Noel Ekbrand

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Education

Lund University — Lund, Sweden

Master of Science in Mechanical Engineering, Specialized in Mechatronics — *September 2018 - January 2026*

- **Organizations/Projects**: Mechanical Engineering Guild: Nomination Committee Member, Introduction Event Organizer
- **Relevant Coursework**: Automation, Applied Mechatronics, Real-Time Systems, Service Robotics, Applied Machine Learning, Power Electronics, Mechatronics - Industrial Product Design

NTI Johanneberg — Gothenburg, Sweden

Technology Program - Information and Media Technology — *September 2015 - June 2018*

Work Experience

Alfa Laval — Lund, Sweden

Master's Thesis: Robotic Motion Planning and Safe Homing Solutions — *September 2025 – January 2026*

- Developed a RobotStudio Add-in in C# to solve robotic homing and recovery problems in industrial robot cells.
- Implemented multiple motion planning approaches, including RRT-Connect and A* algorithms, for collision-free path planning in both TCP space and joint space.
- Integrated environment mapping and path planning using Python and search-based optimization techniques.
- Improved system robustness, safety, and recovery behavior in automated environments.

Liseberg Tyrolen — Gothenburg, Sweden

Bartender, Waiter — *April 2022 – August 2023*

- Collaborated with a small bartending team in a fast-paced, high-pressure environment to efficiently prepare and serve a wide variety of beverages.
- Independently managed an indoor bar, handling customer orders and ensuring smooth service delivery.
- Served up to eight tables simultaneously as a waiter, maintaining high standards of customer satisfaction and service quality.
- Supported large-scale events with up to 200 guests, working closely with a senior team to deliver seamless hospitality.

Projects and Achievements

Embedded Servo Control System: Developed an embedded servo control system using a microcontroller and custom-built circuits to control DC motor speed via computer interface; designed, soldered, and programmed the system in C.

Rescue Robot in Maze: Built an Arduino-based rescue robot capable of navigating a maze using a PID-controlled line sensor and retrieving multiple objects with a custom gripper system.

Electric Motor Prototype: Designed and built a modular electric motor prototype using 3D-printed components and Arduino, featuring five interactive stations to demonstrate magnetism, coil function, motor control, and gear transmission for educational purposes.

Skills

Software: RobotStudio, CODESYS, Arduino IDE, MATLAB, Simulink, SolidWorks, Creo PTC, Java, Python, C, C#
Spoken Languages: Swedish (Native), English (Fluent)