolation, and cloud deployment best practices.

• Spatial Data Analysis System

Tech Stack: Python, QGIS, Geo-spatial data formats, Spatial analysis algorithms, Mapping techniques



- Implemented geospatial data processing workflows to analyze and interpret location-based datasets using Python.
- Applied GIS concepts and spatial analysis techniques to extract insights from geographic and spatial data.
- Built visualizations and analytical reports to support real-world geospatial decision-making scenarios.

• Parallel Graph Algorithm Implementation

Tech Stack: C, CUDA, MPI, Python, Performance Benchmarking, CPU & GPU acceleration



- Implemented graph processing algorithms using CUDA and MPI to leverage parallelism across GPU and distributed systems.
- Optimized computation performance by distributing workloads across multiple processing units.
- Evaluated execution efficiency through performance benchmarking and comparative analysis of parallel vs sequential execution.

• Neural Machine Translation using GNNs

Tech Stack: Python, PyTorch, DL, Graph Neural Networks (GNNs), Neural Machine Translation (NMT), NLP



- Designed a Neural Machine Translation system using Graph Neural Networks by representing sentences as graph structures.
- Implemented and trained deep learning models using PyTorch to capture syntactic and semantic relationships in language data.
- Evaluated translation performance using standard NLP metrics and analyzed model behavior across multilingual datasets.

TECHNICAL SKILLS AND INTERESTS

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

Web & Full Stack Development: MERN Stack (MongoDB, Express.js, React.js, Node.js), RESTful API Development, JWT Authentication, MVC Architecture, Server-Side Rendering (EJS), Responsive UI Design, HTML, CSS, Bootstrap, Form Handling & Validation, CRUD Operations, Session Management

Data Science & Machine Learning: Data Cleaning, Exploratory Data Analysis (EDA), Feature Engineering, Predictive Modeling, Supervised & Unsupervised Learning, Model Evaluation & Validation, Statistical Analysis, Deep Learning, Neural Networks, Bioinformatics Data Analysis, Genomic Sequence Processing

Deep Learning & Advanced AI: Graph Neural Networks (GNNs), Neural Machine Translation (NMT), Natural Language Processing (NLP), PyTorch, TensorFlow, Sentence-to-Graph Modeling, Model Training, Evaluation Metrics, Pickle (.pkl) Handling

High Performance & Parallel Computing: CUDA (GPU Programming), MPI (Message Passing Interface), Parallel Algorithms, Distributed Computing Concepts, Performance Optimization & Benchmarking, CPU & GPU Acceleration

Geo-Spatial Technologies: Geospatial Data Processing, GIS Concepts, Spatial Data Analysis, Location-Based Data Modeling, Geographic Visualization Techniques

Libraries & Tools: Pandas, NumPy, Scikit-learn, Matplotlib, Seaborn, PyTorch, TensorFlow, Flask, Gradio, BioPython

Data Analytics & Visualization: Power BI, Tableau, Excel, Dashboard Creation, Data Reporting, Business Intelligence, Data Storytelling & Insight Generation

Databases: MongoDB, MySQL, Schema Design, Mongoose ODM, Data Modeling & Validation

Cloud & DevOps: Containerization, Linux Environments

Software & Platforms: Google Cloud Platform, Jupyter Notebook, Google Colab, VS Code, Git/GitHub, Docker, AWS, QGIS

Relevant Coursework: Data Mining, Machine Learning, Statistics & Probability, Predictive Analytics, Database Management Systems, Cloud Computing, High Performance Computing, Bioinformatics, Graph Neural Networks

Areas of Interest: Full Stack Development, Data Science, Machine Learning & Deep Learning, Cloud Computing, Business Intelligence, Data Visualization, AI & Graph-Based Learning

Soft Skills: Problem Solving, Analytical Thinking, Research-Oriented Mindset, Collaboration & Teamwork, Clear Communication, Adaptability & Continuous Learning

CERTIFICATIONS

• Google Cloud Arcade Champion

• Earned Oracle Cloud Infrastructure 2025 Certified AI Foundations Associate Link

September 2025

• Earned Oracle Cloud Infrastructure 2025 Certified Data Science Professional Link

October 2025

• Earned Oracle Cloud Infrastructure 2025 Certified Generative AI Professional Link

September 2025

• Completed DSA with Java course at Apna College. Link