Prithvi Kewalramani
Aerospace Engineering
Indian Institute of Technology Bombay

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B.Tech.
Gender: Male
DOB: 13-11-2001

Examination	University	Institute	Year	CPI / %
Graduation	IIT Bombay	IIT Bombay	2023	

Scholastic Achievements

- Achieved a percentile of 99.02 in the JEE Advanced examination out of 200,000 candidates ['19]
- Secured a percentile of 99.63 in the JEE Mains examination out of 1.1 million candidates ['19]
- Obtained DeepLearning.AI TensorFlow Developer Professional Certificate ['21]

Professional Experience

Data Science Intern | Infogen Labs Pvt. Ltd. [May '21 - Jul '21]

- Designed a Multilingual **Chatbot** using NLU and NLP concepts in Rasa conversational framework
- Processed texts in English, French, German and Hindi languages using the SpaCy NLP library in order to understand intents, and output actions for given situations and questions
- Deployed the bot for widespread use, implementing Bootstrap in CSS, and **Flask API** for frontend

Key Projects

Object Recognition on CIFAR-10 Dataset | Self Project ['21]

- Performed **object detection** on the CIFAR-10 dataset using **TensorFlow** and **Keras** libraries in Python
- Determined object present in images among 10 distinct classes with a validation set **accuracy of 85.2%**
- Made use of the Sequential API in TensorFlow, and used **Conv2D** layers to prepare the prediction model

Sentiment Analysis | Online Course Project ['21]

Natural Language Processing in TensorFlow | Deeplearning.AI

- Executed analysis on IMDB Reviews Dataset to predict whether movie reviews are positive or negative
- Applied **tokenizer** to train word vector embeddings of **10000 words** to classify words by their meanings
- Used Bidirectional and Unidirectional **LSTMs** along with dense layers in the model to make predictions, achieving **peak accuracies** of **84.6%** on the validation set and **94.6%** on the test set data

Object Localization on Bird Images | Online Course Project ['21]

Advanced Computer Vision with TensorFlow | Deeplearning.AI

- Created **object localization** model to find position of birds on images from the Caltech Birds dataset
- Implemented the Functional API of TensorFlow to create the model in order to get multi-layer output
- Incorporated **MobilenetV2** from the TensorFlow library into the model and achieved an **IoU score** greater than 0.5 on **69.4%** of the images in the validation set

Temperature Data Prediction| Self Project ['21]

- Performed Temperature Forecast using Sunspot and Temperature dataset for Melbourne Australia from 1981 to 1990 using **TensorFlow** and **Keras** libraries in Python
- Prepared Model using **LSTM** and **Conv1D** layers in order to process sequenced data and output prediction thread thus achieving a **mean absolute error of 7.5%** on the final graph

Course Projects

Analysis of Wind Flow past Airfoils | IIT Bombay ['20]

Guide: Prof. Prabhu Ramachandran, Course: Incompressible Fluid Mechanics

- Carried out analysis of subsonic airflow past airfoils of various shapes to determine **lift** and **drag**
- Plotted and calculated potential functions and stream functions for flow at different angles, to determine optimum airfoil shape to be used at given flow speed
- Used various Python libraries such as **Matplotlib, Numpy and Pandas** for plotting and calculations

Gas Turbine Engine Thrust Analysis | IIT Bombay ['20]

Guide: Prof. Krishnendu Sinha | Course: Thermodynamics and Propulsion

- Analysed thermodynamic energy exchanges of Rolls-Royce Trent 900 engine working in a **team of 4**
- Calculated variables such as power and thrust generation, pressure and temperatures values with minimal error, and quantified relations in order to optimize fuel efficiency of the engine

Space Mission Design| IIT Bombay ['21]

Guide: Prof. Ashok Joshi | Course: Spaceflight Mechanics

- Determined orbit and trajectory of Shavit-1 rocket by examining orbital specifications from official data
- Calculated various parameters for the rocket path including eccentricity, mean anomaly and velocity, in order to ascertain how nature of the trajectory is connected with the objectives of the mission
- Independently created nominal trajectory of the launch vehicle, with self-designed manoeuvres thus obtaining final orbital velocity and height each with an accuracy greater than 99.5% to the original data

Special Random Variables, Distribution of Real Data | IIT Bombay ['20]

Guide: Prof. Amuthan Ramabathiran, Course: Data Analysis and Interpretation

- Performed analysis on **real world data** such as number of COVID-19 cases worldwide and annual global weather, which were extracted from websites using **webscraping** technique
- Calculated variance, standard deviations and confidence intervals for each dataset and plotted the datasets against standard distributions such as Bell, Weibull and T-curve
- Used Python libraries such as Numpy, Matplotlib, SciPy and Beautiful Soup to perform operations

Positions of Responsibility

Events Coordinator | E-Cell | IIT Bombay [Apr '20- Jun '20]

Asia's largest student-run Entrepreneurship promoting organization

- Contributed actively in the execution of Business planning competition Eureka Junior with 1500+ entries
- Facilitated the smooth functioning of Eureka Junior Workshops, as a coordinator, which saw a 40% year on year increase in participants from schools across the country
- Worked as an Organizer at the E-Summit Speaker Sessions having a footfall of 30,000+ people

Technical Skills

Languages/ Softwares: C++, Java, Python, MATLAB, LaTeX, AutoCAD, HTML
Specializations: Computer Vision, NLP, Sequence Models, Data Structures and Algorithms, Flask API
ML Frameworks: TensorFlow, Keras

Online Courses

- Machine Learning Course, Stanford University by Prof. Andrew Ng on Coursera ['20]
- Deep Learning Specialization, DeepLearning.AI on Coursera, which includes ['21]
  Convolutional Neural Networks, Natural Language Processing and Sequence Models
- DeepLearning.AI TensorFlow Developer Professional Certificate, which includes ['21]
  TensorFlow for Computer Vision tasks, NLP Concepts as well as Pattern Prediction Models

Extracurricular Activities

Cultural	• Selected out of 300+ students for National Sports Organisation (NSO) Classical Music (Tabla) in IIT Bombay	[Aug '19]
	• Participated in several Open-Mics and Performed Stand-up comedy in front of audiences of 150+ people	['19 - '20]
Scholastic	• Participated in Mathematics Olympiad held by Mathematics Association of IIT Bombay	['16]
	• Secured a rank of 108 in The All India Mathematics Olympiad by IPM	['14]
	• Particpated in Aqua Regia- The Science Quiz held by T.I.M.E	['15]