VENKATA PAVAN KUMAR TURLAPATI

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EDUCATION

SRM Institute of Science and Technology **July 2017 - May 2021**
B.Tech in Computer Science and Engineering (CGPA : 8.59) *Chennai, TN*

Related Courses : Data Structures and Algorithms, Natural Language Processing, Operating Systems, DBMS

EXPERIENCE

Indian Institute of Technology Hyderabad - IITH **Nov 2020 - Present**
Research Intern *Hyderabad - Remote*

- Currently working under Mr. Chalavadi Vishnu and Prof. Krishna Mohan on developing an improved trajectory forecasting method to enhance autonomous driving.
- Technologies & Libraries used : Python, OpenCV, pillow, Pytorch.

Defence Research and Development Organization (DRDO) **July 2020 - Oct 2020**
Summer Research Intern *Hyderabad - Remote*

- Worked under the supervision of Mr. Ashwin Chandar (Sc-'F') in the Advanced Systems Lab (ASL).
- Worked upon the project *'Eliminating Mode Collapse in Generative Adversarial Networks (GANs)'.*
- Designed a novel training method which increased the Inception score by 1.7x.
- Technologies & Libraries used :TensorFlow, Keras, pandas, scipy, numpy.

National Institute of Science Education and Research **June 2019 - July 2019**
ACM Summer School Scholar *Bhubaneshwar, OR*

- From a vast pool of 350+ applicants from all over India, only 30 members were selected which included Researchers, Professors and a handful of B.Tech students.
- Was trained & worked upon on 'Geometric Algorithms and their Applications'

CodEzy Infosolutions LLP **May 2019 - June 2019**
Machine Learning Intern *Kolhapur, MH*

- Worked upon the project 'Detection of fraudulent Purchase Orders using Machine Learning'.
- Developed a Neural Network for detecting fraudulent transactions in the workflow of the system. | Accuracy achieved : 95.2% |
- Technologies & Libraries used : TensorFlow, Pandas and scikit-learn, MongoDB database.

PUBLICATIONS

Outlier-SMOTE : A refined oversampling method for improved detection of COVID-19
Pavan Kumar, Dr. Manas Ranjan Prusty ***[Link]***

- This paper presents a modified version of SMOTE wherein each data-point is oversampled with respect to its distance from its counterparts.
- Published in **'Intelligence Based Medicine' - Elsevier.**

Captcha Generation and Identification using Generative Adversarial Networks
Hardik Ajmani, Pavan Kumar, Mrinal Wahal ***[Link]***

- This paper depicts use of DCGANs to synthesize captchas from existing captchas. Furthermore, it presents a classifier trained to distinguish between original and synthesized data.
- Under review in the Springer Nature - Computer Science Journal.

REX : A Handwritten Regular Expression solver using ResNets
Dr. R.I. Minu, Ankit Prabhu, Pavan Kumar ***[Link]***

- This paper utilizes the technique of character segmentation and component analysis for recognizing each symbol or alphabet in the expression. Further, the outputs can be easily furnished into the RegEx-solver algorithm to obtain the results. | Accuracy : 89.02% |
- Undergoing *2nd review* in the Springer Nature - Computer Science Journal.

NOTABLE PROJECTS

Plant Disease Detection and Identification **[Link]**

- This model identifies 48 kinds of leaves (diseased and healthy) and identifies the type of disease in the plant. | Dataset : PlantVillage | Accuracy : 94.03% | Recall : 91% |

Image-Denoising-CIFAR **[Link]**

- Created a repo on GitHub specifically for the research of efficient image denoising algorithms. Till date: 5 basic filters, AutoEncoders and GANs have been compared | AutoEncoders proved **5.7x** times better.|

Kharcha - The Expenditure app **[Link]**

- Built an Android app to maintain a record of the weekly expenditures. It extracts information from the debit SMS whenever a payment is made. Can set goals and segregate spending according to category. Front-End : Core Java. Backend : SQLite

ACHIEVEMENTS

- Was one among 6 members (out of 100+ applicants) to be selected by our university for completing the final semester project at EFREI, Paris. *(Cancelled due to COVID-19)*
- Got invited as a speaker on 'COVID-19 Drug and Diagnostic Developments' - International virtual conference by Sciinov Group after publishing my first research work.

TECHNICAL SKILLS

Languages	Python, Java, C++, C#, MATLAB, LaTex, SQL
Libraries	Numpy, Pandas, Matplotlib, Keras, Tensorflow, scikit-learn, opencv
Databases	MySQL, MongoDB

POSTIONS OF RESPONSIBILITY IN COLLEGE

Aakash Research Labs, SRM-IST Dec 2019 - Present
Senior Member of the ML Domain

- ARL is a remote lab of IIT-Bombay and we conduct research and take up commercialized projects given by various professors and incubated startups. Handled the ML-automation of 4 projects until now.

Infi-Alpha Hyperloop Aug 2017 - Jan 2019
Embedded Systems Associate

- Simulated electronic systems using LabVIEW in the team for SpaceX Pod Competition 2017.
- Volunteered in a crowd-funding campaign supported by FUELADREAM. Our team achieved the feat of raising over Rs.1,00,000 within 48 hours.

LANGUAGES KNOWN

English | Hindi | Telugu | Marathi | Japanese