

# VALLAPURI JAGAPATHI

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## Education

### PES University

*Bachelor of Technology in Computer Science and Engineering (AI/ML)*

CGPA: 8.66

Sep. 2022 – Expected May 2026

*RR Campus, Bengaluru, Karnataka*

## Relevant Coursework

- Data Structures and Algorithms
- Algorithms and Optimizations in Machine Learning
- Deep Learning
- Advanced Data Analytics
- Cloud Computing
- Large Language Models and their Applications
- Database Management System

## Projects

### Face Inpainting using VAE-GAN | *Python, PyTorch, Deep Learning*

Oct 2024 – Nov 2024 (Team of 4)

- Designed and implemented a VAE-GAN hybrid to restore occluded facial regions using the Labeled Faces in the Wild (LFW) dataset.
- Built an encoder-decoder generator for latent representations and a convolutional discriminator for adversarial training.
- Applied random occlusion masks to simulate real-world obstructions (e.g., sunglasses, masks, damage).
- Engineered a composite loss function using adversarial loss, KL-divergence, and reconstruction loss for improved realism.
- Led model architecture design and optimization; collaborated on data preprocessing and output evaluation.
- **GitHub:** VAE-GAN Face Inpainting

### Recommender System – Microservices | *FastAPI, Docker, MongoDB, Nginx*

Mar 2025 – Apr 2025 (Team of 4)

- Redesigned a monolithic recommendation engine into a modular microservices architecture to enhance scalability and maintainability.
- Containerized core services—data, recommender, gateway—using Docker with isolated build environments.
- Implemented Docker Compose for orchestration, handling service discovery, volumes, and environment configs.
- Built a FastAPI gateway to unify endpoints and abstract internal service logic.
- Developed a React/Nginx-based dashboard to monitor microservice health via dynamic polling of `/health` endpoints.
- Spearheaded system decomposition, gateway routing, and health monitoring UI; supported backend logic integration.
- **GitHub:** Recommender Microservices

### Capstone Project Manager | *Python, SQL, Streamlit*

Oct 2024 – Nov 2024 (Team of 2)

- Developed a full-stack system to manage capstone project assignments, submissions, and evaluations.
- Designed a normalized MySQL schema with constraints for student-faculty-project mappings.
- Implemented user authentication and secure password hashing in the backend.
- Created a role-based Streamlit interface for faculty and students to access project data and evaluation records.
- Led schema design, backend logic, and SQL optimization; integrated frontend with team support.
- **GitHub:** Capstone Project Manager

## Technical Skills

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

**Technologies/Frameworks:** Linux, Git, React, Node.js, Express.js, MongoDB, MySQL, FastAPI, Apache Kafka, Apache Hadoop, Docker

**Tools:** VS Code, Google Colab, Jupyter Notebook, GitHub, Postman, Docker Compose

## Extracurricular

### The Alcoding Club

October 2022 – September 2024

*Technical Member*

*PES University*

- Design and review problem statements and test cases for weekly competitive programming contests.
- Volunteered as a non-technical member for Terrathon 3.0