MOHAMAD ZAMINI

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WWW: Bold Profile

SUMMARY

As a PhD student in Machine Learning and Natural Language Processing, I specialize in visual and text reasoning. I also excel in deploying large language models (LLMs) effectively. My solid foundation in software engineering has empowered me to make meaningful contributions to notable projects such as **Pytorch-Geometric, LangChain, Open-Assistant, Gymnasium, and Gorilla**. I excel in collaborative teams and driving projects to success.

EXPERIENCE

NUMENTA
Redwood City, CA

Machine Learning Intern   07/2024 to 11/2024
- Fine-tuned LLM models, including Mistral, LLaMA, and GPT, leveraging techniques such as activation sparsity and attention sparsity to optimize performance.
- Developed techniques such as KWTA, dynamic context pruning, and KV caching.

PETROLERN
Atlanta, GA

Digital Innovation Intern   06/2022 to 08/2024
- During my internship at Petrolern as a Digital Innovation Intern, I gained experience in both machine learning and data compression techniques
- I developed a semantic compression technique using a deep autoencoder to effectively map data tuples into a lower-dimensional representation
- As a machine learning engineer, I built models for analyzing geothermal data and improved their performance through algorithmic optimization

LIFEWEB
Tehran, Iran

NLP Engineer   06/2018 to 08/2019
- Fine-tune models like BART for summarization on Persian text data.
- Implementing Matrix Factorization for topic modeling.
- BiLSTM-CRF Models for sequential tagging.

EDUCATION AND TRAINING

MASTER OF SCIENCE: INFORMATION TECHNOLOGY   09/2018
University of Tarbiat Modares, Tehran, Iran

BACHELOR OF SCIENCE: COMPUTER ENGINEERING   09/2016
University of Science And Culture, Tehran, Iran

PH.D.: COMPUTER SCIENCE
University of Wyoming, Laramie, WY
Area of research: Causal Reasoning for Improving Generalization in Visual Question Answering
- Generated new benchmark dataset.
- Developed interpretable Visual Question Answering (VQA) models for the Benchmark dataset.
- Utilized LLMs to generate causal explanations for answers.
- Currently working on applying diffusion models to accurately decompose occluded shapes within our dataset, leveraging their capacity to model intricate data distributions and reveal obscured details.

PAPERS

- Zamini, M., Shukla, D. (AAAI 25 Submission). Q-Route: Quaternion based Actor-Critic for KG Reasoning
- Zamini, M., Reza, H. & Rabiei, M. (2022). A review of knowledge graph completion. Information, 13(8), 396.
- Zamini, M., Montazer, G. Credit card fraud detection using autoencoder based clustering. In 2018 9th International Symposium on Telecommunications (IST), 486-491. IEEE.

SKILLS

- Machine Learning
- Python Programming
- Data Visualization
- PyTorch
- Codebase
- Distributed programming