Los Angeles, CA 90007 | 717-829-1441 | trish11953@gmail.com | https://trish11953.github.io/

TRISHA MANDAL

EDUCATION

University of Southern California **Los Angeles, CA**
Master of Science in Computer Science Jan 2022-May 2023
Coursework: Analysis of Algorithms; Artificial Intelligence; Machine Learning for Data Science; Database Management Systems; Natural Language Processing; Deep Learning; Information Retrieval 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
Coursework: Data Structures & Algorithms; Object-Oriented Programming; Operating Systems; Theory of Computation; Database Management; Systems Programming; Statistics; Software Design; Discrete Mathematics; Entrepreneurship and Innovation; Game Theory; Numerical Analysis; Computer Organization and Design; Introduction to Digital Systems; Computer Organization and Design; General Physics Mechanics; Electricity and Magnetism GPA: 3.5

SKILLS

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

EXPERIENCE

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.
- 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, IN 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.
- Implemented a Dynamic Programming solution to the Sequence Alignment problem as part of a course project. Used Python to generate two strings from the original base strings and aligned them to find the optimal alignment according to given criteria.
- Conducted testing for the Pneumatic 1D Simulation for Braking systems using GT Suite, Python, Power BI, and SharePoint by working with a team of four students from Penn State with diversified engineering skills for capstone project sponsored by Volvo Trucks.