Sai Harsha Yelleni

harshayelleni@gmail.com
cs19mtech11023@iith.ac.in
9866665537

Academic Details

Year	Degree	Institute	CGPA/ Marks(%)
2022	M.Tech Computer Science and Engineering(3 year)	Indian Institute of Technology Hyderabad	9.52
2019	B.Tech Computer Science & Engineering	National Institute of Technology Andhra Pradesh	8.31
2015	XII (TSBIE)	Sri Chaitanya Jr. Kalasala	97.6%
2013	X (BSE Andhra Pradesh)	Krishnaveni Talent School	9.8

Work Experience

Research Assistant, IIT Hyderabad Aug'19- present

- Working in collaboration with Japan International Cooperation Agency **(JICA)** in the project "**M2SmarT**" to make Ahmedabad (an Indian city) a smart city (SATREPS project).
- Developing an end-to-end framework to perform **real-time vehicle detection**, **traffic congestion** detection and prediction which aids in traffic flow optimization.

Intern at DOS(Distributed & Object Systems) Lab**, IIT Madras** and **CDAC** Chennai | Prof. D. Janakiram Jun' 17 - Jul' 17

- Worked in redesigning Indian Linux (**BOSSMOOL**) kernel (3.19.0) compilation and device drivers.
- Reduced Coupling and increased **maintainability** by using C++ instead of C with performance overhead **~2%**

Projects

MTech Thesis: Bayesian Deep Learning for Object Detection | Prof. C. Krishna Mohan and Dr. Srijith P.K Apr' 21 - present

- Applying Bayesian Deep Learning techniques to induce **robustness** and improved performance in Detection.
- Exploring Transformer based detectors, Out-of-the-Distribution, Uncertainty Estimation and Bayesian inference methods.

Building robust and safe algorithms for autonomous vehicles (NVIDIA AI Technology Center**)** Apr'20 - Apr'21

- Worked on YOLOv4, YOLOv5 and YOLACT with Bayesian methods for **uncertainty** estimation and generalization.
- Proposed a novel method (**Monte Carlo DropBlock**), which acheived **state-of-the-art** performance on MS COCO data set in object detection & segmentation.

Video Bokeh (Research and Development Project with **OPPO)** Mar'20-Aug'20

- Built "Video Blur" application using **instance segmentation** model for person class in **low computing** devices (mobile phones) with execution time **< 33ms/frame**.
- Optimized the **latency** and **size** of the TensorFlow Lite model with **inference time** reduced by **32.5%**.

Online Shopping System | Web Development Sept'17 - Nov'17

- Developed & tested a website which facilitates sellers to add products and shoppers to buy products on local server.
- Used HTML, CSS for Front-end; PHP, SQL for Back-end; High Charts library for sales visualization.

Scholastic Achievements

- Secured **All India Rank 888** among **1 lakh candidates** in GATE CS IT 2019.
- Secured **All India Rank 758** (98.48 percentile) in JEE(Mains)-**B.Arch**, 2015 and **98.12** percentile in JEE(Mains)-**B.Tech**, 2015.

Relevant Courses

Computer Science: Advanced Data Structures and Algorithms, Surveillance Video Analytics, Advanced Computer Networks, Internet of Things, Probabilistic Model Checking, Operating Systems, Database Management Systems
Machine Learning: Deep Learning for Vision, Bayesian Methods for Machine Learning (with Honors), Mathematics for ML

Positions of Responsibility

Teaching Assistant, IIT Hyderabad

- CS6140 - Video Content Analysis and CS6460 - Visual Big Data Analytics Jan'21 - Apr'21
- CS6880 - Multimedia Content Analysis Aug'21 - present

Skills

- **Programming languages**- Fluent in C, C++; Familiar with Shell scripting(bash), Python for ML.
- **Libraries and Frameworks**- Pytorch, Tensorflow, Numpy, Scikit-Learn.
- **Tools**- Google Colab, LaTeX, Git, Wireshark, Weka.

Extracurricular

- Participated in 36-hours long Hyderabad Police Hackathon for Traffic technologies, Jan 2020.
- Participated in the Fit India Freedom Run 2.0 as part of Azadi ka Amrit Mahotsav.
- Completed "The Science of Well-being" and "Finance for Everyone" courses from Coursera.
- Attended "IIT Hyderabad: Developer Connect Program" by NVIDIA.