

# DR. MATAN P

Chennai, India

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## Professional Summary

Machine Learning and NLP specialist with expertise in Generative AI, transformer-based language models, and multilingual text processing. Experienced in building scalable NLP solutions, fine-tuning large language models, and developing data-driven AI systems for real-world applications. Skilled in Python, PyTorch, and modern ML frameworks, with a strong ability to translate research innovations into practical, business-oriented solutions. Effective communicator who collaborates across teams to deliver impactful and interpretable AI outcomes.

## Experience

**Vel Tech Rangarajan Dr. Sagunthala R&D Institute of Science & Technology** Jul 2025 – Present  
Assistant Professor Chennai

- Developed hands-on AI solutions using transformer-based models, enabling students to build practical NLP and Gen AI systems.
- Guided student projects using real-world datasets, fostering problem-solving skills and industry readiness.

**College of Engineering Guindy, Anna University** Feb 2022 – Dec 2025  
Research Scholar & Assistant Lab Tutor Chennai

- Developed transformer-based language models for text generation, multilingual translation, and expressive speech synthesis.
- Designed NLP pipelines for large-scale text processing and evaluated models using ROUGE, BLEU, and semantic similarity metrics.
- Collaborated with research teams and mentored UG/PG students in AI, NLP, and machine learning applications.

**SWAYAM MOOC - Database Management Systems** Nov 2023 – May 2025  
Teaching Assistant

- Supported online learners through academic mentoring, assessments, and technical clarification.
- Assisted in content delivery and evaluation for large-scale online education platforms.

## Technical Skills

**Programming:** Python, C, C++, SQL

**Machine Learning & AI:** PyTorch, TensorFlow, scikit-learn, Deep Learning, Model Optimization

**NLP & Generative AI:** Transformers, Large Language Models (LLMs), Text Generation, Multilingual NLP, Prompt Engineering

**Data Analysis:** Pandas, NumPy, Exploratory Data Analysis (EDA), Feature Engineering, Model Evaluation

**Tools & Platforms:** Hugging Face, Git, Jupyter Notebook, Google Colab

**Concepts:** Natural Language Processing, Generative AI, Machine Learning Pipelines

## Education

**College of Engineering Guindy, Anna University** Feb 2022 – Dec 2025  
Ph.D. in Computer Science and Engineering Chennai, India

- Thesis: *An Integrated Approach to Generate Creative Children's Stories using Large Language Models and Multilingual Adaptation*

**College of Engineering Guindy, Anna University** Sep 2019 – May 2021  
M.E. in Computer Science and Engineering Chennai, India

**Panimalar Institute of Technology, Anna University** Aug 2015 – May 2019  
B.E. in Computer Science and Engineering Chennai, India

## Research Publications and Patent

- A Neuro-Symbolic AI Approach for Translating Children's Stories from English to Tamil with Emotional Paraphrasing**, *Scientific Reports, Nature Portfolio (2025)*, .
- Contextual Fine-Tuning of Language Models with Classifier-Driven Content Moderation for Text Generation**, *Entropy (2024)*, .
- Optimized Story Generation using DeepSeek LLM with Supervised Fine-Tuning**, *IEEE Conference (2025)*, .
- Smart Footwear with Multi-Sensor and Real-Time Data Synchronization for Diabetic Health Monitoring**, *Indian Patent (Published)*, .

## Milestones and Achievements

- Received **Best Paper Award** at IEEE CINS 2025 for contributions in artificial intelligence and deep learning research.
- Awarded the prestigious **Anna Centenary Research Fellowship** for doctoral research excellence at Anna University.
- Delivered an invited talk on **Artificial Intelligence in Manufacturing and Maintenance** at Ashok Leyland, demonstrating applied AI impact in industry.
- Completed NPTEL certifications including **Responsible and Safe AI Systems**, **Python for Data Science**, and **Data Science for Engineers**.