



Eiyas Kidanemariam Abraha

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👤 PROFILE

Enthusiastic robotics engineer with practical experience in localization, mapping, motion planning, and computer vision for autonomous systems. Familiar with multi-sensor fusion and real-time robotic applications. Skilled in Python, C++, and ROS.

🔧 WORK EXPERIENCE

01/2025 – Present
En-schede,
Netherlands

Saxion University of Applied Sciences Smart Mechatronics and Robotics (SMART) ✓

Robotics Research Intern

- Developed a **multi-sensor fusion pipeline** combining LiDAR, IMU, and prior map data, leveraging scan-to-map matching and high-frequency odometry.
- Integrate real-time dynamic **object detection** and removal from LiDAR scans, improving scan-matching stability in semi-dynamic environments.
- Achieved **sub-decimeter localization accuracy** without GPS, with **<35 ms latency**, using LiDAR-Inertial odometry and map observation fusion on KITTI, MulRan, and campus datasets.

07/2024 – Present
B"ohmenkirch,
Germany

Farming Revolution GmbH ✓

Robotics Software Intern

- Automated the **processing of geospatial field data (SHP, KML)** to extract field boundaries and obstacles, reducing manual path planning effort by **over 90%**.
- Designed a **row-based coverage path planning algorithm** tailored to field geometry, ensuring efficient and uniform traversal for precision weeding.
- Tested the algorithm in both **simulated and real-world field trials**, demonstrating reliable robot navigation and high-coverage accuracy.

02/2020 – 2023
Mekelle, Ethiopia

Lion International Bank ✓

System Developer

- Ensured high system availability by debugging and maintaining critical backend and client-facing software solutions.
- Delivered IT support and digital infrastructure training to staff, increasing operational reliability and client satisfaction.

09/2018 – 02/2019
Addis Ababa, Ethiopia

iCog Labs ✓

Internship

- Gained practical experience in **Computer Vision and AI**, with exposure to tools such as **OpenCV** and basic machine learning techniques.

🎓 EDUCATION AND TRAINING

09/2023 – Present
Spain

Erasmus Mundus Joint Master in Intelligent Field Robotic Systems (IFROS)

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- Studied Autonomous Systems, Probabilistic Robotics, Machine Learning, and Robot Manipulation.
- Specialized in Computer Vision, Deep Neural Network Development and 3D Sensing and Sensor Fusion.

09/2014 – 07/2019
Ethiopia

B.Sc. in Computer Science and Engineering

Mekelle University

- Studied Algorithm Design, AI, Neural Networks, Computer Vision, and Robotics.



TECHNICAL SKILLS

Programming Languages

Python, C++, MATLAB, JavaScript
(Node.js, Vue.js)

Robotics Framework

ROS1/ROS2, Gazebo,
Rviz, GTSAM, Behavioral Trees

Geospatial Libraries

Shapely, GeoPandas, QGIS

Databases Management

MongoDB and MySQL

Computer Vision and AI

OpenCV, PCL, PyTorch, YOLO

Document writing

LATEX and Microsoft Office
tools

Development Tools

Docker, Git, Linux, VS Code,
Conda

Sensors and Perception

LiDAR, GPS, Camera (RGB/RGB-
D), IMU, Sensor Fusion



OTHER LANGUAGES

English



HONOURS AND AWARDS

01/05/2019

Outstanding Performance in Huawei ICT Competition Global Final

Huawei Academy



PROJECTS

Autonomous Exploration of Unknown Environments Using Dubins Path-Oriented RRT* [↗](#)

Pose Graph SLAM using ICP-Based LIDAR Scan Matching and EKF-IMU [↗](#)

Autonomous outdoor GPS waypoint navigation [↗](#)

This project implements GPS waypoint navigation in an outdoor environment using Odoemtry, and magnetometer reading. It also includes path planning and dynamic obstacle avoidance using the DWA local planner included in the move-base ros package [Project Link]

Event-Based Feature Tracking Using ICP [↗](#)

Monocular Visual Odometry with KITTI Dataset [↗](#)

Custom Object Detection using CNN and Image Captioning [↗](#)

Pick and Place Object using Behavioural tree [↗](#)



REFERENCES

Prof Narcis Palomeras, Professor, University of Girona

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Maurice Gohlke, CEO and Founder, farming revolution GmbH

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