VRINDA KOHLI

(+91) 8091701861⋄ Email ⋄ LinkedIn ⋄ GitHub ⋄ Website

EDUCATION

Bachelor of Technology, Manipal University Jaipur — 2020 - 2024
Computer Science Engineering — CGPA : 9.26
Awards: 2x Dean's List, Award for Academic Excellence

EXPERIENCE

Machine Learning Intern — Jan 2024 - Present
Gloroots — *Bengaluru, Karnataka*

- Executing fine-tuning and prompt engineering strategies to optimize performance of both open-source and closed Language Models (LLMs) for downstream tasks, alongside developing custom Tavily and Langchain based agents.
- Contributing to development of recommender engines with a focus on scalable and low latency reranking algorithms.
- Facilitating seamless API integrations within the Django, MongoDB and PostgreSQL based product workflow.

Research Assistant — August 2023 - Jan 2024
BITLab, Boston University — *Remote*

- Contributed to a LangChain based multi-agent environment for experimentation on inter-agent interactions, using additional tools such as SerpAPI and OpenAI models.
- Imparted 6 demographic specific features to agents and studied their correlation with misinformation spread, observing emergence of real-world patterns in agent behavior.
- Reviewed 8+ papers on the usage of LLM backed Agent Based Modeling and Simulation.

Research Intern — May 2023 - August 2023
Delhi Technological University — *New Delhi*

- Implemented and validated 7 recent research papers on Deep Learning aided Metaphor Detection.
- Achieved 2% average accuracy improvement over existing methods during experimentation.
- Used transfer learning and transformer models for flash flood detection using geospatial raster imaging, improving performance by 8%.

Research and Development Intern — July 2022 - Nov 2022
Trish-i, IIT Mandi Catalyst — *Mandi, Himachal Pradesh*

- Developed end-to-end pipeline for classification task: from data collection and labeling to deployment via Flask.
- Trained VGG and YOLO based CNN architectures to predict 5 bone health conditions from X-Ray images with upto 94% accuracy using Tensorflow and Keras.
- Finetuned aforementioned models, leading to an 11% performance spike.

PUBLICATIONS

- Cracking the Figurative Code: A Survey of Metaphor Detection Techniques — Presented, ADCIS'23
- Finding GAIA (Generative AI Art) Online — *Under Review*
- Observing the Privacy-Utility Tradeoff in Differentially Private Medical Text Classifiers — *Under Review*

PROJECTS

Finding GAIA : *JPEG-Compression Agnostic Detection of Generative Art on Social Media.*

- Designed and implemented a lightweight architecture for detecting StyleGAN2-ADA and Stable Diffusion generated images using feature engineering and XGBoost ensembles.
- Achieved over 95% accuracy while using less than 20% of standard training data.

ShakespeareGPT : *Generatively Pretrained Transformer for generating Shakespearean-style quotes.* GitHub

- Developed a GPT model architecture and its components(tokenizers, multihead attention) from scratch using Python.

PATE : *Semi-supervised Knowledge Transfer for DL from Private Training Data.* GitHub

- Implemented the seminal PATE paper for Differentially Private training using PyTorch and PySyft on the MNIST dataset.

SKILLS

Languages	Python, C/C++, JavaScript, SQL
Frameworks	PyTorch, PyTorch Lightning, Langchain, Flask, Django
Tools	Git, Linux, Figma, MySQL, PostgreSQL, Vim, Google Cloud Platform (GCP)