

# VALTERU GOWTHAM

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## Experience

### Prompt Engineer/Model tuning

Winter Break 2024

#### Outlier

- Tested, and refined 100+ high-performing prompts for large language models (LLMs) to achieve 85% higher accuracy and improved contextual relevance across diverse business applications.
- Conducted instruction tuning on pre-trained models, aligning model behavior with specific user intents and achieving a 90% improvement in response consistency across multiple NLP tasks.
- Built and automated evaluation pipelines combining prompt metrics, user feedback, and reinforcement learning, reducing output variability by 40% and enhancing model reliability.

## Projects

### AI-Powered Research Assistant (RAG System) | Python, RAG

July 2025

- Implemented a retrieval-augmented generation (RAG) pipeline across PDFs and web sources to deliver real-time, citation-backed answers with 92% information accuracy.
- Engineered and deployed a semantic search system using FAISS and Sentence-BERT, achieving sub-second vector retrieval on a 50K+ document corpus.
- Developed a Django/Flask-based backend optimized for low-latency (300ms) inference and scalable integration with enterprise-grade applications.

### AI Interview Coach Web App | Python

May 2025

- Architected a full-stack AI Interview Simulator leveraging GPT-3.5 and Django, enabling floating, real-time interview generation with 95% user satisfaction in beta tests
- Automated NLP-driven scoring models for response evaluation across fluency, relevance, and semantic depth, increasing feedback accuracy by 40%.
- Containerized and deployed the application with Docker, integrating secure user authentication and a responsive, production-grade frontend interface.

### Personalized AI Health Assistant Using Multimodal Machine Learning | Python

March 2025

- Customized a multimodal AI health assistant integrating Deep Learning architectures (CNNs, Transformers, Neural Networks) and NLP models (BERT) for personalized health monitoring and diagnostics.
- Refined and trained fusion models combining medical history, sensor data, and textual reports, achieving over 90% accuracy in early disease detection with explainable AI techniques.

## Technical Skills

**Programming Languages:** Python, CPP, JavaScript, SQL

**Cloud Platforms:** AWS (EC2, S3, Lambda, DynamoDB, ECS, API Gateway), Kafka

**Data Engineering Skills:** ETL Development, Data Modelling, Data Streaming, Data Pipelines, Data Integration

**DevOps & CI/CD:** Git, Jenkins, Docker, Kubernetes

**Software Engineering Concepts:** Microservices Architecture, RESTful APIs, PostgreSQL, Agile & Scrum

**Soft Skills:** Communication, Collaboration, Problem Solving, Teamwork, Attention to Detail, Adaptability

## Achievements

Participated in Smart India Hackathon, showcasing strong Creative Thinking and innovation skills.

Ranked among the top 10 participants in the AWS Prompt Engineer Hackathon, demonstrating expertise in prompt engineering, Innovative Solution Design, and technical collaboration.

## Education

### Lovely Professional University

Aug. 2022 – Present

Bachelor of Technology in Computer Science and Engineering; CGPA: 7.71

Phagwara, Punjab

### VDA Junior College

Jun. 2020 – Mar. 2022

Intermediate; Percentage: 95.4%

Visakhapatnam, Andhra Pradesh

### Sasi E.M. High School

Jun. 2019 – Mar. 2020

Matriculation; Percentage: 100%

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