

# PURNA TEJA TUMMALA

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## PROFESSIONAL SUMMARY

Results-driven Computer Science and Engineering student specializing in Business Systems with strong foundations in full-stack development, machine learning, and database management. Proficient in Java, Python, Spring Boot, React.js, MySQL, and MongoDB with hands-on experience building scalable web applications and implementing machine learning algorithms. Skilled in Data Structures, Algorithms, REST APIs, and Object-Oriented Programming with a proven track record of delivering user-focused solutions and increasing engagement through technical innovation.

## EDUCATION

**B.Tech, Computer Science & Engineering with Business Systems**  
VIT AP University - Amaravati | CGPA: 8.36 / 10.0 | Expected Graduation: 2026

**Senior Secondary (XII)**  
FIITJEE Junior College | Percentage: 78.1% | 2020 - 2022

**Secondary (X)**  
FIITJEE | Percentage: 98.5% | 2019 - 2020

## TECHNICAL SKILLS

**Programming Languages:** Java, Python, C++, C, HTML, CSS, JavaScript, SQL

**Frameworks & Libraries:** Spring Boot, React.js, Flask, Node.js, REST API, JDBC

**Databases:** MySQL, MongoDB, PostgreSQL

**Machine Learning:** Random Forest, XGBoost, LightGBM, Scikit-learn, TensorFlow

**Developer Tools:** Git, GitHub, GitLab, VS Code, Eclipse, Postman, Docker

**Cloud Platforms:** AWS, Azure

**Core Competencies:** Data Structures & Algorithms, Database Management Systems, Operating Systems, Computer Networks, Object-Oriented Programming, Software Development Life Cycle, Agile Methodologies, API Development

**Soft Skills:** Problem Solving, Leadership, Team Collaboration, Adaptability, Analytical Thinking, Communication, Time Management

## PROFESSIONAL PROJECTS

### Movie Ticket Booking System | Full-Stack Web Application

**Technologies:** Java, Spring Boot, React.js, MySQL, RESTful APIs, JDBC | 2024

- Developed a scalable, dynamic movie ticket booking platform using Java Spring Boot backend and React.js frontend, improving user experience and increasing platform engagement by implementing real-time seat selection and booking functionality
- Designed and implemented RESTful APIs for seamless communication between frontend and backend, ensuring efficient data exchange and reducing server response time by 30%
- Architected MySQL database schema with normalized tables for users, movies, theaters, bookings, and transactions, optimizing query performance and data integrity

- Integrated JDBC for robust database connectivity and implemented transaction management to ensure data consistency across concurrent booking requests
- Implemented responsive UI components using React.js, HTML, and CSS, enhancing cross-browser compatibility and mobile responsiveness

## **Diabetic Retinopathy Detection System | Full-Stack Machine Learning Application**

**Technologies:** Python, Flask, React.js, MongoDB, HTML, CSS, Random Forest, XGBoost, LightGBM | 2024 - Present

- Building an end-to-end machine learning application for diabetic retinopathy detection accessible to both doctors and patients, integrating predictive analytics with full-stack development
- Trained and optimized ensemble machine learning models including Random Forest, XGBoost, and LightGBM on medical imaging datasets, achieving model accuracy improvements through hyperparameter tuning and cross-validation
- Developed Python Flask backend with RESTful API endpoints for model inference, patient data management, and prediction history tracking
- Designed NoSQL MongoDB database architecture for storing patient records, medical parameters, appointment data, and prediction results with optimized indexing for fast retrieval
- Created dynamic React.js frontend interface with HTML and CSS for data input forms, prediction visualization, and doctor-patient dashboards
- Implemented end-to-end data pipeline from frontend input through API processing to ML model prediction and database storage

## **CERTIFICATIONS**

- **MongoDB Database Administrator** | MongoDB Inc. | 2024
- **Generative AI Professional** | Oracle | 2024
- **Programming Essentials in Python** | CISCO | 2023
- **Programming Essentials in C++** | CISCO | 2023
- **Gamification as a Business Strategy** | Swayam NPTEL | 2023

## **LEADERSHIP & VOLUNTEERING**

**Core Member – Livit Club (Event Management & Strategy)** | VIT AP University | 2023 - Present

- Coordinated planning and execution of 5+ club events, developing comprehensive marketing strategies that increased average student participation by 25% and enhanced campus engagement
- Collaborated with cross-functional team of 10 core members to manage logistics, delegate tasks, and ensure successful delivery of club initiatives, demonstrating strong project management and teamwork capabilities
- Led initiative to streamline event registration processes through digital platforms, reducing administrative overhead by 40%