



Shivshankar Shukla

UG (II Year II Semester)
B.Tech. (Polymer Science and Engineering)
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Indian Institute of
Technology
Roorkee



VERIFIED

Area of Interest

Machine Learning, Deep Learning, Data Analytics, Research

Education

Year	Degree/Examination	Institution/Board	CGPA/ Percentage
2022	B.Tech. 2nd Year	Indian Institute of Technology, Roorkee	8.356
2019	Intermediate (Class XII)	Major Hemant Jakate Vidyaniketan	86.77 %
2017	Matriculate (Class X)	Vidya Pratishthans English Medium School	92.00 %

Projects

Battery Capacity Prediction Model Based On Generative Adversarial Networks | IIT Roorkee May 2022 - Present

- Problem in estimating battery parameters generally requires tremendous testing under different conditions
- Developing method to reduce time and resource costs significantly and increase the efficiency of battery production
- Implementing GAN based DL model to generate required data rather than running experiments
- Working on reducing the time cost by approximately 50 times in modeling and 20 times in training/testing

Image Generation with Effective Attribute Disentanglement | IIT Roorkee June 2022 - Present

- Achieving disentangled and controllable generation still remains challenging for generative adversarial networks
- Researching techniques for interpreting and utilizing latent space of the GANs better to understand the inner working of the deep generative models and also to facilitate versatile image editing
- Reviewed StyleGAN and InterFaceGAN architecture for style transfer and semantic face editing, respectively

Machine Learning Based Review Of Occupant Behaviour | IIT Roorkee May 2022 - Present

- Need for tools and techniques to understand vast quantities of information is increasing with increasing amounts of data
- Working on techniques to extract hidden topical patterns present across research papers related to occupant behaviour
- Used BERTopic for topic modeling which leverages transformers and c-TF-IDF to create dense clusters allowing for easily interpretable topics whilst keeping important words in the topic descriptions

Image and Emotion Detection and Caption Generator | ARIES, IIT Roorkee March 2022 - June 2022

- AI-powered image captioning integrated with emotion is helpful in assisting for visually impaired
- Assigned with the task of identifying the image and integrating emotion to generate a caption for it.
- Used VGG architecture to train on the FER2013 dataset for emotion recognition and then used a combination of EfficientNet architecture and transformer on the flickr8k dataset to generate captions.

Restaurant of the future (ROTF) | MaRS, IIT Roorkee August 2021 - February 2022

- Restaurants with robots as food runners are used to serve a lot more tables and help customers get their food faster
- Used ROS to navigate bot autonomously to avoid obstacles in the dynamic environment and deliver the food
- Worked with navigation team for implementing Timed Elastic Band (TEB) local planner for path planning

Awards / Scholarships / Academic Achievements

- Finalist in 'Saleable', a case study and sales strategy based competition, conducted by E-cell, IIT Roorkee amongst the participation of 100+ teams nationwide

Skills

Computer languages	Python, C++
Software Packages	Tensorflow, Keras, Pytorch, scikit-learn, Linux, MATLAB
Additional Courses	Machine Learning by Stanford Deep Learning Specialization by DeepLearning.AI
Languages Known	English(SRW), Hindi(SRW)

Positions of Responsibility & Extra Curriculars

Executive Technician | Models and Robotic Section, IIT Roorkee May 2022 - Present

- Designed Dum-E, a pick-up and place robotic arm, and administered the project, Balancing a CartPole System with RL
- Monitoring a team of 25 students over image processing and computer vision related task

Core Team Member | Vision and Language Group, IIT Roorkee May 2022 - Present

- Core Team Member of a studentrun group that aims to foster a researchcentric Deep Learning Community at IIT Roorkee
- Responsible for making ready-to-consume content on recent development around the world in the area of AI-ML

Joint Head ML Operations | Airsoc, IIT Roorkee July 2022 - Present

- Part of UAV design and aero modeling team. Responsible for managing tasks related to machine learning and also introducing a new domain of rocket modeling.