

Prith Sharma

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EDUCATION

- Vellore Institute of Technology** Vellore, India
• *Bachelor of Technology - Computer Science; GPA: 8.73* July 2019 - April 2023
Courses: Artificial Intelligence, Machine Learning, Deep Learning, Java Programming, Linear Algebra, Calculus, Data Structures, Analysis Of Algorithms, Networking, Neural Networks and Fuzzy Logic, NLP
- VelocIITy Educational Institutions** Hyderabad, India
• *Intermediate education (11th and 12th) in the fields of Mathematics, Physics and Chemistry.* May 2016 - March 2018
Percentage: 97%
- Gitanjali Senior School** Hyderabad, India
• *Schooling up until Grade 10* May 2002 - April 2016
Percentage: 95%

SKILLS SUMMARY

- Languages:** Python, JAVA, MATLAB
- Frameworks:** Scikit, NLTK, TensorFlow, Keras, Flask, Pytorch, Pytorch3D, Pyforest, Pandas, Numpy, Matplotlib, Seaborn, Spotipy, Texttable, Tinytag, Skimage, gTTS, pydub, pygame, pydicom, tweepy, Statsmodels, Darts
- Soft Skills:** Leadership, Event Management, Writing, Public Speaking, Time Management

EXPERIENCE

- IIIT Hyderabad** In-person, Hyderabad, India
• *Junior Research Fellow (Full-time)* August 2023 - September 2023
 - Junior Research Fellow:** Worked on 3D dynamic point cloud classification under the guidance of Dr. Charu Sharma. Took a break from this after a month of work to prepare for my Master's applications and for exams such as the GRE and TOEFL.
- Microsoft Research** In-person, Bangalore, India
• *Research Intern (Full-time)* August 2022 - February 2023
 - Research Intern:** Worked on Time Series forecasting with the Teams and Microsoft Bing teams, under the guidance of Rohan Gandhi and Sreangsu Acharyya. Worked on modifying the Holt-Winters forecasting algorithm's functionality to fit our use-case and generate better predictions.
- Amigo (a VIT-TBI startup)** Remote
• *Deep Learning Intern (Part-time)* October 2021 - February 2022
 - Was a part of the NLP and Deep Learning team here.:** Ended up working on audio classification and creating a question answering model on the SQuAD2.0 dataset.
- 5C Network** Remote
• *Data science and Computer Vision Intern (Full-time)* June 2021 - January 2022
 - The L5/S1 disc dislocation problem::** My job as an intern here was to essentially work on the L5/S1 disc dislocation problem which is visible via spine x-rays. Worked on a deep learning model here which essentially helps distinguish between a normal spine and a spine with an L5/S1 disc dislocation.

PROJECTS

- Stock Prediction using Deep Learning(Deep Learning, Python):** Here, I worked on stock prediction using various Deep Learning techniques such as LSTMs, Transformers with Time Embeddings. Tech: Python, Numpy, Pandas, Keras with a Tensorflow backend (May 2022-Oct 2022)
- A website for IPL score prediction with various ML models:** This was done in collaboration with my club TAM-VIT, wherein I had worked on using various regression algorithms on the IPL dataset, followed by deploying it on a localhost. Tech: Python, Numpy, Pandas, Scikit-learn, Flask, HTML (December 2021)
- Weather Data prediction using Machine Learning based techniques:** The auto ARIMA algorithm was implemented here on a time series based weather dataset in order to predict the value of energy a given number of steps ahead. The model had been pickled and deployed on localhost too. Tech: Python, Numpy, Pandas, Pmdarima, Flask, Pickle, HTML (January 2021)
- Racistometer (Web Development, Machine Learning):** A localhost website which uses a machine learning model in the backend to predict whether any particular text contains any racist/offensive content or not. The model was trained on a dataset which contained tweets of different classes and we got a 94% accuracy using the logistic regression classifier. Tech: Python, Sklearn, Pickle, Flask, HTML, CSS (November 2021)

- **Last mile vaccine transportation using IoT and Deep Learning:** Here, I worked on using Boltduino with the DHT11 temperature and humidity sensor to get data from the area in the box the vaccines would be exposed to and then, predict the temperature and humidity reading in the box about an hour later to alert the people involved in transporting the box so that it reaches the destination in time. The model which will be trained on this data would be an LSTM (that's what I've worked on until now). Tech: Python, Arduino, IoT, Keras with a Tensorflow backend, Numpy, Pandas, Isothermal box conditions (October 2021-June 2021)
- **Leaf Blight Detection using Raspberry Pi:** This project majorly involved me working on leaf blight detection using CNNs and I actually tested this out on real world data using Raspberry Pi. Tech: Python, Keras, Tensorflow, Raspberry Pi, IoT (October 2021)
- **Deepfake face generation and detection:** I performed the deepfake face generation using Autoencoders and the deepfake face generation by cropping the faces out of deepfake videos using the MTCNN GANs for face detection and then applied a CNN on every frame in the video to detect where the face is detected/not detected and with what probability. Tech: Python, Keras, Tensorflow (September 2021)
- **NLP Sentence Similarity:** I had done this project in collaboration with my AI course with IIT-Hyderabad teammates. Here, we built various sentence similarity models using various word and sentence embedding techniques and compared their accuracies using various similarity metrics. Tech: Python, Keras, Numpy, Pandas, Transformers (September 2021)
- **Morse Code Vice-Versa:** Here, we can convert a given morse code to the English language and vice versa and one can even hear a possible audio transmission of the morse code. Tech: Python, gTTS, Tinytag (September 2021)
- **Face Recognition for mood prediction and song suggestion:** Here, we give an image as an input and get an output of the emotion and corresponding songs via an audio. There were given audio files for the 7 emotions mentioned. Used a custom CNN model for the same and other libraries such as gtts and tinytag too. This was essentially done to try to come up with something which might help people when the world was undergoing some very tough times with CoVID-19. Tech: Python, gTTS, tinytag, Keras, Tensorflow. (April 2021)
- **Drone path planning with SEDS-VIT:** Used Pygame and also, used the Mission Planner software to understand the path the drone would take given certain coordinates of obstacles and a start and end point and the use of a tangent algorithm for path planning. Tech: Python, Pygame, Mission Planner(December 2020)
- **Twitter Sentiment Analysis using Twitter APIs:** Used the tweepy library to read in twitter data and get sentiment analysis, i.e. the positive, negative and neutral sentiment percentage and relevant tweets regarding the same, when you search for a specific keyword. Tech: Python, Tweepy. (January 2020)

PUBLICATIONS AND RESEARCH WORK

- **Cryptocurrency Price Estimation using Oscillatory Activation Functions on various Forecasting Algorithms:** It's research work which is still in progress and as of now, this has been tested on 20 different activation functions on LSTM, Bi-LSTM, GRU, TCN, Wavenets, LightGBM. We are also testing this out on TFTs too.
- **UTI detection for pregnant women using ML:** It's research work which is still in progress, which is being done under the guidance of Dr.M.Monica Subashini in VIT, in which we are using ML based techniques after performing our data cleaning to predict whether a particular patient (pregnant woman) might be suffering from UTI or not given various indicators.
- **Scrub Typhus Prediction Model for Location and Weather based data:** It's research work which is still in progress. This work is being done under the guidance of Dr.M.Monica Subashini in VIT, in collaboration with CMC, Vellore and ICMR. We used 1D-CNN and LSTM for time-series based forecasting when it comes to predicting number of estimated cases per month and also have used various ML based classification algorithms to train a model to classify on whether a patient admitted in a hospital could be a potential ST positive patient by considering location based data.
- **It's NeRF or Nothin'!:** A blog which I came out with on Medium which was about Neural Radiance Fields and their applications. Link to the blog is as follows: [Kindly click here to access the blog page](#)
- **X-Ray Image Segmentation using U-Nets:** A blog which I came out with on Medium which was about X-Ray segmentation using U-Nets. Link to the blog is as follows: [Kindly click here to access the blog page](#)
- **Image enhancement using ESRGAN for CNN based X-Ray classification:** Published in the 5th International Conference on Contemporary Computing and Informatics (IC3I-2022) at Amity University, Greater Noida (Manuscript ID: 755)., DOI:10.1109/IC3I56241.2022.10072472
- **Brain Tumor based MRI Image enhancement using Entropy and CLAHE based intuitionistic fuzzy method with deep learning:** Published in the Journal of Data Acquisition and Processing, Volume 38 Issue 3, DOI:10.5281/zenodo.777629
- **Integration of Cognitive Computing and AI of Smart Healthcare Systems:** It is a book chapter which has been accepted in the book titled "Digital Transformation in Healthcare 5.0", De Gruyter. It shall be published soon.
- **AI-Driven Healthcare Robotics and Assistive Technologies:** It is a book chapter which is still under progress.
- **Face Mask Detection Using Convolutional Neural Networks for controlling COVID-19:** Got accepted in the International Journal of High Speed Electronics and Systems (IJHSES). I wrote this paper along with Dr. J. Jayashree and Dr. J. Vijayashree.
- **NFT artwork generation using oscillatory activation functions in GANs:** It is a preprint, the link to the Engrxiv preprint is : [Kindly click here to access the preprint](#)

- **Continuous control using Deep Q Learning with Oscillatory Activation functions:** It is a preprint, the link to the Engrxiv preprint is : [Kindly click here to access the preprint](#)
- **Evaluation of Oscillatory Activation Functions on MNIST dataset using GANs:** It is a preprint, the link to the Engrxiv preprint is : [Kindly click here to access the preprint](#)

HONORS, AWARDS AND CERTIFICATIONS

- SIH Hackathon 2021 - Was a finalist in the SIH hackathon.
- Scored a perfect 100/100 throughout my 1st semester in the subject Calculus for Engineers - MAT1001 (Course code)
- Course Completion and successful project implementation Certificate from IIT Hyderabad on AI and emerging technologies with a "Very good" grade.
- Attended a workshop on Humanoid Robotics with IoT in IIT Madras.
- Completed the course TensorFlow 2.0 Masterclass: Hands-On Deep Learning and AI on Udemy
- Completed the course Neural Networks and Deep Learning by DeepLearning.AI on Coursera
- Completed the course Improving Deep Neural Networks: Hyperparameter Tuning, Regularization and Optimization by DeepLearning.AI on Coursera
- Completed the course Structuring Machine Learning Projects by DeepLearning.AI on Coursera
- Completed the course Clustering Geolocation Data Intelligently in Python by the Coursera Project Network on Coursera
- Completed the course Data Visualization with Python by IBM on Coursera
- Completed the course Machine Learning with Python by IBM on Coursera
- Completed the course Mathematics for Machine Learning: Multivariate Calculus by Imperial College,London on Coursera.
- Completed the course Mathematics for Machine Learning: Linear Algebra by Imperial College,London on Coursera.

VOLUNTEER EXPERIENCE

- **TAM (The AI and ML Club)-VIT** Remote/In-person
As a founding core committee member and the Technical Head *March 2021 - July 2022*
 - **As the Technical head:** Am responsible for imparting technical knowledge to members of this particular club in the domains of AI, ML and Deep Learning.
 - **As a core committee member:** As a core committee member of this club, I've worked on upskilling myself in the domain of AI, ML and Deep Learning and have also in the process conducted a workshop in VIT, Vellore on Digit Generation using GANs and also conducted another workshop on the application of U-Nets in medical image segmentation.
- **Read A Story** Remote
Educator *January 2020 - January 2021*
 - **As an educator:** Worked here as an educator to remotely teach underprivileged children in rural areas of Maharashtra, English remotely during the pandemic months.
- **Swasth Alliance** Remote
Intern *May 2021 - July 2021*
 - **Worked on::** Data cleaning and data visualization as an intern during the aggressive 2nd wave outbreak of CoVID-19 in India.
- **SEDS Projects - VIT, Vellore** Remote/In-person
Core committee member *December 2019 - February 2021*
 - **As a core committee member:** As a member of the technical team at SEDS Projects, I worked on path planning for a UAV and have also used the Mission Planner software to view it's output/ to understand the implementation.

HOBBIES

- **Grade 4 Pianist**
Have cleared the Grade 4 Piano exam with the Trinity College of London with Merit.
- **Member of Toastmaster's International**
Have been a member and an active participant of Toastmaster's International during my school days.
- **K-Circle Quiz Club member**
Have been an active member of this prestigious quiz club of Hyderabad.
- **Spelling Bee Enthusiast**
Have actively participated and won several awards in various spelling bee competitions.