SRISHTI YADAV

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I am a machine learning engineer with experience in computer vision based applications. I am a recent graduate from Simon Fraser University, Canada. I have worked with semi-supervised learning and class-imbalance problems. I have experience in implementing machine learning algorithms at scale.

SKILLSET

Software: MATLAB, Octave, ArcGiS
Languages and Tools: PyTorch, TensorFlow, Python, Numpy, Scipy, OpenCV, Matplotlib, Docker as well as AWS cloud services like S3, EC2 and Amazon Sagemaker

EDUCATION

Master of Applied Science (Computer Vision)
Simon Fraser University, Canada, January 2021 CGPA: 3.92/4.33
Bachelor of Technology, Electronics and Communication
Uttar Pradesh Technical University, India, June 2016

EXPERIENCE

Machine Learning Scientist July 2021-August 2021
Coastal Resource Mapping, Canada

- Computed and analyzed vegetation index for plant health from aerial raster data.
- Worked on a data pipeline leveraging Deep Convolutional Neural Network (CNN) to segment individual plants in orthomosaic raster imagery.
- Worked on plan detection for high-value crops that need to be monitored at the resolution of individual plants

Machine Learning Contractor February 2021-August 2021
MILA, Montreal, Canada

- Worked on large scale time-series dataset in the order of millions of data.
- Implemented and scaled data pre-processing to run on cloud; cleaned data into standardized format.
- Worked on ordinal classification problem for data modelling and processing geospatial (satellite) data.

Machine Learning Intern February 2020-August 2020
UrtheCast, Vancouver, Canada

- I individually implemented machine learning system for satellite data (Landsat8, SPARCS, Sentinel 2 dataset) for multi-class prediction of cloud, shadow, and haze.
- Implemented data ingestion pipeline which takes in raw geospatial multi-dimensional data as input and converts it into standardized format.
- Scaled the algorithm using AWS cloud based services, example, EC2 for deployment server, S3 for data storage and docker for creating virtual environment and parallel deployment of multiple training jobs.
- Investigated and implemented optimization methods to improve cloud mask generation from S2 data using the Green, Red Edge, and Water Vapor band.

Graduate Research Assistant January 2018-February 2021
Networked Robotics and Sensing Laboratory
School of Applied Science, Simon Fraser University, Canada

Project Associate August 2017-October 2017
Helicopter and VTOL Laboratory
Indian Institute of Technology Kanpur, India

Computer Vision & IoT Developer June 2016-July 2017
Samsung IoT Innovation Lab, Delhi, India
& Applied Cognitive Science Lab, India

PROJECTS

RGB-Depth Based Occlusion Aware Target Re-detection [Video] :
- Implemented target re-detection long term tracker using Kinect RGB-D camera.
- Tracker was able to infer & track target with information provided only in first frame.
- Improved average precision by almost 50% as compared to baseline KCF tracker

Deep Attention Models for Human Tracking Using RGBD [Paper]:
- Worked in a team of 4 to develop an adaptive appearance model to accurately detect color camouflage, even in the presence of complex natural objects.
- Improved the accuracy by approximately 50% and reduced the type I error by 23% and type II error by 5%.

Celestini Project India:
- At Samsung IoT Lab, developed a prototype video analytic algorithm using Caltech pedestrian dataset to run on Raspberry Pi 3 Model B.
- Worked in a team of 2 where I was responsible for porting the code from MATLAB to Octave. Also, worked on pre-processing the data to clean images, remove noise to infer position, lane and density of vehicles in front of the camera.

Prototype Landslide Risk Communication System [Paper]:
- Developed a system which forecasts and communicates occurrence of landslides.
- Conducted field survey and implemented a system for sensor deployment (sensors, microcontroller boards, GSM module and other electical components).

PUBLICATIONS

Book Chapter

Chaturvedi, P., Thakur, K., Mali, N., Kala, V. U.,Kumar, **S., Yadav**, S. & Dutt, V. (2017). A Low-Cost IoT Framework for Landslide Prediction and Risk Communication. In CRC Press: Internet of Things Concepts, Technologies, Applications, and Implementations (2017)

Journals

Rasoulidanesh, M., **Yadav, S.**, Herath, S., Vaghei, Y., & Payandeh, S. (2019). Deep Attention Models for Human Tracking Using RGBD. Sensors, 19, 750.

Selected for poster at WiML Workshop, **NeurIPS 2019**

Conferences

Yadav, S. (2021). Occlusion Aware Kernel Correlation Filter Tracker using RGB-D. arXiv preprint arXiv:2105.12161.

Naresh, M. , Chaturvedi, P. , **Yadav, S.** , Dutt, V. , Uday, K. V. (2017). 'Training of Sensors for Early Warning System of Rainfall Induced Landslides'. World Academy of Science, Engineering and Technology, International Science Index, Geotechnical and Geological Engineering, 11(12), 373.

OUTREACH

- Women in Computer Vision (WiCV) @CVPR 2021 (Virtual) — Advisor
- Women in Computer Vision (WiCV) @CVPR 2020 (Virtual) — Organizer
- Women in Machine Learning @NeurIPS 2019 (Vancouver,Canada) — Organizer
- Invent the Future, AI4ALL@SFU (Vancouver, Canada) — Mentor(Robotics)
- Teach India by Times Group, 2013 (New Delhi, India) — Teacher Volunteer