PRABHAKAR PANDAY

Computer Vision & Machine Learning Engineer

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SUMMARY

"Experienced Electrical Engineer adept at driver assistance systems development, algorithm design, and sensor-based system design. Skilled in cross-functional collaboration, C++, Python, Image Processing, LiDAR, and Point-Cloud analysis. Dedicated to delivering innovative solutions and driving impactful outcomes through continuous learning and collaboration."

EXPERIENCE

Freelance Experience

Dec 2023 – currently Germany

- Researching the use of depth sensors for estimating the vehicle tire profile, OCR, and damage.
- Developed algorithms for 3D reconstruction and depth estimation.
- Conducted through research on 3D human body modeling using stereo images.

Thesis & Intern

Valeo

July 2022 – Nov 2023 Germany

- Developed a GAN based deep learning model for LiDAR point cloud up-sampling & domain adaptation, increasing point generation x8 and enhancing resolution.
- Enhanced data management workflows on Google Cloud Platform (GCP), reducing processing time by 35% and improving operational efficiency.
- Conducted LiDAR point cloud trace simulations using carmaker software for comprehensive testing and validation.

Working Student

Robert Bosch GmbH

Oct 2021 – Apr 2022 Germany

- Contributed to Honda Lane project for L1 and L2 autonomous driver monitoring.
- Led enhancement of WATSH plugin:
  - Implemented lane keeping, departure warning, and edge detection.
- Optimized plugin to reduce false positives and enhance driver safety features.

Backend Developer

Oracle

July 2015 – Sept 2019 India

- Contributed to the build, test, and deployment of a web-based enterprise solution.
- Impacted over 100,000 users across 66 countries.

MACTHING SKILLS

Computer Vision
Image Processing | OpenCV | LiDAR Point-cloud Processing | Open3D/PCL | Detection | Segmentation | Tracking

Machine Learning & Deep Learning
PyTorch | TensorFlow | Keras | ClearML | Vision Transformer | Generative AI | VAE | GAN

Programming & Software Development
C/C++ | Python | SQL | Linux | Business Intelligence | ROS | Sensor Fusion

Tools & Frameworks
GCP | AWS | Git/Git Bash | Docker | Kubernetes | LLMs | Jira

Mathematical & Analytical Skills:
Linear Algebra | Stastical Analysis | Data Analysis & Visualization | Algorithms

ACHIEVEMENTS

Winner: Hackaburg 2022
Excelled in problem-solving, data analysis, and advanced tech use on time-series temperature data within 48hours.

Finalist @Rohde & Schwarz Engg Competition 2022
Led the team to competition finals with 87% test accuracy using Yolov5 for Anomaly Detection in 10days.

- Utilized tools like Oracle Business Intelligence (OBI), SQL, Power BI, and Oracle Data Integrator (ODI) for data tasks.
- Led test automation efforts for Fusion T&L software release using Selenium.
- Improved data-driven decision-making through efficient data collection and processing.
- Achieved an 18% reduction in testing time for Fusion T&L software releases.

Student Hiwi

Department of Machine Learning and Robotics, University of Stuttgart, Stuttgart, Germany

June 2020 – Dec 2020 Germany

- Implemented algorithms like Q-Learning, Deep Q-Learning, Lambda-Q, Monte-Carlo, and Markov models.

PROJECTS

Aware2All

Gestigon GmbH

Sept 2023 – Nov 2023 Germany

- Spearheaded pioneering research initiatives in-cabin driver and passenger monitoring systems using RGB and Depth sensors.
- Orchestrated dataset recording plans, ensuring comprehensive coverage of boundary conditions and enhancing model robustness.
- Implemented state-of-the-art models such as Yolov8 and v7, surpassing performance benchmarks on open-source COCO datasets.

Research Project

Institute for Visualization and Interactive Systems, University of Stuttgart

Oct 2021 – April 2022 Germany

- Developed a conditional GAN-based model for portrait image editing, improving the quality of the edited images by 10% compared to the original paper.
- Implemented style transfer using gram-matrix loss and component transfer to improve the realism in the generated image.

Internship

Institute for Visualization and Interactive Systems, University of Stuttgart

March 2021 – Aug 2021 Germany

- Trained CNN-based VAE models for generating facial images, achieving a 90% accuracy rate in image recognition tasks.
- Implemented Grad-CAM and Guided Grad-CAM techniques on U-net, VAE, and cVAE models, improving model interpret-ability and achieving a 15% increase in object tracking accuracy.

Hackathon

Rohde & Schwarz Engineering

2022 Germany

- Led a multidisciplinary team to the finals of the competition by implementing Yolov5 on provided datasets, achieving an outstanding test accuracy of 86.96
- Developed innovative image segmentation techniques for anomaly detection, showcasing expertise in computer vision and machine learning.

STRENGTHS

Industrious-worker | Resourcesful | Motivator & Leader

Product Management & Ownership | Abstract Thinking

EDUCATION

M.S. in Electrical Engineering

University of Stuttgart

Nov 2019 – Sept 2023

B.E. in Electrical Engineering

Visvesvaraya Technological University

July 2011 – July 2015

LANGUAGES

English	●●●●●
Kannada	●●●●●
Hindi	●●●●●
Tulu	●●●●○
German	●○○○○