



Pavan Kumar Kandapagari

Curriculum Vitae

Experience

- Aug '21–Present **Deep Learning Engineer**, AGILE ROBOTS AG, Munich, Germany.
- Developed PyTorch-based object detection tool to automate robotic vision system development, reducing repetitive coding and improving model training and testing.
 - Created deep learning library for computer vision-based anomaly detection with ready-to-use implementations of state-of-the-art algorithms and benchmark datasets. The library features PyTorch-Lightning-based models for easy deployment.
 - Optimized GitLab CI/CD pipeline for HPC-based deep learning model training, resulting in a streamlined workflow and improved resource utilization, security, and system efficiency.
 - Conducted training sessions to up-skill team members on GitLab CI/CD pipelines for deep learning model training on HPC systems.
 - Implemented a two-stage Deep Learning model for precise animal weight estimation, leveraging both RGB and depth images. The model was trained and validated using PyTorch and PyTorch-Lightning and deployed in both Python and C++.
- Sept '20 – March '21 **Deep Learning Master Thesis**, BOSCH, CR/ACE, Hildesheim, Germany.
- Developed and trained a robust model for object tracking in various environments for my thesis project, incorporating the Shared Memory Augmented Neural Networks (SHAMANN) deep learning paradigm and utilizing bounding boxes.
 - Demonstrated proficiency in object tracking and deep learning methodologies by leveraging temporal and global context information to accurately track multiple objects in crowded scenes.
 - Resulting model exhibited strong performance and potential for real-world applications, showcasing my ability to create effective and practical solutions using cutting-edge technologies.
- March '20 – Aug '20 **Deep Learning Intern**, AUVISUS GMBH, Karlsruhe, Germany.
- Redesigned the classification system for vision checkout using deep learning, with a focus on feature extraction and transfer learning techniques, developed entirely from scratch using Python.
 - Implemented the model using PyTorch, and improved inference speed with ONNX.
 - Trained a mobilenetv2 classifier for transfer learning using food data.
 - Created, refined, and documented 12 datasets for classifier and detector evaluation.
 - Maintained documentation using Confluence, and tracked project progress using Jira.

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Publications

April '21 [1] A. Niemann, A. Talagini, P. Kandapagari, B. Preim, and S. Saalfeld, "Tissue segmentation in histologic images of intracranial aneurysm wall," *Interdisciplinary Neurosurgery*, vol. 26, pp. 101307, 2021, doi: <https://doi.org/10.1016/j.inat.2021.101307>.

Education

Oct '18– April '21 **Master of Science**, *Otto-Von-Guericke universität*, Magdeburg, Germany, *German GPA – 1.8*.

Specialized in Computer science

Aug '11– April '15 **Bachelor of Technology**, *Jawaharlal Nehru Technological University*, Ananthapur, India, *Percent – 75*.

Specialized in Mechanical Engineering

Masters Thesis

Title *Deep Learning For Multiple Object Tracking in Crowded Scenes*

Supervisors Prof. Dr.-Ing. Sebastian Stober & Prof. Dr.-Ing. Sebastian Stober

Description This thesis proposes modifying SHAMANN to track multiple objects in a scene by considering their relationships and interactions through a shared external memory network. This approach improves robustness and reduces memory usage, and is evaluated using the MOTchallenge datasets.

Skills

Programming Python, Bash, Java, Dart, Rust

Machine Learning PyTorch, PyTorch-Lightning, Tensorflow, Scikit-Learn, RAPIDS, XGBoost

Tools \LaTeX , Git, Jira, Confluence, VS Code, Docker, Gitlab CI/CD

Languages

Telugu/Tamil **Mother tongue, Native Speaker**

English **Proficient**

IELTS CEFR level: C1, score: 7.5

German **Intermediate**

CEFR level: B1

References

- 1 Leela Sai Prabhat Reddy, Software Developer, Agile Robots AG, Munich, Germany | [linkedin.com/in/prabhat-reddy](https://www.linkedin.com/in/prabhat-reddy) | prabhatreddyk@gmail.com | +49 176 86960521
- 2 Atrayee Neog, Digital Solutions Engineer, Continental AG, Hamburg, Germany | [linkedin.com/in/atrayee-neog-995740113](https://www.linkedin.com/in/atrayee-neog-995740113) | atrayee.ent.aec@gmail.com | +49 176 74532641

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