Ahmed Yesuf **Nurye**

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Research Interest

My primary research interests lie at the intersection of robotics, AI, and mathematical human modeling. By integrating methods from machine learning, Bayesian inference, and reinforcement learning, I aim to improve how robots navigate and interact with their surroundings safely and intuitively.

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, A.Y.** & Jarzębowska, E. *Deep Reinforcement Learning for Mobile Robot Navigation in Dynamic Environments* in *2025 29th International Conference on Methods and Models in Automation and Robotics (MMAR)* (2025), 83–88.

Experience

Scania Group   *Gdańsk, Poland*

Systems Engineer   *Apr. 2024 – Oct. 2025*

- Engineering requirements and implementing core BMS algorithms, such as hot-connection management and EU Battery Regulation compliance, to ensure system safety and regulatory conformance.
- Taking part in end-to-end verification & validation of BMS functions to enhance software reliability and accelerate delivery cycles.

Northvolt   *Gdańsk, Poland*

Systems Engineer   *Apr. 2024 – Apr. 2025*

- Did comprehensive verification & validation of battery management system functions, identifying critical issues and ensuring adherence to performance specifications.
- Developed and deployed a Python package for automated code generation using Jinja2 templates to standardize system integration workflows and reduce manual implementation effort.

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

Research Intern   *Apr. 2021 – Jun. 2021*

- Contributed to a differential-drive mobile robot's mechanical and control design.
- Implemented and evaluated classical path-planning algorithms in simulated and real environments, including bug and line-following methods.

Teaching

Addis Ababa Science and Technology University

2022	**Introduction to Control System (*EEEg4155*),** Teaching Assistant & Lab Instructor
2021	**Electrical Measurement & Instrumentation (*EEEg3153*),** Teaching Assistant

Skills

Programming	Python, C/C++, MATLAB/Simulink, Octave, Shell Scripting(bash)
Libraries	Gymnasium, Genesis, MuJoCo, OpenCV, PyTorch, Scikit-Learn
Other Tools	Linux, ROS2, Gazebo, Git/GitHub, Docker, LaTeX
Languages	English, Amharic

Tools and Software

gym-turtlebot: a turtlebot4 gymnasium environment
website
 Python | ROS2 | Gazebo Sim   *Mar. 2025 – Present*
- A ROS2 and Gazebo based simulation environment for TurtleBot4 that provides a minimal setup for quickly prototyping DRL agents for navigation using gymnasium API.

MBD Simulink
GitHub
MATLAB | Simulink   *Dec. 2024 – Present*
- A productivity tool that automates block insertion, naming, and connection tasks in Simulink to streamline model-based design workflows.

pdfx
PyPi | GitHub
 Python   *May. 2025 – Present*
- Command-line tool for pdf inspection and operations including merge, split, extract, remove, encrypt, decrypt, and conversion to pdf.

LaTeX-SoP: a modular statement of purpose template
GitHub
LaTeX   *Apr. 2025*
- A modular statement of purpose template for graduate school applications.

Leadership and Outreach

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

Awards and Honors

2024	**Summma 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*

Professional Memberships

2024–	**Black in AI**, Member
2023–	**IEEE Robotics and Automation Society**, Member
2023–	**Institute of Electrical and Electronics Engineers (IEEE)**, Graduate student member