Sai Bharadhwaj Matha

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About

An ingenious engineer with two years of experience in embedded systems and power electronics for UAS and one year as a research assistant in 3D computer vision and deep learning. I completed my M.Eng in Artificial Intelligence, with my thesis on Semantic Occupancy Prediction for UAS. I am passionate about advancing my career in AI, computer vision, and intelligent robotics, striving to contribute to cutting-edge innovations.

Education

2022 – 2025 Cham, Germany	**Master of Engineering in Artificial Intelligence for Smart Sensors and Actuators** *Technische Hochschule Deggendorf.* GPA: 1.4 Thesis: Real-world Semantic Occupancy Prediction for Advanced Air Mobility.
2016 – 2020 Rourkela, India	**Bachelor of Technology in Electrical Engineering** *National Institute of Technology Rourkela.* CGPA : 8.72/10.0
2014 – 2016 Visakhapatnam, India	**Higher Secondary Education** *Board of Intermediate Education Andhra Pradesh.* Percentage: 98.4

Professional Experience

2024 – present Ingolstadt, Germany	**Research Assistant** *Fraunhofer IVI* • Working on research focused on semantic occupancy prediction for UAS. • Expertise in computer vision, deep learning, and UAS avionics.
2023 – 2024 Ingolstadt, Germany	**Internship** *Fraunhofer IVI* • Developed a pipeline for 3D semantic point cloud generation.
2020 – 2022 Mumbai, India	**Embedded Systems Engineer** *Ideaforge Technology Private Limited.* • Led the development of the propulsion system, ensuring reliable performance. • Developed an FOC-based ESC for BLDC motors. • Developed Li-ion and Li-Po battery pack charging system.
2019 – 2019 Pune, India	**Internship** *Hachimichi Technology Private Limited.* • Firmware for automation and heart-rate monitoring of a toilet seat.

Projects

01.2025 – present	**Multi-Modal 3D Object Detection in Adverse Weather Conditions** • Designing a deep autoencoder for 2D feature extraction in adverse weather. • Planning to implement late fusion for multi-modal synthetic data generated in CARLA
01.2025 – 02.2025	**Novel Aerial View Synthesis using 3D Gaussian Splatting** • Used 3D Gaussian Splatting to create realistic novel views from aerial drone images. • Leveraging Metashape to output sparse reconstruction in COLMAP format.
06.2024 – 12.2024	**Semantic Occupancy Prediction for Advanced Air Mobility** *Master Thesis (expected publication: ICCV 2025 and NuerIPS 2025)* • A novel benchmark semantic occupancy dataset for UAS and trained SOTA models.

- Designed a data-generation pipeline that integrates 3D reconstruction, pose estimation, semantic fusion, mesh generation, voxelization, and voxel densification.

2023 – 2023	**6-DOF Autonomous Robot with Haptic Obstacle Sensing**

- Autonomous 6-DOF robot with haptic feedback for obstacle detection.
- ROS-Gazebo simulation in Docker for modular deployment.

Skills

Python — Proficient

Machine Learning and Deep Learning — Proficient

Computer Vision — Proficient

PyTorch — Proficient

Generative AI — Competent

Agentic AI — Competent

Kubernetes, Git — Competent

Docker — Competent

C,C++ — Competent

SQL — Competent

Robot Operating System(ROS) — Competent

STM32, RTOS — Competent

Linux — Competent

Data Structures — Competent

Languages

Telugu — Native/Bilingual
Mother Tongue

Hindi — Native/Bilingual
National Language

English — Native/Bilingual
IELTS score: *8.0/9.0*

German — Basic

Courses & Certificates

Big Data
Issued by Coursera

Quantum Computing
Elective from THD

MLOps (AWS): Deploying AI & ML Models
Issued by edX

AI Agents
Issued by Hugging Face

Organisations

2019 – 2020
Rourkela, India

VS Hall of Residence
Student elected representative

2017 – 2020
Rourkela, India

Plugged_IN
Vice President

Interests

- Cooking and blogging
- eFootball and gaming

References

Dr. Dmitrii Dobriborsci, *Professor,* Technische Hochschule Deggendorf
dmitrii.dobriborsci@th-deg.de

Henri Meess, *Manager,* Fraunhofer IVI
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Declaration

I affirm that all information provided is true and accurate to the best of my knowledge.

M. Sai Bharadhwaj.

Kothmaissling, 23.03.2025