Harshav Kumar

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SUMMARY

Experienced Machine Learning Engineer with over 4.9 years of experience in developing and deploying AI solutions. Proven expertise in Computer Vision, NLP, Machine Learning, and Deep Learning. Demonstrated ability in leading teams, crafting algorithms, and building complex neural networks. Committed to continuous learning and applying innovative AI technology to solve real-world problems.

EXPERIENCE

Senior Machine Learning Engineer

Quantiphi Analytics Solution Private Limited   **June 2022 – Present, Bengaluru, India**

- Improved operation efficiency by 10% by developing efficient models and data pipelines for financial services and insurance use case.
- Designed and implemented a large enterprise architecture for real-time, scalable, and high throughput cloud solutions using GCP services and custom-built AI models.
- Created Custom metrics for Extraction model evaluation.
- Reduced turnaround time by 50% on loan claim processing by developing custom models and faster data ingestion pipelines for automating the data processing.
- Served the end users through an extensive and highly interactive web application.
- Developed Relation Extraction Model for Insurance Document Processing.

Machine Learning Engineer

RMgX Technologies LLP   **September 2019 - May 2022, Gurugram, India**

- Achieved 0.82 IOU on object masking algorithm by developing a custom model.
- Generated 50 thousand synthetic data samples to augment training data set for custom license plate detection and recognition model training.
- Attained 0.4 CER on license plate character recognition by training on synthetic data.
- Reduced average waiting time of students by 40% 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.

Artificial Intelligence Intern

MTX IT Consulting Services   **January 2019 - March 2019, Jaipur, India**

- Achieved 82% accuracy in 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, enabling real-time person detection and tracking.
- Developed an in-house AI virtual assistant.

Summer Student Research Trainee

CSIR-CEERI   **May 2018 - January 2019, Pilani, India**

- Implemented digital signal processing-based modules for structural health monitoring application, enabling real-time damage detection and prognosis.
- Analysed patterns in building structure health over a period of 1 month using the response frequencies, identifying potential structural damage.
- Developed an air quality monitoring system that achieved 5% MAE in predicting 7-day air quality based on ARMIA.

PROJECTS

ResCode

Open Source • January 2021 - 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

Open Source • September 2020 - 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

Open Source • December 2019 - 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.

PUBLICATIONS

• **Controversy Probability Prediction on Twitter Corpus**	**October 2020**
ITEE Journal	
• **Door Security using Face Detection and Raspberry PI**	**March 2018**
IOP Publication	

AWARDS & RECOGNITIONS

• **Q1 2022 Duration Team Winner: Avengers and Justice League**	**January 2023**
• **Q1 2023 Duration Team Winner: Avengers**	**August 2023**
• **Q1 2023 Duration Nominee Team Winner: Kingsmen**	**August 2023**
• **Q2 2022 Duration Team Winner: Group of Talent (G.O.T)**	**August 2023**
• **Q2 2023 Duration: SPOT award**	**October 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**	**December 2016**
• **Vice-Chairperson of IEEE BKBIET Student Branch**	**2017-2018**

EDUCATION

Master of Technology in Artificial Intelligence and Machine Learning

BITS Pilani • Pilani, India • 2025

Bachelor of Technology in Computer Science and Engineering

BK Birla Institute of Engineering & Technology • Pilani, India • 2019

SKILLS

Languages: Python, C/C++, MySQL

Frameworks and Tools: TensorFlow, Keras, PyTorch, OpenCV, Git, Flask (REST Framework), Docker, LangChain, llamaindex

Cloud Skills: AWS (EC2), GCP (cloud run, pub/sub, GKE, Cloud Task, Compute Engine)

Industrial Knowledge: MLOps, Data Analytics, Data visualization, Artificial Intelligence (AI), Research and Development

(R&D), Computer Vision, Natural Language Processing (NLP), Machine Learning, Deep learning (Document digitization and extraction,

Document Classification, Image Classification, Object Detection, Semantic Segmentation), Kubeflow, Generative AI, LLM, RAG