Contact

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https://www.linkedin.com/in/rishav-kumar-paramhans/

https://github.com/Rishav-Paramhans

Skills

Deep Learning
Machine Learning/AI
Computer Vision
Python
GitLab / GitHub
Autonomous Driving
C++
Kubeflow
Robotics
Docker
ROS

Language Skills

English- C1
German - A2
Hindi- Native/ Mother Tongue

Publications

Yaw Stability Analysis of a Tractor Semitrailer Using Yaw Plane Model

Int. J. Vehicle Structures & Systems 2022

Honours/ Awards

"Special Achiever" award for exemplary performance in various International events and academics

VIT University, March 2018

Certificate of Technical Inspection in recognition of exceptional work in vehicle design, fabrication, testing.

Shell Eco Marathon Asia 2017, Singapore

Rishav Kumar Paramhans

ARITFICIAL INTELLIGENCE | DEEP LEARNING | MACHINE LEARNING | COMPUTER VISION | SOFTWARE DEVELOPMENT

Profile

Enthusiast in AI-based cutting edge technology, committed to continuous learning and all-round growth.

Education

Master in Mechatronics — Sep 2020- Present

University of Siegen, Germany

Grade: 2.1

Focus Areas: Digital Signal Processing, Controls, Computer vision, Deep Learning, Software Development- V-Model, UML

Bachelor of Technology in Mechanical Engineering

VIT University, India — Aug 2014- Apr 2018

Grade: 1.4

Focus Areas: Manufacturing, Production, Industrial Engineering, Machine Design

Work Experience

Master Thesis Student

IAV GmBH | Dresden, Saxony, Germany — Dec 2022- Present

- Developed a Multi-task Neural Network for autonomous driving, capable of simultaneously performing 2D Object Detection, Monocular 3D Object Detection, Semantic Segmentation and Monocular Depth Estimation.
- Achieved superior performance up to 5% compared to corresponding single-task networks with faster inference speeds on A2D2 dataset in both hard and soft-parameter shared approach

Skills: Python, PyTorch, Cuda, ADTF, Tensorboard, OpenCV, Albumentations, Confluence, Jupyter

Project Intern: Intelligent Perception Functions

IAV GmBH | Dresden, Saxony, Germany — Sep 2022- Dec 2022

- Implemented a Self-supervised Monocular Depth Estimation network on KITTI dataset to generate the depth maps. Further generated absolute depth maps using DGC.
- Generated high precision Pseudo-LiDAR point clouds using the predicted depth and camera intrinsic.
- Gained high-level understanding of deployment of AI models on real cars on ADTF framework

Skills: Python, PyTorch, OpenCV, Open3D, CloudCompare, ADTF, ONNX, Kubernetes, IDE: Visual Studio Code and PyCharm

Assistant Manager Power Plant — Aug 2018- Sep 2020

TATA Chemicals Ltd. | Mithapur, India

- Worked as Shift In-charge in Captive Powerplant of capacity 70 MW
- Process Control through Distributed Control System, resolving process deviations and achieving KPIs
- Development of Standard Operating Procedures for Newly expanded process.

Skills: Problem-Solving, Critical Thinking, Management, Team Work, Decision Making and Leadership, Lean Six Sigma

Hobbies

Travelling

Music- Playing Guitar

Certifications

MATLAB Onramp

Simulink Onramp

Academic Projects

Analysis of Deep Neural Network Architecture for 3D Object Classification, Part and Semantic Segmentation 3D Point Cloud

Chair of Computer Vision, University of Siegen Mar 2022- Jun 2022

- Implemented PointNet architectures using PyTorch for 3D Object Classification on ModelNet40 Dataset and Part Segmentation on ShapeNet Dataset and Semantic Segmentation on S3DIS dataset and trained the models to achieve an accuracy of 88% and mIOU of 90% and mIOU of 81% respectively.
- Conducted an ablation Study on the architecture for different datasets and different training strategies

Software Tools and Skills : Python, PyTorch, Matploilib, Numpy, Pandas

Christmas Challenge: Image Classification Dec 2021-Jan 2022

Chair of Computer Vision, University of Siegen

- Developed a CNN (ResNet) based deep neural network for Image Classification on Christmas Dataset and achieved an accuracy of 93%.
- Used Skip connections, Batch Normalization, Maxpooling etc.
- Secured 1st rank in the competition among 90 students.

Skills: Python, PyTorch, Image Processing, Numpy, Matplotlib

Pick and Place Operation on Lego Mindstorm EV3 Manipulator

Chair of Regulation and Control Technology, University of Siegen

- Used MATLAB to program Pick, Place and Obstacle avoidance behavior of the 3-DOF Manipulator Robot using Inverse Kinematics

Skills: MATLAB, Robotics, Inverse Kinematics and Path Planning

Team Vice-Captain and Powertrain Lead Engineer

Team Ecotitans, VIT University, India July 2016- April 2017

- Managed a multi-disciplinary team of 25 members during Design and Fabrication of a Super-mileage car prototype for participation in Shell Eco Marathon Asia 2017, Singapore.
- Converted a carbureted engine to Electronic Fuel Injection engine, installed sensors for closed loop engine tuning and its monitoring through DroidCAL mobile application and Engine Management Software.
- Successfully tuned the power unit for higher fuel efficiency and performance. The prototype achieved a mileage of 117kmpl.

Skills: IC Engine, Transmission, ANSYS, Solidworks, EcoCal, Leadership

Study of Yaw Stability of Articulated Vehicles

School of Mechanical Engineering, VIT University

- Developed a 4-DOF mathematical model, representing a three-axle tractor semitrailer model on MATLAB to investigate its yaw stability during combined cornering and braking maneuvers.
- A non-linear tire model and load transfer model were implemented for accurate incorporation of the effects of braking and its yaw stability.

Skills: MATLAB, Controls, Vehicle mathematical modelling