

Hemant Rakesh

| hemantrak05@gmail.com | linkedin.com/in/hemant-rakesh-983b59129 | github.com/hemantr05 | Mobile: +91-9741593305 |

TECHNICAL SKILLS

Languages: Python, C/C++, SQL, HTML/CSS, CUDA, Bash, Unix, XML, Javascript, Go, Java

Web Frameworks: Flask, Django

Software Developer Tools: Git, Docker, Jupyter Notebook, VS Code, GitHub

Cloud Technologies: AWS, Heroku, GCP

Domains: Image and Video Processing, Computer Vision(2D/3D), Machine Learning, Deep Learning, NLU, Distributed System

Other tools and technologies: Postgresql, RabbitMQ, Redis, Celery, Postman

INTERNSHIP EXPERIENCE

SWE Intern

Jan 2021 – Present

Glib.ai

Remote

- Responsible for fullstack software development and distributed message passing
- Revised, modularized and updated old code bases to modern development standards reducing execution time and improving functionality
- Backend development for machine learning applications
- Optimized and refactored pandas functions resulting in faster executing time

Deep Learning Intern

Jan. 2020 – Jun. 2020

SilverSparro Technologies Pvt. Ltd.

Gurugram, Haryana, IN.

- Read and implemented papers on semi-/weakly-supervised learning to improve object detection pipeline
- Developed custom loss functions and dataloaders
- Contributed the custom loss function to pytorch github repository

Research Intern

Aug 2018 – Dec 2019

BEES LAB, DESE, IISc

Bangalore, Karnataka, IN.

- Implemented Unet and ResNet50 models for image segmentation and classification respectively, of oral cancer cells
- Worked on 3D reconstruction of mitral valve from 2D Ultrasound scans and implemented structure from motion(SFM) in c++

Summer Intern

Apr 2018 – Aug 2018

LSG, IPC, IISc

Bangalore, Karnataka, IN.

- Developed a python gui to retrieve and visualize data from wasatch photonic laser
- Explored and implemented signal smoothing and de-noising algorithms

PROJECTS

SynthNet |

Nov. 2019 – Present

- This project aims speech from text but with addition of emotional quotient such as happy, sorry, empathy to name a few; to overcome the monotonous tone
- Using WaveNet as backend architecture.
- Can be extended for speech to speech conversion as well

SpaceCarving |

June 2019 – 2020

- Space carving is a technique used to create 3 dimensional models from multiple 2D images.
- It assumes that the 2 orthogonal images were taken from the same distance, with same focal length. With this assumption we can simplify space carving quite a bit with its biggest advantage being that it doesn't require an intrinsic or extrinsic matrix.

Arnold-A robotic eye |

Jan. 2019 – Dec. 2019

- Working on emotion detection using facial features extracted from expressions.
- Implemented FishEye algorithm using OpenCV and c++ for side perception
- Trained a deep learning model for custom object detector and depth estimator

OPEN SOURCE CONTRIBUTION

- **NVIDA/DALI**: Adding pytorch iterator plugin
- **pytorch/pytorch**: Added siamese loss (in c++ and python)
- **tflearn/tflearn**: Added switch activation, fashion mnist dataset, triplet loss
- **microsoft/hummingbird**: adding tf-idf
- **activeloopai/hub**: refactoring code base and code review

TECHNICAL FORUMS AND BLOGS

- **StackOverflow**: <https://stackoverflow.com/users/4598649/hemant-rakesh>
- **PyTorch Forum**: <https://discuss.pytorch.org/u/hemantr05/summary>
- **Medium blog**: <https://medium.com/@hemantrakesh>

EDUCATION

Nitte Meenakshi Institute of Technology

Bachelor of Engineering in Computer Science and Engineering

Bangalore, IN

Aug. 2016 – Oct. 2020

- Head of Machine Learning Club
- Class Representative
- Member of Music Club
- Technical Writer at Cryptec (Technical Club)
- Top 5 out of 200 teams in Rajasthan Hackathon'19

PUBLICATIONS

- A semi-supervised approach to semantic segmentation of chest x-ray images using deeplabv3 for covid-19 detection, Shipa Ankalaki, Dr. Jharna Majumdar, Hemant Rakesh, JCR. Year: 2020, Volume: 7, Issue: 15: 3205-3212. DOI: 10.31838/jcr.07.15.438
- Graph-Based Keyword Extraction for Twitter Data, Vijaya Shetty S, Akshay S, B S Shritej Reddy, Hemant Rakesh, M Mihir and Jyothi Shetty, book chapter, proceedings of ERCICA 2020, Springer
- Mishra N. et al. (2021) Quantum Machine Learning: A Review and Current Status. In: Sharma N., Chakrabarti A., Balas V.E., Martinovic J. (eds) Data Management, Analytics and Innovation. Advances in Intelligent Systems and Computing, vol 1175. Springer, Singapore https://doi.org/10.1007/978-981-15-5619-7_8
- Hemant Rakesh, Nalini N, "Drawing inferences about the condition of stray dogs using the concepts of AI and computer vision", International Journal of Electrical, Electronics and Data Communication, ISSN(p): 2320-2084, ISSN(e): 2321-2950, Volume-6, Issue-5.