Vivek V Kashyap

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PUBLICATIONS

- **"Constructing Bayesian Pseudo-Coresets using Contrastive Divergence"** Piyush Tiwary, **Vivek Kashyap,** Shubham Kumar, Prathosh AP. **Accepted UAI 2024** Paper
- **"GPT Neo for Common Sense Reasoning - A Theoretical and Practical Lens" Vivek Kashyap,** Rohan. **Under Review** Paper

EXPERIENCE

Indian Institute of Technology Bombay (IIT-B) **June 2023 – Nov 2023**

Machine Learning Intern - HealthCare

- Led the implementation of an accurate chatbot model on Ayurveda and Indian Traditional Medicine, harnessing the power of Llama models to achieve an accuracy rate of 83%, providing users with reliable information and directing the users to credible online sources using retrieval augmented generation systems.
- Curated a dataset of 8 million-sentence, optimized RAG systems for swift training, and achieved state-of-the-art results in natural language processing. Contributed to breakthroughs in healthcare AI.

Key Skills : NLP, retrieval, ranking, reasoning, Large Scale Training, ML model development, data exploration,

Indian Institute of Science (IISc) **June 2022 – May 2023**

Research Intern - Machine Learning

- Developed a novel loss function based on contrastive divergence for dataset condensation methods, resulting in an impressive 60% decrease in GPU consumption and 40% reduction in training time compared to original dataset.
- Implemented IndicBART model combined with Back Translation techniques to achieve an accuracy of 81% using 20k sentences for unsupervised machine translation of Hindi-Kannada sentences, leveraging Sanskrit as interlingua.

Key Skills : Machine Learning, BERT, Distributed Computing, A/B testing, SQL, ETL, data warehousing

Omdena - Impactful AI **March 2021 – July 2021**

Machine Learning Engineer

- Conducted a case law search model employing Doc2Vec and Glove embeddings to exactly identify and retrieve similar cases from a dataset of 10,000 cargo claims, resulting in 70% cost savings for cargo owners.

Key Skills : Python, Tensorflow, AI, Ranking, NLP, Kubernetes, Feature Engineering, Data Preprocessing, MLOps

PROJECTS

Neural Machine Translation Using Memory Efficient Transformers **January 2021**

- Built memory efficient Transformer models from scratch to perform neural machine translation on Portuguese-English sentences, achieving an accuracy of 93% and surpassing the performance of the original transformer model through fine-tuning and assessment of computational and memory factors.
- Analyzed the impact of positional embedding and rotary embedding on transformer architecture, leveraging the PennTreeBank Dataset to evaluate key factors such as FLOPs, speed, and memory usage, yielding valuable findings.

Key Skills : Pytorch, Git, SQL, Data Monitoring, Restful APIs, GCP, CNN, Image Processing, ensemble learning

Evaluated Student Summaries Using Large Language Models **March 2023**

- Evaluated the quality of student summaries for grade 3-12 using Large Language Models, Gradient Boosted and CART models; identified areas for improvement, resulting in a 25% increase in overall summary quality.
- Leveraged a Random Forest model to achieve an accuracy rate of 45% on a dataset of 7,000 summaries; employed rigorous testing on out-of-bag data to demonstrate robust performance.

Key Skills : Data Processing, Pytorch, NLP, CI/CD, Feature Engineering, Text Summarization, Classification, AI

Pneumonia Detection using Convolutional Neural Networks **November 2023**

- Incorporated deep learning techniques to train an Inception V3 model on a dataset of 5k X-ray images.
- Demonstrated an impressive accuracy rate of 90% and reduced loss by 30%, enabling the accurate detection of pneumonia cases and precise identification of infection sites within the respiratory system

Key Skills : OpenCV, Keras, Python, Pytorch , CNN, Image Processing, Object Detection, Object Recognition

EDUCATION

Bangalore Institute of Technology **August 2019 - August 2023**

Bachelor of Engineering in Electrical & Electronics CGPA : 8.42