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TRISHA MANDAL

EDUCATION

University of Southern California — **Los Angeles, CA**
Master of Science in Computer Science — Jan 2022-May 2023
Specialization: Artificial Intelligence — GPA: 3.7

Pennsylvania State University — **State College, PA**
Bachelor of Science (BS) in Computer Science, Minor in Mathematics — Aug 2017-May 2021
4x Dean's List | Capstone Project at Volvo Trucks | Penn State ACM | Penn State AWC | Penn State MUN — GPA: 3.5

SKILLS

- **Programming Languages**: Python, C/C++, Java, SQL, HTML, CSS, Javascript, MATLAB, Racket, Verilog
- **Tools and Frameworks**: TensorFlow, PyTorch, LangChain, NetworkX, Scrapy, Pandas, NumPy, Scikit-learn, Keras, Seaborn, SpaCy, NLTK, Pytest, Matplotlib, Gensim, CUDA, Java Spring, Git, Jira, Linux, Power BI, MySQL, OpenAI, Pinecone, Redis, MongoDB, JetBrains IDEs, Jupyter Notebook, Visual Studio Code, Docker, Google Cloud Platform, Google BigQuery
- **Soft Skills**: Technical Writing, Verbal and Written Communication skills, Leadership, Collaboration, Detail-Oriented

EXPERIENCE

Griptape, Inc | Machine Learning Engineer | Los Angeles, CA — Jul 2023-Present
- Designing and developing advanced technologies for seamless integration of internal systems with large language models (LLMs) to enable efficient and reliable data processing.
- Implementing efficient vector store database drivers to store word embeddings from machine learning models and perform vector search similarity, optimizing retrieval and processing speed.
- Utilizing APIs of state-of-the-art language models for automating complex tasks in natural language processing and prompt engineering to enhance productivity and scalability for businesses.

USC Marshall School of Business | Research Assistant | Los Angeles, CA — Oct 2022-May 2023
- Designed and led NLP research that performs sentiment analysis and topic modeling on customer reviews using advanced deep learning models and techniques, resulting in the extraction of valuable insights for market research.
- Contributed to a study comparing the performance of multimodal and unimodal models by building a multitask text convoluted neural network (CNN) that outperformed separate CNNs for each task.
- Executed fine-tuning of GPT-3 model to identify synonym phrases for key topics in fashion and technology interviews.

Hornbill Labs, | Research Intern | Bengaluru, India — Sep 2021-Nov 2021
- Conducted research on how Machine Learning and Data Science can improve Supply Chain Management.
- Utilized SAP Enterprise Resource Planning and Python to integrate Machine Learning and ETL pipelines in real-time projects.

Lexalytics, Inc. | Software Engineer Intern | Amherst, MA — Jun 2020-Aug 2020
- Rectified anomalies in the output for Machine Learning model used for converting PDF documents to JSON output by refactoring 70 lines of technical debt for the purpose of Natural Language Processing.
- Leveraged Docker containers to increase performance and portability of applications.

Lexalytics, Inc. | Software Engineer Intern | Boston, MA — Jun 2019-Aug 2019
- Developed REST API documentation on the web using Java Spring Framework and Swagger UI/UX properties.
- Increased data graph efficiency on data analytics platform by 7% through unit testing with Python programming.
- Performed Named Entity Extraction for over 700 financial documents for NLP and data analytics prospects.

PROJECTS

- Performed a research study to adapt multimodal models to perform unimodal tasks and improve the visual question answering (VQA) results by replacing baseline text encoder BERT with ALBERT and testing on various VQA/QA Hugging Face datasets.
- Conducted semester-long team academic research paper on knowledge graphs and fusion-based transformer approaches for multi-hop question answering to replace the simple linear-sum baseline model with complex fusion techniques for better performance.
- Developed an interactive Python script with LangChain OpenAI embeddings and Faiss vector database, utilizing PyQt5 for GUI. The script matches queries with relevant FAQs in PDFs and suggests potential follow-up questions.