Ahmed Y. **Nurye**

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Research Interest

My primary research interest lies at the intersection of robotics, AI, and mathematical human behavior modeling. Robots are becoming increasingly integrated into human environments. My goal is to ensure the continued success of this integration by developing robust methodologies that guarantee safety, adaptability, and alignment with human values using techniques from machine learning, Bayesian inference, and inverse reinforcement learning.

Education

Warsaw University of Technology — *Warsaw, Poland*

M.Sc. in Robotics and Automatic Control — *Oct. 2022 – Oct. 2024*

- Advisor: Prof. dr hab.inż. Elżbieta Jarzębowska
- Thesis: Mobile Robot Navigation in Dynamic Environments

Addis Ababa Science and Technology University — *Addis Ababa, Ethiopia*

B.Sc. in Electrical Engineering — *Oct. 2016 – Sep. 2021*

- Advisors: Biruk Tadesse, M.Sc., and Mebaye Belete, M.Sc.
- B.Sc. Project: Smart Irrigation System Powered by Dual Axis Solar Tracker.

Publications

Google Scholar, † → Equal contribution

Conference Proceedings

[C1] **Nurye†, Ahmed Y.** and E. Jarzębowska†, "Deep reinforcement learning for mobile robot navigation in dynamic environments," in *(in submission) 2025 29th International Conference on Methods and Models in Automation and Robotics (MMAR)*, 2025.

Experience

Northvolt — *Gdańsk, Poland*

Systems Engineer | Model-Based Design and Function Development — *Apr. 2024 – Present*

- Developing algorithms for battery management systems (BMS).
- Created an automated code generation toolbox to streamline system integration.
- Defining requirements and conducting verification and validation.

Warsaw University of Technology — *Warsaw, Poland*

Graduate Research Assistant | M.Sc. Thesis — *Mar. 2024 – Oct. 2024*

- Applied deep reinforcement learning to improve robot navigation in dynamic environments.
- Achieved a ~13% improvement in navigation success rate over the baseline method in dynamic settings.

New Era Research and Development Center — *Addis Ababa, Ethiopia*

Research Intern — *Apr. 2021 – Jun. 2021*

- Worked on the design and implementation of a differential-drive robot.
- Developed and tested the robot's path-planning algorithms (bug, wavefront, line-follower).

Teaching

2022 **Introduction to Control System (*EEEg4155*)**, Teaching Assistant & Lab Instructor — *AASTU*

2021 **Electrical Measurement & Instrumentation (*EEEg3153*)**, Teaching Assistant — *AASTU*

Skills

Programming Python, C/C++, MATLAB/Simulink, Octave, Shell Scripting(bash)

Libraries PyTorch, Scikit-Learn, OpenCV, Matplotlib, Numpy, Pandas, PCL

Other Tools Linux, ROS2, Gazebo, Git/GitHub, Docker, MS Office, LaTeX

Languages English, Amharic

Awards and Honors

2024	**Summa Cum Laude [✹],** Graduated with highest honors, M.Sc. in Robotics & Automatic Control.	*WUT*
2024	**Mr Tomaka's Scholarship**, Awarded for academic excellence at Warsaw University of Technology.	*WUT*
2022	**Banach Scholarship**, Fully funded 2nd-cycle studies in Poland, covering tuition and living expenses.	*NAWA*
2021	**Summa Cum Laude [✹],** Graduated with highest honors, B.Sc. in Electrical Engineering.	*AASTU*

Services

2019	**Charity Affairs Coordinator,** Led the charity initiatives of the AASTU Students' Union, organizing fundraising and outreach efforts.	*AASTU*

Professional Membership

2024– **Black in AI**, Member

2023– **IEEE Robotics and Automation Society**, Member

2023– **Institute of Electrical and Electronics Engineers (IEEE),** Graduate student member