

HARSHAV KUMAR

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SUMMARY

Creative and people-oriented machine learning engineer with 3 years of working in a tech startup. Highly experienced in writing codes and algorithms as well as building complex neural networks, have the ability to define a personal research roadmap. Possess an unbridled passion for artificial intelligence with comprehensive knowledge of deep learning, machine learning concepts and other related technologies. Led and managed a team of 5 in developing new software from concept to delivery.

EXPERIENCE

Quantiphi, Bengaluru, Karnataka | June 2022 - Present

Machine Learning Engineer

- Implemented code snippet for Form key-value pair relation extraction using Layoutlmv2 and xlm
- Pipeline development for various processes. (GCP cloud run)
- Worked on template based form extraction using yolov5.
- Improved performance of data-generation for both yolov5 and layoutlm models.

RMgX Technologies LLP, Gurugram, Haryana | September 2019 – June 2022

Machine Learning Engineer

- Implemented object masking for object removal from images achieving 0.82 IOU.
- Generated 50k synthetic data points for automatic license plate recognition base model achieving 0.6 CER.
- Reduced average waiting time of students from 5 mins to 30 seconds on online proctoring-based exams by integrating face recognition and camera tampering detection and speech detection in existing platform.
- Improved upon handwriting recognition model by utilizing Dilated CNN and multi-directional LSTM decoder achieving 0.72 CER.
- Improved performance of SOTA models on crowd density estimation by 60% by developing a multi-patch ensemble.

MTX IT Consulting Services Private Limited, Jaipur, Rajasthan | January 2019 – March 2019

Artificial Intelligence Intern

- Achieved 82% person re-identification after obstruction in video feeds by building up on state of the art algorithm.
- Integrated and deployed low latency (20FPS) ML models on edge camera modules.
- Lead the skill development process for in-house AI virtual assistant.

CSIR-CEERI, Pilani, Rajasthan | May 2018 – January 2019

Summer Student Research Trainee

- Implemented digital signal processing-based modules for structural health monitoring application.
- Developed an air quality monitoring system.
- Utilized ARIMA model to predict 7 days air quality with 5% MAE.
- Analyzed patterns in building structure health over a period of 1 month using the response frequencies

TECHNICAL SKILLS

Languages: Python, C/C++, MySQL

Frameworks and Tools: TensorFlow, Keras, OpenCV, Git, Flask (REST Framework)

Key Skills: Machine Learning, Computer Vision, NLP, TensorFlow, PyTorch

Cloud skills: AWS (ec2, sns, load balancer), GCP (cloud run, pub/sub, gke)

PAPER AND PUBLICATIONS

- [Controversy Probability Prediction on Twitter Corpus](#) (ITEE Journal) | **October 2020**
- [Door Security using Face Detection and Raspberry PI](#) (IOP Publication) | **March 2018**

PERSONAL PROJECTS

ResCode | January 2021

- Implemented and reproduced 5 research papers (ongoing project) from top conferences
- Provided **OPEN-SOURCE** implementations in top Machine learning frameworks
- Created an **EASY-TO-USE** API with a plug and play architecture

ADDNET | SEPTEMBER - OCTOBER 2020

- Advertisement placement onto live video feed without distorting pixels and placing at suitable position with respect to the person in feed.
- It's based on DeepLabV3 architecture.

WORD OR LINE SEGMENTATION | DECEMBER 2019

- Implemented algorithm to generate and extract text segments from handwritten texts.
- Provided a low latency open-source implementation with 0.2ms result extraction.
- Obtained a mAP of 75 on word level segmentation of student notes.

ACHIEVEMENTS

- **H1 Duration Team Winner:** Avengers and Justice League | **January 2023**
- **Winners:** RMgX Productathon | **December 2019 & December 2021**
- **Innovator Title:** RMgX Technologies annual star performer | **May 2021**
- **Regional Finalist** in DRUSE-DRDO Govt. Competition | **February 2018**
- **Regional Qualifier** in ACM ICPC | **Dec 2016**
- **Vice-Chairperson** of IEEE BKBIET Student Branch | **2017-18**

EDUCATION

BK Birla Institute of Engineering & Technology, Pilani, Rajasthan | **August 2015 - May 2019**
Bachelor of Technology in Computer Science & Engineering | **72% (Hons.)**

HOBBIES

Playing football, listening to music, dance, and photography