

# Sindhura Kommu

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🔗 <https://github.com/sindhura-cs>    🖱️ <https://sindhura-cs.github.io/>

## Education

**Virginia Tech, M.S. in Computer Science**

2023 Jan – present

**Teaching Assistant:** Machine Learning, Spring 2023, Prof. Lifu Huang

**Indian Institute Of Technology Bombay (IIT Bombay),**

2014 Jul – 2018 Jul

**B.Tech, Computer Science & Engineering** ✍️

**Teaching Assistant:** Computer Programming and Utilization, Spring 2018, Prof. Krishna Subramaniam

## Professional Experience

**Fractal Analytics** ✍️

*Senior Data Scientist - AI@Scale*

2020 Feb – 2022 Dec | London, UK

- Combined **Big Data** Analytics and statistical **machine learning** to uncover insights from **Financial data** and deliver tailored solutions for internal stakeholders (Part of the **Data Science Lab**)
- Overall growth and development of **ML capabilities** by **leading a team of Imagineers on-site**
- Designed a digital **surveillance system** for **IdeaForge**, a leading drone manufacturing company, harnessing data from **GPU-powered UAV drones**. Engineered real-time alert mechanism to enable swift **threat detection**, analysis, and prevention.
- **Co-authored a white paper** on how to build **scalable machine learning workflows** using Machine Learning Operations (**MLOps**) on the cloud including **Vertex AI**, **Cloud Composer**, and **CI/CD**.

*Data Scientist - Image & Video Analytics*

2018 Jun – 2020 Jan | Mumbai, India

- Led ideation efforts and incorporated findings from various **research papers** like **YOLOv3**, **Fast-RCNN**, and **BigGANs** into a robust codebase for performing **image classification**, **object detection**, and **segmentation**. Achieved validation **accuracy** of above **90%** on real-world datasets.
- Automated **video-content analysis** for P&G (consumer goods) to **detect action instances** like dishwashing, vacuum cleaning, etc in untrimmed household videos **reducing video size by 98%** to retain relevant clips. Shortened videos are used to **understand consumer interaction** with products and brands in order to create intelligent home care products across categories like home cleaning.
- **Digital in-store analytics:** Identify, **extract** and **classify P&G products** at **SKU level** from **shelf images of retailers** using advanced deep learning and segmentation techniques. Insights from data are used to **improve store displays** and to comply with company's ideal product positioning on shelves.

**Samsung R&D Institute, Software Intern**

2017 May – 2017 Jul | Bangalore, India

- Implemented **usability extension** in **Tizen Browser** that allows users to mirror and hook certain website regions to overcome the hassle of scrolling back and forth.
- Validated with major websites including **StackOverflow**, **Quora**, **ESPN Cricinfo**, **Times of India**, etc. This feature has now become standard across popular browsers and social media platforms.

**Tech Mahindra, Software Intern**

2016 May – 2016 Jul | Pune, India

- This Pilot project focuses on improving the efficiency of **Electric Vehicle Charging Systems**. It involves building complex hardware and software integrations that intelligently gather data on Electric Vehicle Charging patterns and transformer performance.

- Analyzed operations by monitoring charging patterns between Central System and Charge Point.

## Academic Projects

**Text-to-Image Synthesis using CLIP-guided GANs**, *Advanced Machine Learning, CS5824, Spring 2023*

Implemented **CLIP guided StyleGAN** for **interactive fashion design tool** using **PyTorch**. The model is used for **generating fashion images using textual descriptions**. [Code](#)

**Visual Question Answering**, *Intro to AI, CS5804, Spring 2023*

Performed a comparative study between the **CNN+LSTM** approach and **Hierarchical Question-Image Co-Attention** approach for Visual Query Response. [Code](#)

## Scholastic Achievements

- Secured **99.17 percentile** in **IIT JEE (Advanced)** with an ALL India Rank of 1231 out of **1.5 lakh** candidates
- Scored percentiles **99.72** in Paper I and **98.51** in Paper II of **JEE(Main)** out of 13 lakh candidates
- Bagged state **Rank 25** in 3rd **International Mathematics Olympiad (IMO)**
- Secured **Rank 21** in **South Indian Science Olympiad(SISO)**
- Attained **Rank 6** in the 38th **Mathematical Olympiad** conducted by Andhra Pradesh Association of Mathematics Teachers (**APAMT**)

## Certifications

**Structuring Machine Learning Projects** [↗](#)

*Coursera, deeplearning.ai*

**Convolutional Neural Networks** [↗](#)

*Coursera, deeplearning.ai*

**Deep learning A-Z, Hand-On Artificial Neural Networks** [↗](#)

*Udemy*

**Neural Networks and Deep Learning** [↗](#)

*Coursera, deeplearning.ai*

**Improving Deep Neural Networks: Hyperparam Tuning, Regularization and Optimization** [↗](#)

*Coursera*

**Deep learning, Nanodegree Program** [↗](#)

*Udacity*

**Sequences, Time Series and Prediction** [↗](#)

*Coursera, deeplearning.ai*

**The Science of Well-Being** [↗](#)

*Coursera, Yale University*

## Technical Skills

**Pytorch** (Frameworks), **Python** (Languages), **Pyspark** (Frameworks), **Tensorflow** (Frameworks), **Keras** (Frameworks), **MLflow** (Frameworks), **Numpy** (Frameworks), **Pandas** (Frameworks), **SQL** (Languages), **C** (Languages), **C++** (Languages), **JavaScript** (Languages), **HTML** (Languages), **CSS** (Languages), **Git** (Tools), **Scipy** (Frameworks), **Matplotlib** (Frameworks), **MATLAB** (Languages), **Cloud Build** (GCP), **Visual Studio** (Tools), **Tableau** (Tools), **Jira** (Tools), **Airflow** (Tools), **Great Expectations** (Tools), **MySQL** (Databases), **Neo4j** (Databases), **Postgres** (Databases), **BigQuery** (GCP), **Vertex AI** (GCP), **Cloud Composer** (GCP), **Data Studio** (GCP), **Terraform** (GCP), **Cloud Build** (GCP)