Ishan Srivastava

ML Engineer

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Technical Skills

Overview

Programming

Python • PyTorch • OpenCV

SciKit Learn • Matplotlib • AWS SM

SQL • Spark • CI-CD

MATLAB • C • C++ • R • LaTeX

Education

M.Sc., C.M.S: Visual Computing
Specialization: Machine learning and Computer Vision
Technische Universität
2019 - 2022 | Dresden, Germany

B.Tech., Production and Industrial Eng.
M.N.N.I.T
2014 - 2018 | Allahabad, India

Overview

- 3 Years of experience with proven track record of developing and deploying machine learning models in a production environment.
- Excellent communication skill with ability to transfer complex ML concepts to non-technical stakeholders. Experience with working in cross-functional teams.
- Strong analytical and problem solving skills, with a proven ability to work and deliver products that exceed expectations.
- Strong ability to analyze business requirements, identify key challenges and opportunities, and design machine learning models to address them.

Research

May 2022 - Nov 2022 — **M.Sc. Candidate** — Technische Universität

Thesis: Enhancement of interpretability of neural networks for image fusion via per pixel colorization in Glioblastomas.

- Designed and implemented two end-to-end pipeline for image fusion and image colorization of MRI scans of brain tumors.
- Trained CNN based architectures viz. FunFuseAn, MaskNet and DeepFuse to obtain optimal fusion.
- Implemented per pixel colorization to enhance the interpretability for clinicians.
- Collaborated with Carl Zeiss MediTec AG to deliver a working prototype which is now under testing at Faculty of Medicine Carl Gustav Carus, TU Dresden.

Experience

April 2022 -July 2022 — **Internship** — IAV Automotive Engineering

Anomaly Detection through Deep Neural Network for Automated Agricultural Heavy Vehicles

- Headed the development team for implementation of AnoGAN, based on the work of T. Schlegl
- Proposed a novel architecture to adapt GANformer for anomaly detection by inclusion of a parallel encoder and subsequent loss values calculation. For GANformer, AUCROC=0.85, Precision =0.90.
- Demonstrated continuous learning attitude to develop a sound working model. Conducted regular meetings and was the point of contact for the stakeholder.

Oct 2021 - Mar 2022 — **Individual Project** — Institute for Automotive Technology

Comparative Study of Object detection models for trash detection in context of autonomous vehicles

- Procured a suitable dataset containing various trash items - TACO
- Pre-trained models for Mask-RCNN, YOLOv5 and Tiny YOLO were retrained on selected dataset by transfer learning
- Performance comparison of models on quantitative (mAP - 0.835, latency - 35ms) and qualitative aspects.
- Decision-making on drivability based on detected 30 categories.

Feb 2021 - Sept 2021 — **Student Research Assistant** — Fraunhofer IVI

Remaining Useful Life prediction of Lithium-Ion Batteries using Long short term memory recurrent neural network

- Implemented data preprocessing and feature extraction techniques on KoKaM 2Ah dataset and converted battery charging cycles into features and labels for sequence prediction.
- Trained a RNN and LSTM model for RUL estimation. Voltage, charging current , resistance, temperature used as auxiliary features. Achieved an accuracy in range of $\pm$ 4 minutes; F1 score $\approx$ 0.95.
- Conducted sensitivity analysis using partial dependence plots to identify the key factors affecting battery degradation.