

Sai Bharadhwaj Matha

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About

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

Education

2022 – present Cham, Germany	Master of Engineering in Artificial Intelligence for smart sensors and actuators <i>Technische Hochschule Deggendorf.</i> GPA: 1.5 Thesis: Real-world Semantic Occupancy Prediction for Advanced Air Mobility
2016 – 2020 Rourkela, India	Bachelor of Technology in Electrical Engineering <i>National Institute of Technology Rourkela.</i> CGPA : 8.72/10.0
2014 – 2016 Visakhapatnam, India	Higher Secondary Education <i>Board of Intermediate Education AP, India.</i> Percentage: 98.4
2002 – 2014 Rajam, India	Secondary Education <i>Board of Secondary Education Andhra Pradesh</i> GPA : 9.7/10.0

Professional Experience

2024 – present Ingolstadt, Germany	Research Assistant <i>Fraunhofer IVI</i> <ul style="list-style-type: none">Working on research focused on semantic occupancy prediction for UAVs.Expertise in computer vision, deep learning, and UAV avionics.
2023 – 2024 Ingolstadt, Germany	Internship <i>Fraunhofer IVI</i> <ul style="list-style-type: none">Developed a pipeline for 3D semantic point cloud generation
2020 – 2022 Mumbai, India	Embedded Systems Engineer <i>Ideaforge Technology Private Limited.</i> <ul style="list-style-type: none">Aided circuit design and firmware development of UAV avionics.Developed an FOC-based ESC for BLDC motors.Developed Li-ion and Li-Po battery pack charging system.
2019 – 2019 Pune, India	Internship <i>Hachimichi Technology Private Limited.</i> <ul style="list-style-type: none">Firmware for automation of a toilet seat.Heart rate monitoring on a toilet seat.

Projects

01.2025 – present	Multi-Modal 3D Object Detection in Adverse Weather Conditions <ul style="list-style-type: none">Designing a deep autoencoder for 2D feature extraction in adverse weather.Planning to implement late fusion for multi-modal 3D object detection.Working on synthetic dataset generation using the CARLA simulator.
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06.2024 – 12.2024	Semantic Occupancy Prediction for Advanced Air Mobility <i>Master Thesis</i> <ul style="list-style-type: none">Created a novel benchmark semantic occupancy dataset for UAVs, with plans to publish in ICCV '25 and open-source the work.Designed a data generation pipeline integrating 3D reconstruction, pose estimation, semantic fusion, voxelization, and mesh generation.Trained SOTA occupancy prediction models on the generated dataset.
11.2023 – 02.2024	3D semantic point cloud generation <ul style="list-style-type: none">Generated dense semantic 3D point clouds with SfM and MVS, integrating semantic masks using SOTA models and novel fusion techniques.Proficient in COLMAP, Agisoft Metashape, OpenCV, and Open3D.
09.2021 – 03.2022	UAV SLAM (Simultaneous Localization and Mapping) <ul style="list-style-type: none">Contributed to developing a GPS-denied UAV navigation system employing depth and thermal cameras, with ORB-SLAM3.

Skills

Python — Proficient	Machine Learning and Deep Learning — Proficient
Computer Vision — Proficient	PyTorch — Proficient
ONNX, TensorRT — Competent	Generative 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 <i>Mother Tongue</i>	Hindi — Native/Bilingual <i>National Language</i>
English — Native/Bilingual <i>IELTS score: 8.0/9.0</i>	German — Basic

Courses & Certificates

Data Science with Python <i>Issued by Simplilearn</i>	Big Data <i>Issued by Coursera</i>
Quantum Computing <i>Elective from THD</i>	MLOps (AWS): Deploying AI & ML Models <i>Issued by edX</i>

Interests

• Cooking and blogging	• eFootball and gaming
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Organisations

2019 – 2020 Rourkela, India	VS Hall of Residence <i>Student elected representative</i>
2017 – 2020 Rourkela, India	Plugged_IN <i>Vice President</i>

Declaration

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

M. Sai Bhaskarthy.

10.01.2025