# REDDIPALLI SAI CHARISH

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## OBJECTIVE

Passionate about building real-world software that delivers impact at scale. Interested in integrating AI/ML technologies into production systems to create solutions that are faster, smarter, and more efficient.

## EXPERIENCE

- **Tejoule Software System Pvt Ltd** — *June 2025 – Present*
  *ML + Backend Engineer* — Coimbatore, India
  - Integrated **Elasticsearch with LLMs**, enhancing the mail search engine's performance by 30% for faster and more accurate retrieval of enterprise emails.
  - Designed and implemented **ClickHouse + LLM pipelines** for document search, optimizing SQL queries and incorporating natural language responses, reducing query response times by 40%.
  - Engineered a robust **NDA AI pipeline**, utilizing prompt-tuned classification and difflib-based restructuring for precise handling of sensitive legal documents.
  - Developed scalable workflows for **large PDF table extraction**, transforming unstructured contracts into structured datasets, enabling efficient analytics and processing.
  - Automated **table extraction from scanned PDFs** using **OCR and open-source LLMs**, enabling accurate parsing of semi-structured data and improving document digitization efficiency.
  - Designed and deployed **RESTful APIs** using **FastAPI**, ensuring seamless integration of LLM services and creating scalable endpoints to support 100+ internal tools and user-facing platforms.
  - Conducted comprehensive **unit testing and debugging**, achieving a 99% uptime in production and ensuring reliability and robustness across ML and backend modules.
  - Applied low-level design best practices (Factory, Builder, Strategy patterns), improving system modularity, testability, and runtime performance in both ML and backend services.

## EDUCATION

- **Indian Institute of Information Technology, Design and Manufacturing, Kancheepuram** — *2022 - Present*
  *Bachelor of Technology - BTech, Computer Science and Engineering* — Kancheepuram, India
  - CGPA: 8.63/10
  - **Relevant Coursework**: Data Structures | Design and Analysis of Algorithms | Machine Learning | Object-Oriented Programming | Operating Systems

- **FIITJEE Junior College** — *2020 - 2022*
  *Pre-University Education* — Visakhapatnam, India
  - Grade: 97%

## PROJECTS

- **Peppo AI – Video Generation Platform (Intern Challenge)** — *2025*
  *Tools: Node.js, Express, Supabase, React, Tailwind, Replicate API*    [⬤]  [🌐]
  - Developed a full-stack prototype for an AI-powered video generation platform using **React (frontend)** and **Node.js + Express (backend)**.
  - Designed and implemented **secure Supabase authentication** and user management for seamless onboarding.
  - Integrated the **Replicate API** to generate and render AI-driven videos, enabling real-time content creation.
  - Built a responsive UI with **TailwindCSS**, ensuring smooth user experience and interactive workflows.
  - Deployed APIs and services with a focus on scalability, code maintainability, and production readiness.

- **Document Insights Generator using RAG** — *2025*
  *Tools: LangChain, ChromaDB, Streamlit, OpenAI, Cohere, Python, Llama3*    [⬤]
  - Developed a web-based application for querying multi-format documents (PDF, CSV, TXT) using Retrieval-Augmented Generation (RAG) pipelines.
  - Integrated LangChain for document loading, chunking, embedding (Cohere/OpenAI), and conversational retrieval.
  - Used ChromaDB for persistent vector storage and efficient document chunk retrieval.
  - Built an interactive Streamlit frontend with a styled chat interface for natural language querying and document insights.
  - Enabled support for multiple LLMs (OpenAI, Cohere, Ollama's Llama3) with configurable embedding options.

- **ViTalia: Malaria Detection using Vision Transformers** *2024 – Present*
  *Tools: Transformers, PyTorch, TorchVision, TensorFlow* [◯]
  - Developed a Vision Transformer (ViT) solution for malaria detection, achieving a 97.53% accuracy, surpassing the performance of CNN models by 2.13%.
  - Designed a robust neural architecture utilizing pre-trained ViT models, achieving superior performance compared to non-pretrained ViT and Swin Transformer models.
  - Implemented efficient data preprocessing and augmentation techniques to enhance model robustness for diverse medical imaging conditions.

- **Object Detection using Deep Learning** *2025*
  *Tools: PyTorch, OpenCV, ONNX, TensorRT, Torchvision* [◯]
  - Implemented object detection models using YOLOv8 and Faster R-CNN for real-world applications.
  - Developed a YOLOv8-based model for license plate recognition and vehicle detection, optimizing inference time using ONNX runtime and TensorRT.
  - Built a Faster R-CNN ResNet50 model for wheat grain detection, enhancing detection accuracy with advanced data augmentation and optimized anchor tuning.
  - Utilized PyTorch, Torchvision, and OpenCV for training, inference, and visualization of detection results.

## HONORS AND AWARDS

- **Biomimicry Competition – 2nd Place** *March 2023*
  *Vashisht Tech Fest 2023, IIITDM Kancheepuram*
  - Recognized for innovative designs inspired by nature, showcasing interdisciplinary collaboration and problem-solving skills.

## LEADERSHIP EXPERIENCE

- **General Affairs Secretary**
  *Indian Institute of Information Technology, Design and Manufacturing, Kancheepuram* April 2025 - Present
  - Serving as the primary liaison between the student body and administration, addressing student concerns and facilitating campus-wide initiatives.
  - Leading coordination efforts across clubs and councils to streamline communication and optimize resource allocation.
  - Driving institutional improvements through data-backed feedback systems and inclusive decision-making.

- **Cultural Affairs Joint Secretary**
  *Indian Institute of Information Technology, Design and Manufacturing, Kancheepuram* April 2024 - April 2025
  - Member of the Student Affairs Council (SAC) 2024-2025, playing a significant role in promoting diversity and nurturing talents in arts and culture.
  - Organized and managed cultural events that saw a participation increase of over 30%, enhancing student engagement.
  - Spearheaded the organization of **SamgathaX Vashisht 2025**, the first joint cultural and technical fest in years, revitalizing flagship campus events with record-breaking turnout and enthusiasm.

## VOLUNTEERING

- **Training and Placement Cell Volunteer**
  *Indian Institute of Information Technology, Design and Manufacturing, Kancheepuram* July 2023 - June 2024
  - Supported placement activities by managing communications between students and recruiters.
  - Facilitated pre-placement talks and technical workshops, contributing to increased participation and preparedness among students.
  - Maintained databases of student profiles and recruitment schedules to ensure efficient organization.

- **Volunteer for 11th and 12th Convocation**
  *Indian Institute of Information Technology, Design and Manufacturing, Kancheepuram* 2023, 2024
  - Assisted in organizing and managing convocation ceremonies for graduating students, ensuring smooth execution of events.
  - Coordinated with faculty and staff to facilitate the distribution of graduation materials and streamline event logistics.