Sai Bharadhwaj Matha

Male | 10.06.1999 | Single | INDIAN | Kothmaissling 37, 93413, Cham, Germany.

bharadhwaj2299@gmail.com | +49 155 108 59066 | github.com/Bharadhwajsaimatha

linkedin.com/in/saibharadhwajmatha | https://bharadhwajsaimatha.github.io/portfolio/

https://loose0ends.wordpress.com/

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
Full-time, 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

05.2025 – present
MonoSpatial: Agent-Based Spatial Distance Estimation in Monocular RGB Images
- Developed an agentic reasoning pipeline to select and orchestrate vision models for spatial queries dynamically. Fine-tuning for aerial scenes.
- Evaluating the Diffusion-based approach for estimating camera intrinsics.

03.2025 – 06.2025
Multi-Modal 3D Object Detection in Adverse Weather Conditions
- Design and train a deep autoencoder for 2D feature extraction in adverse weather.
- Implemented early-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 release and submission: CVPR 2026)
- A novel benchmark semantic occupancy dataset for UAS, trained SOTA models, and working on a novel model architecture for aerial scenarios.
- Developed a large-scale dataset with monocular RGB + thermal aerial imagery.
- 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++ — 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 — Conversational

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

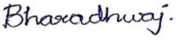
References

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

Henri Meess, *M.Sc., Manager,* Fraunhofer IVI
henri.meess@ivi.fraunhofer.de, +49 1725169897

Declaration

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



Kothmaissling, 03.06.2025