

# POORNA PRANEESHA D

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Senior AI Engineer at lattis.ai with 6+ years in industrial roles. Building AI solutions to enhance customer experiences.

**Focus Areas:** Deep Learning, Generative AI, PEFT (LoRA, RLHF, PPO), RAG.

## EDUCATION

**B.Tech. Chemical Engineering** - Sri Venkateswara University, India

2013 - 2017

**Courses:** Data Structures, C, C++, Algorithm, Calculus, Python Programming, Javascript, MATLAB

**CGPA:** 7.29/10 (Distinction)

**Online. Data Structures Specilization** - University of Colorado Boulder, Online CourseWork

2024-present

**Courses:** Data Structures, Dynamic Programming, Linear Programming Algorithm, Greedy Algorithm, Linear Algebra.

**Grade:** 100%

## AI COURSE WORK: (COURSERA, DEEPLEARNING.AI)

- |   |  |
|---|--|
| 1. Generative AI with Large Language Models - <a href="#">Link</a>        | 4. Advanced Learning Algorithm - <a href="#">Link</a>                |
| 2. Supervised Machine Learning - <a href="#">Link</a>                     | 5. Dynamic Programming, Greedy Algorithms - <a href="#">Link</a>     |
| 3. Approximation Algorithms and Linear Programming - <a href="#">Link</a> | 6. Algorithms for Searching, Trees and Graphs - <a href="#">Link</a> |

## WHITE PAPERS

- |   |  |
|---|--|
| 1. Autonomous Multi-Agent System Using LLM - <a href="#">Link</a> | 4. MultiChannel Ecommerce - <a href="#">Link</a> |
| 2. AI Compute, a technical deep dive - <a href="#">Link</a>       | 5. Messaging App - <a href="#">Link</a>          |
| 3. Data Loss Protection - <a href="#">Link</a>                    | 6. Data Tech Stack - <a href="#">Link</a>        |

## RESEARCH WORK

- |   |  |
|---|--|
| 1. Computer Vision Application - <a href="#">Link</a> | 3. Transformers Variants - <a href="#">Link</a>        |
| 2. AI Inference - <a href="#">Link</a>                | 4. Chat Bot Using Deep Learning - <a href="#">Link</a> |

## AI PROJECTS

### Transformer Architecture - GPT

[GitHub Link](#)

- **Tokenization:** Implemented BPE with regex preprocessing to optimize input text representation. BPE reduces vocabulary size by 40% through iterative merging of frequent byte pairs, while regex normalization enhances segmentation and addresses rare words. This integration results in a 30% reduction in out-of-vocabulary errors.
- **Multi-head Attention(MHA):** Integrated MHA enables the model to attend to various parts of the input sequence simultaneously, dividing embeddings into query(q), key(k), value(v), resulting in more coherent and relevant text generation.

*Key Skills: Python, Transformer Architecture, Multi-Head Attention, PyTorch, NLP, Model Training, Tokenomics.*

### Byte Pair Encoding(BPE) - GPT

[GitHub Link](#)

- **BPE:** Adapted BPE with regex preprocessing to optimize input text representation. BPE reduces vocabulary size by 40% through iterative merging of frequent byte pairs, while regex normalization enhances segmentation and addresses rare words.
- This integration results in a 30% reduction in out-of-vocabulary errors and boosts encoding efficiency by 25%.

*Key Skills: Tokenomics, Regex, PyTorch, Python*

### Tiny Machine Learning - TinyML

[GitHub Link](#)

- Gained expertise in model quantization techniques, reducing precision and optimizing models for low-power, memory-constrained devices, alongside transfer learning for adapting pre-trained models to acoustic, image, and sensor data.
- Developed TinyML applications in image recognition, audio processing, and gesture detection using Arduino hardware, focusing on the efficient deployment of machine learning models to edge devices.
- Explored real-world case studies on deploying TinyML models in constrained environments, emphasizing responsible AI system and the unique challenges of embedded systems.

*Key Skills: Python, Quantaisation, TensorFlow, TensorFlow Lite, TensorBoard, Google Colab, and Jupyter Notebook*

### Automatic Blog Creation and Categorization - Lattis

[Demo Link](#)

- Leveraged the OpenAI API to dynamically generate blog content, utilizing prompts and context for coherent and contextually relevant posts, emphasizing iterative refinement and fine-tuning for optimal output. Developed a blog editor and grouped them into segments, like "Frequent Shoppers" or "Tech Enthusiasts," based on behaviours and preferences.

## TECHNICAL SKILLS

<b>Programming languages/ packages</b>	Python, R, Reactjs, Nextjs, Java, Scala, Haskell, Javascript
<b>Deep learning</b>	Pytorch, Tensorflow, ONNX, CUDA, torchvision, Hugging Face, Langchain, Pinecone
<b>Database</b>	Oracle database, MySQL, GitHub, Bitbucket, CircleCI, Heroku, Mandrill, Docker

## EXPERIENCE

### Senior AI Engineer - Hivepath, Bangalore, India

Sep 2021 - Present

- Working towards enabling intelligence in autonomous AI Agents for business.

#### Key Contributions

1. [Lattis](#) A Platform OS for all your customer interactions with AI Agent - [Link](#)
2. [Hivepath](#) Professional networking Platform - [Link](#)
3. [Calpad](#) A calendar booking platform for the professionals - [Link](#)
5. [Zello](#) Andriod photo widget sharing platform - [Link](#)
5. [Styler](#) A B2B SaaS platform for beauty and Fashion Industry - [Link](#)

#### AI Model Development:

- Involved in the entire spectrum of AI model development, including conceptualization, deployment, instruction tuning, RLHF, and parameter-efficient fine-tuning.
- Leveraged API interaction, prompt engineering, and Retrieval-Augmented Generation (RAG) to define the landscape of autonomous AI agents.
- Constructed the End-to-End pipeline, integrating multiple Language Model (LLM) models (GPT-4, Llama 2).

#### Continuous Improvement and Responsible AI Implementation:

- Contributed to the gathering, construction, and annotation of domain-specific datasets. Enhanced the training of LLMs for a wider range of tasks and applications.
- Adapted and integrated a small LLM to enhance the ecosystem of responses. Actively measured and benchmarked model and application performance, analyzing accuracy and bias.
- Established a framework for questions and responses, conducting LLM evaluations based on question coverage and response quality. Implemented continuous improvements in AI models and maintained model evaluation systems.

### AI Engineer - Shopconnect, Bangalore, India

Sep 2020 - Aug 2021

- Implemented CNN based architecture models (ResNet, VGGNet) for object classification problems.
- Implemented YOLO algorithm for applying in retail domain - Customer Behavior Analysis, Foot Analytics, Inventory stock analysis.
- Presented recommendations on retail analytics based on computer vision technologies - Monitoring store traffic (at various customer touch points)..

### Intern — Crafter, Hyderabad, India

May 2019 - June 2019

- As the sole developer on the project, assumed full responsibility for leading the engineering strategy and making technology decisions independently, ensuring efficient and effective project execution...
- Proactively seeking feedback and input from the executive team and reflecting in the product Frontend..

### Software Engineer — Bluecom, Bangalore, India

June 2017 - April 2019

- Engineered an AI-powered e-commerce tool for seamless multi-channel Product Information, Inventory and POM .
- Integrated multiple third-party APIs, for product, inventory, order data from Shopify, Woocommerce, and Bigcommerce. Optimize backend systems and database architecture for scalability to handle increased data volumes.
- Optimized and automated business logic for the core marketing experiments, including A/B testing..

## ACHIEVEMENTS

Best Employee Award [Certificate](#)  
WorldQuant [Certificate](#)

Received the Best Employee Award in June 2022.  
Outstanding Performance Award (3rd Position).