PRASANNA P

(+91) 866 723 6238 • prasanna.nitt.cse@gmail.com • LinkedIn

Computer Science Graduate Skilled and Passionate About Distributed Machine Learning and AI Research.

EDUCATION

National Institute of Technology, Tiruchirapalli — Trichy, India
Bachelor of Technology in Computer Science and Engineering — Jun. 2024
- *Relevant Coursework:* Deep Learning, Natural Language Processing, Image Processing, Linear Algebra.

SKILLS

Programming: Python, C, C++, SQL, CUDA, Triton
Frameworks: PyTorch, DeepSpeed, Lightning, HF Accelerate, PySpark, Scikit-learn, Numpy, Pandas
Software: Git, Bash
Additional Proficiencies: Distributed ML, Generative AI, Scalable ML, LLM, Distributed GPU Training, Chip Design

PROFESSIONAL EXPERIENCES

Visa Inc. — Bengaluru, India
Software Engineer | Data & AI Team — Jun. 2024
- Developed and maintained efficient AI infrastructure at Visa, including data retrieval and search, guardrails and PII redaction, caching, monitoring, and orchestration, to optimize performance and ensure data security.

Visa Inc. — Bengaluru, India
Software Engineer Intern | Data & AI Team — May. 2023 – Jul. 2023
- Developed an **LSTM**-based distributed machine learning solution for future transaction prediction, enabling the formation of optimized peer sets and contributing to Visa's global innovation challenge.
- Leveraged **distributed training** strategies to scale the model across large proprietary datasets, achieving an impressive overall accuracy of **94.8%**.
- Demonstrated innovation by registering the developed method as **Visa's intellectual property**, contributing to the company's proprietary solutions.

National Institute of Technology, Tiruchirapalli — Trichy, India
Winter Research intern | Supported by NSERB — Nov. 2023 – Feb. 2024
- Conducted research on automated identification of rhetorical roles in legal documents, leveraging **Large Language Models** (LLMs).
- Performed comparative analysis of neural network architectures, including **InLegalBERT** (a domain-specific transformer model) and **Hierarchical BiLSTM** with Conditional Random Fields (**Hier-BiLSTM-CRF**).
- **Fine-tuned** InLegalBERT using a proprietary dataset and utilized the fine-tuned embeddings to train Hier-BiLSTM-CRF.

RESEARCH PUBLICATIONS AND PROJECTS

Enhancing Rhetorical Role Identification in Legal Documents using Large Language Models and IN_place Data Augmentation | *Advised by RezmaSheik, JayaNirmala, CS Dept, NITT.* — Nov. 2023 - Mar 2024
- Leveraged prompt engineering on Mistral 7B LLM to generate synthetic data for imbalanced legal datasets, developing a novel "In-place Augmentation" technique to integrate this data, mitigating linear dependency issues.
- Achieved state-of-the-art performance in legal document rhetorical role identification, boosting weighted F1 from **0.729 to 0.884** and Macro F1 from **0.631 to 0.817** through synergistic integration of deep learning, domain-specific models, and LLM-based synthetic data.

Bert Pretraining — Feb. 2024 – Apr. 2024
- Attempted Bert Pretraining using publicly available datasets in ParamPorul- Super Computer.
- Employed distributed training strategies and tested with various DeepSpeed Library features including ZERO 1,2 and 3.
- Reduced divergence loss by employing the industry standard practices and through intuition.

RAG based Synthetic Data Generator — Dec. 2023 – Jan 2024
- Used opensource LLMs to generate synthetic data for solving data scarcity challenges in legal domain.
- Employed **RAG** to provide additional context to generate semantically correct data.
- Employed **prompt engineering** techniques to generate gold standard data.

AWARDS AND HONORS

Received the Best Poster Award among 35 research posters presented at FOSSCIL, International Centre for Free and Open Source Software. — Trivandrum, India