Prerak Jaimin Shah

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EDUCATION

Master of Science in Computer Science **August 2021 – May 2023**
Arizona State University, *Tempe, USA* **GPA: 4.0/4.0**
Relevant Coursework*: Statistical Machine Learning, Foundation of Algorithms, Data Processing at Scale, Artificial Intelligence, Data Visualization*

Bachelor of Technology in Computer Engineering **August 2017 – June 2021**
Pandit Deendayal Energy University, *Gandhinagar, India* **GPA: 9.86/10**

SKILLS

Programming Languages – Python, SQL, JavaScript, HTML, CSS, C/C++, Java, MATLAB, Scala
Tools and Technologies – MySQL, PostgreSQL, AWS, NodeJS, ReactJS, TensorFlow, Keras, Git, Tableau, Google Colab, Android Studio, Visual Studio, OpenCV, JSON, Microsoft Office, PyCharm, JIRA, Django, Hadoop, PySpark, ReSTful APIs, Docker, Windows, Unix/Linux, SQL server

WORK EXPERIENCE

Research Software Engineering Aide, The Center for Negative Carbon Emissions (CNCE), Arizona State University **July 2022-Sep 2022**
- *Worked with the software team to develop carbon dioxide management systems that would help to reduce global warming.*
- *Built end-to-end systems right from collecting data using Raspberry pi to visualizing and analyzing the results through the help of Tableau.*

Teaching Assistant, School of Computing and Augmented Intelligence, Arizona State University **Jan 2022-May 2023**
- *Provided comprehensive support to professors in developing and evaluating assignments for CSE 575: Statistical Machine Learning, CSE 572: Data Mining, CSE 511: Data Processing at Scale, and CSE 230: Computer Organization and Assembly Language Programming.*
- *Assisted students in overcoming challenges, debugging code, and addressing concerns to enhance their understanding and performance.*

Software Development Engineer Intern, Career Launcher **June 2020-August 2020**
- *Analyzed the stock prices of various small, medium, and large-cap companies with the help of NumPy, SciPy, Pandas, Matplotlib, and Sklearn.*
- *Performed Technical Analysis using Data Visualization and Fundamental Analysis (like Beta Calculation) using Regression.*
- *Forecasted Trade Calls using Classification and used clustering for Diversification analysis.*

Machine Learning Intern, Smart Bridge Education Services Pvt. Ltd. **May 2020-June 2020**
- *Built a model for predicting the life expectancy of a country based on features like Economic circumstances, Sex Differences, Mental and Physical Illnesses, Education, and other demographic factors.*
- *Deployed this model through the help of IBM cloud services (like Watson Studio, Node-Red, and Machine Learning Resources).*

PROJECTS

Real-Time Face Recognition **March 2022-May 2022**
- *Developed a distributed application that utilizes PaaS services like AWS Lambda and IoT devices to perform real-time face recognition.*
- *Utilizing Raspberry Pi, videos are captured which are sent to AWS S3 which would trigger a video processing AWS lambda function.*
- *Using Docker, images were created for AWS lambda. The lambda extracts the face from the images, predicts the person and fetches information about them from DynamoDB, and sends back the results to the device.*

Pacman With Bi-directional Search (https://bit.ly/3IzwHyd) **August 2021-December 2021**
- *Implemented a search algorithm given in the paper "Bidirectional Search That Is Guaranteed to Meet in the Middle" for the Pacman domain.*
- *Compared the performance of the search algorithm in Pacman environments of different tasks, sizes, and complexities.*
- *Carried out statistical analysis of the search algorithm using T-test and ANOVA test and compared it to that of DFS, BFS, UCS, A*, etc.*

Stock Market Forecasting **August 2021-December 2021**
- *Built an ensemble model through the help of an LSTM and a GRU deep learning model which predicted stock prices based on input features like Close Price, Volume, News Sentiment of the stock, etc.*
- *Fetched time-series data of various stocks through the help of Alpha Vantage API and gave them as an input to the LSTM model.*
- *GRU model worked on predicting the sentiment of news headlines fetched from finwiz.com by using VADER API.*

Multimodal Sarcasm Detection (https://bit.ly/3tqBagF) **January 2021-May 2021**
- *Developed a hybrid model that could detect sarcasm from text and audio. The Dataset consisted of clips from TV series like Friends, TBBT, etc.*
- *Detected sarcasm from text using CNN. Text instances were converted into their vectors through the help of pre-trained word embeddings.*
- *Preprocessed the audio files and extracted Mel Frequency Cepstral Coefficients from them which were given as input to the LSTM model.*
- *An F-Score value of **0.70** was achieved for the hybrid model when the combination of audio and text latent vectors was given as an input.*

Tank Wars (https://bit.ly/3Cd8ZWj) **January 2019-March 2019**
- *Created a physics-based two-player game of 2D tank battle by implementing real-life projectile equations in algorithms for the trajectory paths.*
- *Implemented the two-player mechanism by using concepts of client-server programming, socket programming, and Peterson's Algorithm.*

INDEPENDENT COURSE WORK

- *Deep Learning Specialization (Coursera), Google Data Analytics Specialization*

VOLUNTEER EXPERIENCE

- *Acted as a global volunteer for AIESEC in Harbin, Heilongjiang, China for the project "Green Power Now". It was aimed at achieving Sustainable Development Goal 13 (Climate Action) of the United Nations. Here, we conducted offline and online campaigns to make people aware of the impact they have, directly or indirectly, on their surrounding climate.* **June 2018-July 2018**

HONORS AND AWARDS

- Received ***Gold Medal*** from ***PDEU*** for being the top performer in my batch during my B. Tech degree in Computer Engineering.
- *Received **New American University Scholarship** and **Engineering Graduate Fellowship** from **ASU** based on my **academic performance.***