Jatin Karthik Tripathy

✉ jatinkarthikt@gmail.com ⊙ https://github.com/jk-tripathy in www.linkedin.com/in/jk-tripathy

📇 Bornholmerstr 17, Berlin, Germany 10439 📞 +49 151 576 274 70

Summary

Coming out of a Master's degree and a year's worth of experience as a research assistant at DFKI and several papers published in reputed journals, I have proven to have good experience with machine learning, deep learning, and the basics of software development.

Education

10.2021 − 07.2024	**Masters in Cognitive System** *University of Potsdam, Potsdam* **Focus:** Machine Learning, Deep Learning, NLP, Prompting LLMs, Argument Mining
07.2017 − 08.2021	**Bachelors in Computer Science** *Vellore Institute of Technology - AP, India* **Focus:** Software Engineering, Machine Learning, Deep Learning, Sentiment Analysis

Work Experience

08.2023 − Present

Research Assistant

DFKI - SLT Labs Berlin
- Responsible for model bench-marking of 7 models.
- Responsible for hyper-parameter tuning and model optimization for 2 modules.
- Implemented several unit tests across 3 modules.

10.2022 − 02.2023

Tutor

Computational Linguistics Lab, University of Potsdam
- Teaching assistant for the Advanced Natural Language Process class for WiSe 2022/23.
- Responsible for evaluating and discussing 20 assignments throughout the semester.
- Created unit tests for automatic grading for 4 assignments.

06.2019 − 09.2019

Data Science Intern

Edutech Analysis Labs
- Developed, handled and maintained 2 data science modules.
- Led a team of 8 interns to build a desktop application using Python.
- Implemented a web scrapper to gather 70% of the required information.

02.2019 − 05.2019

Research Intern

VIT-AP University
- Built a specialized chatbot to answer FAQs about the university.
- Researched and bench-marked 5 different models used in the field.
- Deployed and maintained chatbot on GCP for 4 months.

Skills

Programming	Python, Java, Dart
Tools	Linux, Git, Github Actions, Bash, Conda, Docker
Frameworks	PyTorch, PyTorch Lightning, Huggingface Transformers, Hydra, Optuna, Scikit-learn, Flutter
Data Analysis	Pandas, Numpy, Matplotlib, BeautifulSoup
ML	Text Classification, Sentiment Analysis, Argument Mining, Prompting LLMs, Text Generation, Knowledge Graphs

Projects

11.2023 – 07.2024

AbsArgSumm
https://github.com/jk-tripathy/absargsumm
Skills: *Text Generation, Argument Mining*
- Abstractive summarization of large scientific documents with an average of 7000 tokens.
- Novel approach of using Argument Structure to improve the summarization.
- Engineered a custom abstractive summarization model, which improved summary coherence by 3% based on ROUGE metrics.

11.2022 – 05.2023

XAI: Prompting for Multimodal QA and Evaluation of Rationale Generation
https://github.com/jk-tripathy/Prompting-and-Rationale-Generation
Skills: *Prompting Language Models, Text Generation*
- Exploring different methods of prompting 3 different Large Language Models.
- Representing an image context in 6 different textual forms for Retrieval Augmented Generation.
- Question Answering and Rationale Generation bench-marking on 2 different datasets.

10.2022 – 04.2023

Sexism Detection using MoE
https://github.com/jk-tripathy/Explainable-Sexism
Skills: *Text Classification, Sentiment Analysis*
- Multiclass Classification of 4 types of Online Sexism.
- Engineered a custom granular sexism classification method built using a Master of Experts architecture.
- Obtained an macro F1 score of 0.5288, matching state-of-the-art.

11.2021 – 03.2022

Knowledge Enhancement for PCL
https://github.com/jk-tripathy/Knowledge-Enchancement-for-PCL
Skills: *Text Classification, Sentiment Analysis, Knowledge Graphs*
- Multiclass Classification of 7 types of Patronizing and Condescending Language commonly found online.
- Performed Statistical Analysis of the data to provide more insights.
- Implemented fine-tuning of a knowledge graph embedded LLM, obtaining a micro F1 score of 0.701, beating state-of-the-art.

Publications

2023

1. Chakravarty, A. *et al.* e-Inu: Simulating A Quadruped Robot With Emotional Sentience. *arXiv preprint arXiv:2301.00964* (2023).

2. **Tripathy, J. K.**, Chakravarty, A., Beson, M. R. C., Doraikannan, S. & Reddy, P. HRV stress analysis using k-NN clustering technique. *AIP Conference Proceedings* (2023).

2021

3. **Tripathy, J. K.** *et al.* Comprehensive analysis of embeddings and pre-training in NLP. *Computer Science Review* (2021).

2020

4. Chakravarty, A. & **Tripathy, J. K.** Pattern Prediction using LSTM and ReLU Ensemble. *Proceedings of the International Conference on Innovative Computing & Communications (ICICC)* (2020).

5. **Tripathy, J. K.**, Chakkaravarthy, S. S., Satapathy, S. C., Sahoo, M. & Vaidehi, V. ALBERT-based fine-tuning model for cyberbullying analysis. *Multimedia Systems* (2020).