Amirhossein Nazeri

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GitHub, Google Scholar, LinkedIn, Medium, YouTube

WORK EXPERIENCE

Associate AI Engineer
JTEKT North America, 2024 - current

- Leading a team of technical staff & data engineers to develop an AI-powered technical assistant that retrieves knowledge from databases and generates new technical reports within an Azure-based application.
- Achieved a 100% increase in report generation speed while enhancing content integrity, coherence, and reference validation.
- Designed and optimized workflows for data wrangling, retrieval-augmented generation (RAG), and large language model (LLM) fine-tuning.
- Leveraged Azure Services, OpenAI GPT-4o, vector databases, LangChain, LanceDB, and BeautifulSoup to streamline AI-driven knowledge retrieval and report generation.

Data Scientist
DataRoo LLC, 2023 - 2024

- Led a team of medical specialists, medical coders, and full-stack developers to develop an AI-powered medical coding/billing application integrated with electronic medical records (EMR) systems.
- Created MVP development plan, action plan, created annotated JSON dataset, performed prompt engineering and fine-tuning to follow specific medical coding procedures. Integrated with Azure OpenAI service for reasoning and code generation
- Achieved about 30% higher accuracy and 40% lower cost in EMR assessment than ChatGPT-4o.

Graduate Research Assitant
Clemson University, 2022 - present, Project link

- Evaluated the security of SOTA object detectors DETR, Faster RCNN under adversarial examples.
- Tested on general and domain-specific autonomous driving scenario datasets.
- Secured the object detection by developing statistical-based anomaly detector.
- Utilized PyTorch for model development, Bash Scripting, GitHub, and CUDA for exprimentation.

Clemson University, 2020 - 2022, Project link

- Designed an AI-based smart grid and energy management system using MATLAB.
- Developed a Deep LSTM Neural Network (DLNN) to forecast the power demand of a microgrid.
- Assessed model performance under false data injection (FDI), and developed an integrated machine learning-based framework to enhance model's resilience.
- ML-framework succeeded detecting and removing FDI by 99% and recovering smart grid overall performance by about 30%.

EDUCATION

- **Ph.D.**, Automotive Engineering (AI-focused), Clemson University (GPA 3.9/4), Expected July 2025.
- **M.Sc.**, Electrical and Computer Engineering, Texas Tech University,(3.804/4).

SELECTED RESEARCH PAPERS

- Evaluating the Adversarial Robustness of Detection Transformers, Paper link
- Exploration of TPU Architectures for the Optimized Transformer in Drainage Crossing Detection, Link
- Entanglement Learning: An Information-Theoretic Framework for Adaptive Computer Vision