

# Ethan Niv

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Robotics, path planning and control engineer with experience deploying real-time, hardware–software systems

## EXPERIENCE

**Robotics Graduate Teaching Assistant** - Mechatronics, Dynamics, Math for Robotics and Foundations of Robotics, *Sep 2025 – Present NYU Tandon School of Engineering*, New York City, United States

- Supported graduate-level robotics coursework covering kinematics, state-space control, estimation (Kalman / BLUE / SVD), and system modeling

**Software Engineer**, *June 2021 – December 2023*

*Zalirian LTD., Tel Aviv, Israel*

- Designed and implemented a production-grade, real-time edge control and perception system, integrating motors, industrial cameras, and external hardware SDKs
- Built high-performance, maintainable software architecture, leveraging multithreading, multiprocessing, design patterns, and C++/Python interoperability (Pybind), with robust logging and telemetry for real-time monitoring and post-deployment support.
- Implemented a Motion Planning algorithm to assure movement efficiency and safety in a 5DoF system with physical limitations and obstacles, thereby improving the movement efficiency and safety.

**Software and Hardware Developer**, *October 2018 – April 2021*

*Israeli Air Force, Israel*

- Spearheaded end-to-end field deployments of mission-critical hardware/software systems, overseeing physical installation, sensor integration, and system validation in live environments.
- Reverse-engineered and modernized legacy airborne and sensor systems, integrating new hardware with existing infrastructure.
- Interfaced with complex sensor and data acquisition systems, applying signal processing to evaluate system accuracy, reliability, and safety.
- Performed system-level fault analysis and debugging to support flight investigations and operational readiness. • Delivered solutions in environments requiring high reliability, rapid diagnosis, and clear technical documentation.

## SKILLS

**Software:** Python, C++, ROS2, GIT, Pybind, LabVIEW, OpenCV, PyQt, MatLab, Simulink

**Technical:** Motion Planning, Control Theory, Signal Processing, Sensor and Actuator Integration, Project Management, Client-Development, Requirements analysis, Device Drivers & SDK Integration

## PROJECTS

**M.Sc Mechatronics Projects:** Programmed a SCARA robot arm that can reproduced intricate sketches using RPi, Arduino and ArUco markers. Simulator for forward and inverse kinematics of a 6DOF robotic arm; Path Planning on UR16e robotic arm in Gazebo using ROS2; Designed and implemented MPC, MPPI controllers for a simulated drone / robotic arm, Designed a full AMR simulation from dynamics, to motion planning and multiple controllers, using a modular architecture for switching between planners and controllers.

**B.S Final Project:** Designing and implementing a self-balancing quadrotor drone control system.

## EDUCATION

**New York University Tandon School of Engineering Anticipated Graduation May 2026** M.S in Mechatronics and Robotics - Current GPA 3.96

Courses: Mechatronics, Foundations of Robotics, Mathematics for Robotics, Gait and Manipulation, Advanced Mechatronics, Reinforcement Learning and Optimization, Autonomous Mobile Robots, Localization

**Tel Aviv University Graduated June 2020** B.S. in Electrical Engineering and Computer Science

Courses: Introduction to Control Theory; Control Laboratory, Practical Feedback Systems; Introduction to Digital Control; Introduction to Modern Linear Control Theory; Advanced Laboratory for Control, Algorithms for Robotic Motion Planning, Algorithms for Robotic Motion Planning Workshop