ARPIT JADON

@ arpitjadonamu@gmail.com Berlin, Germany +4917685419721

EXPERIENCE

Researcher

German Aerospace Center

August 2024 – present Berlin, Germany

- Working at the institute of intelligent transportation systems.
- **Perception for autonomous driving** using both **infrastructure sensors** (like cameras mounted on traffic poles, bridges, etc.) and **ego-vehicle sensors** (like the front perspective camera).
- Current projects focus on domain adaptation and synthetic data generation for autonomous driving.

Computer Vision Engineer

Energy Robotics GmbH

February 2024 – May 2024 Berlin, Germany

- Worked on 3D scene understanding to make robots autonomous for inspection in different industrial settings.
- Developed an algorithm to generate faster 3D semantic segmentation annotations for LiDAR point clouds.

AI Research Engineer

Oraclase GmbH@Max Planck Institute for Informatics

July 2023 – January 2024 Saarbrücken, Germany

- Used computer vision and machine learning for **laser material processing and computational fabrication**.
- Directly worked on developing an AI-based cloud software to reduce the time spent in the laser marking process.

Machine Learning Engineer

Onward Assist

July 2019 – October 2020 Hyderabad, India

- Developed and deployed computer vision algorithms for **digital pathology and radiology**.
- Worked on multiple data modalities - whole slide images, X-Rays, multi-spectral images, pharmacological data, etc.
- **Supervised multiple interns** for six-month periods on digital pathology and pharmacology-related projects.

Research Assistant

Max Planck Institute for Informatics

October 2021 – June 2023 Saarbrücken, Germany

- Developed an optimal source data subsampling method [*AdaptSampler*] for improved **unsupervised domain adaptation (UDA) performance in autonomous driving** applications.
- Collaborated with the team at Parallel Domain to **collect a synthetic autonomous driving dataset** that provides a major upgrade over existing datasets in terms of realism and diversity while comprising a comprehensive annotation set with multiple 2D and 3D modalities.

EDUCATION

M.Sc. in Computer Science

Universität des Saarlandes and Max Planck Institute for Informatics

November 2020 – April 2023

Grade: 1.5/5
Coursework: Probabilistic Graphical Models & Applications, Neural Networks: Theory and Implementation, Optimization for Machine Learning, Human-Computer Interaction, Image Processing & Computer Vision, High-Level Computer Vision, Geometric Modeling, Computer Vision & ML for Computer Graphics

Thesis: Semantic Road Scene Understanding with Realistic Synthetic Data. Supervised by **Dr. Dengxin Dai**.

B.Tech in Electrical Engineering

ZHCET, AMU

August 2015 – July 2019

Grade: 1.34/5
Coursework: Introduction to AI, Mathematics I & II, Higher Mathematics, and Numerical Techniques.

Online Coursework: Generative AI With LLMs, Machine Learning, AI For Medical Diagnosis, Deep Learning Specialization Courses, TensorFlow Deep Learning Courses, Embedded Systems & IoT Specialization, and MATLAB Programming.

SKILLS

- **Concepts**: Computer Vision, Machine Learning, Domain Adaptation, Perception for Autonomous Driving, Medical Imaging, AI for Healthcare.
- **Programming**: Python, Matlab, Octave, and C/C++ (Beginner).
- **Frameworks & Tools**: PyTorch, TensorFlow, Keras, Docker, Git, Agile Scrum (Jira), Slurm (GPU Cluster), Sklearn, SciPy, NumPy, Flask, Pandas, OpenCV, Matplotlib, Apache Beam, Google Cloud Platform (GCP), Microsoft Azure, Confluence, and LaTeX.
- **Operating Systems**: Windows, Linux
- **Languages**: English (*near native*), Hindi (*native*), and German (*beginner*).

- **Modified Cityscapes annotation tool** to create **low-effort instant segmentation annotations** from semantic segmentation annotations for the **ACDC driving dataset**.

Research Assistant

German Research Center for AI

July 2021 – September 2021 Saarbrücken, Germany

- Proposing a **generalized model transferable to different medical image modalities** for improved performance on different vision tasks.
- The model was trained in a self-supervised way to learn representations for multiple medical image data modalities.

PUBLICATIONS

- **A. Jadon**, H. Wang, P. Thomas, M. Stanley, S. N. Cibik, O. Maher, L. Hoyer, O. Unal, and D. Dai, "RealDriveSim: A Realistic Multi-Modal Multi-Task Synthetic Dataset for Autonomous Driving," *IEEE Intelligent Vehicles Symposium*, 2025, [Accepted].
- C. Sakaridis, H. Wang, K. Li, R. Zurbrügg, **A. Jadon**, W. Abbeloos, D. Olmeda Reino, L. Van Gool, and D. Dai, "ACDC: The adverse conditions dataset with correspondences for robust semantic driving scene perception," *ArXiv e-prints*, 2024, Submitted to IEEE Transactions on Pattern Analysis and Machine Intelligence. arXiv: `2104.13395v4 [cs.CV]`.
- **A. Jadon**, S. Joshi, H. Prabhala, V. Ramachandra, L. Kini, A. Kulkarni, and S. Gowrishankar, "Deep Learning–Based Mitoses Recognition and Concordance Study with Pathologists," *Journal of Pathology Informatics*, 2021.
- **A. Jadon**, A. Varshney, and M. S. Ansari, "Low-Complexity High-Performance Deep Learning Model for Real-Time Low-Cost Embedded Fire Detection Systems," *Procedia Computer Science*, vol. 171, pp. 418–426, 2020.
- **A. Jadon**, M. Omama, A. Varshney, M. S. Ansari, and R. Sharma, "FireNet: A Specialized Lightweight Fire & Smoke Detection Model for Real-Time IoT Applications," *preprint arXiv:1905.11922*, 2019.

OTHER R&D PROJECTS

- Computer Vision Based Underwater Autonomous Surveillance System.
  - ◇ Underwater abnormal object detection and tracking.
  - ◇ Efficient underwater image compression for faster data transmission via acoustic communication.
- Lightweight Fire & Smoke Detection Model for Real-Time IoT Applications
  - ◇ Deep learning based computer vision algorithm deployed to low-cost embedded systems. The product can differentiate between fire and smoke.
- Real-Time Mitosis Detection in Whole-Slide Breast Cancer Histopathology Images.
- Contrast to Adapt: Noisy Label Learning with Contrastive. Warm-up for Source-Free Unsupervised Domain Adaptation.
- Improving Semantic Segmentation Performance using Conditional Random Fields.

AWARDS & ACHIEVEMENTS

- Award for Best Holistic Performance in Academics and Research
- SSGSA Globar Scholar Award
- Science Academies' (IASc-INSA-NASI) Summer Research Fellowship

HOBBIES

- Strength Training
- Bouldering
- Listening to- and Playing Music

REFEREES

Dr. Dengxin Dai
@ Director of Research, Huawei Zurich Research Center
dengxin.dai@huawei.de

Dr. Lukas Hoyer
@ Research Scientist, Google Zurich
lukashoyer@google.com