Srihari Vemuru

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26/C IIIT Bangalore, Electronic City, Bangalore, India

Interested Research Areas

Computer Vision, NLP, AI, Machine Learning, Robotics

Education

International Institute of Information Technology Bangalore — Bangalore, India
Integrated Master of Technology in Computer Science and Engineering; CGPA: 3.35/4.0 — *Expected July 2022*

Experience

Internship at Polytechnique University, Montreal, Canada — May 2021 - Aug 2021
Mitacs Globalink Research Internship — *Prof. Nicolas Saunier*

- Project description: Analysing the safety standards of Automated Vehicles using object detection and tracking.
- Trained DeepSORT and YOLO models on custom dataset and compiled HOTA and MOTA tracking results.

Internship at LightMetrics — June 2020 - Aug 2020
Start-up in Video Analytics for Road and Driver Safety

- Experimented with novel methods for road signs and vehicle detection.
- Helped with the integration of the successful models in the applications.

Internship at Indian Institute of Technology, Delhi — Oct 2020 - May 2021
I-Hub Foundation for Cobotics (IHFC), IIT Delhi — *Prof. Bodhditya Santra*

- Selected to be a part of the Quantum Computation Group in IIT Delhi.
- Developed a quantum annealing algorithm to solve Travelling Salesman Problem on a rydberg atom quantum computer.

Projects

Understanding Social Behavior in Dyadic and Small Group Interactions — Aug 2021(Ongoing)
ICCV Challenge — *Prof. Dinesh B Jayagopi*

- Two tasks: Recognising the personality of a person from multimodal input and forecasting a person's behavior based on previous input patterns.
- Using Attention models on videos classification and prediction.

Handling Complex Queries Using Query Trees — Aug 2020
NLP Project — *Prof. Shrisha Rao*

- Created, with a team of two, a search engine middleware tool called PTGQ. PTGQ parses a complex search query into simpler queries, progressively queries them and outputs the final result.
- Performance of PTGQ tops the SoTA by more than 30% on a metric specifically formulated for the task. Work submitted to Springer IR Journal. Paper under review.

Inferring Student Engagement Using Unsupervised Domain Adaptation Nov 2019

Computer vision project *Prof. Dinesh B Jayagopi*

- Project description: Predicting the engagement levels of students in a classroom using visual recognition and unsupervised domain adaptation.
- Gained experience in Unsupervised Domain Adaptation using models like Joint Adaptation Network (JAN) and Wasserstein Generative Adversarial Networks (WGAN).

Skills

- **Languages**: Python, C, C++, Java, SQL, JavaScript, CSS, HTML, Verilog(Hardware)
- **Frameworks**: PyTorch(ML[1]), TensorFlow(ML), Keras(ML), FastAPI(SD[2]), Django(SD), Node.js(SD), React.js(SD), OpenCV(CV[3]), Darknet(CV), dlib(CV), Scikit-Learn(Vis[4]), Matplotlib(Vis), Seaborn(Vis)

Additional Experience and Achievements

- **ACM ICPC**: Qualified for ACM ICPC regionals level in 2021.
- **ACM India Summer School**: Volunteered in organising a workshop on algorithmic and theoretical aspects of machine learning during the summer of 2019.
- **Quadcopter Project under Robotics Club**: Worked in a team to build a drone intended to guide people during fire hazards.
- **Windrop**: Worked in a team to build a web platform to share files amongst trusted devices of the same user.
- **PLE Portal at Web Science Lab, IIIT Bangalore**: Integrated an NLP API to the front end UI.
- **Certificate from Ministry of Human Resource Development, Government of India**: For 10/10 CGPA in Central Board of Secondary Education(CBSE) 10^{th} grade (High school).

[1]Machine Learning
[2]Software Development
[3]Computer Vision
[4]Data Visualization