

Nikola V. Maruszewski

☎ (847) 644-3542 | 🌐 www.nikola.cx | ✉ me@nikola.cx | 🐙 [Github](#) | 💼 [Linkedin](#) | 🐦 [Mastodon](#)

EDUCATION

Northwestern University

Evanston, IL

Bachelor of Science, Computer Science; Master of Science, Computer Engineering

Sep 2022 – Jun 2025

- **Score:** 4.00/4.00
- **Relevant Coursework:** Operating Systems; Distributed Systems; Code Analysis and Transformation (in LLVM); Advanced Topics in Compilers; Compiler Construction; Parallel Architectures; Computer Architecture (with RISC-V); Advanced Digital Design (in Verilog); Computer Networking; Machine Learning; Deep Learning

EXPERIENCE

Software Engineering Intern

Jun 2024 – Aug 2024

Caterpillar, Inc

Peoria, IL

Worked in the Autonomy and Automation Division on computer vision and data processing.

- Worked on the design and implementation of a new data warehouse and processing pipeline in Python.
- Designed and implemented distributed concurrency control systems for distributed compute with ZooKeeper.
- Worked a smartphone vehicle calibration system using OpenCV in Python.

Teaching Assistant

Jun 2023 – Present

Northwestern University

Evanston, IL

Acted as an undergraduate peer mentor for CS 321: Programming Languages and CS 213: Intro to Computer Systems.

- Held several office hours each week.
- Answered questions, both synchronously in office hours and asynchronously on a Piazza message board.

Undergraduate Researcher

Sep 2022 – Present

PARAG@N Lab

Evanston, IL

Led a research project to design improved Quantum Systems software.

- Designed and programmed a quantum compiler to optimize quantum circuits for emerging quantum computer topologies.
- Created a development framework and tools for further quantum systems research.
- Student leader of the project while an undergraduate student.

Campus Ambassador

Sep 2023 – Jun 2024

Ansys

Evanston, IL

- Researched, reached out to, and scheduled meetings with relevant campus groups to discuss Ansys' tools.
- Organized lunch info sessions for Ansys, including booking rooms and organizing food.
- Coordinated with a member of the Ansys team for the campus work.

PROJECTS

MediumAnt | C, Polulu Wixel, Polulu Micro Maestro, Servos

Jan 2022 – Feb 2022

- Six-legged ant-like robot created in collaboration with Dr. Shai Revzen at the BIRDS Lab at the University of Michigan.
- Built from laser-cut styrofoam; moves using 360° servos controlled by a Polulu Micro Maestro.
- Movement control accomplished by two wirelessly communicating Polulu Wixels, one on the robot to control motors and the other connected to a PC to receive commands.

Self-Balancing Robot | C++, Arduino, MPU6050, L298N

Jan 2020 – Jul 2021

- Two wheeled self-balancing robot using a MPU6050 gyroscope and L298N motor controller.
- All code is written in C++; the motors are PID controlled using the angle of the robot reported by the gyroscope.
- The bulk of the work was done from 2020.01.06 to 2020.01.24, with additional work during July 2021.

AWARDS AND HONORS

McCormick Summer Research Award | Northwestern University

06.01.2023

Awarded a total of \$8000 to perform summer research on Quantum Computing.

Dean's List with High Honors | Northwestern University

Dec 2022 - Present

Awarded each quarter to students with a 4.00 GPA. Received every quarter starting Dec 2022.

TECHNICAL SKILLS

Programming Languages: Python, C, C++, JavaScript, Java, MATLAB, Shell Script, x86 Assembly, ARM Assembly, RISC-V Assembly, HTML, CSS

Machine Learning: PyTorch, NumPy, Polars, Scikit-learn, Linear Algebra, MLOps

Tools: Docker, Containerd, Make, CMake, Ruff and Flake8, Mypy, Poetry, Git, Github Actions, Linux, ZooKeeper

Robotics: Embedded devices, Embedded programming, ESP-32, Arduino, Intel 8051, Motor controls, Servos, Gyroscopes, PID Tuning, Motion processing, Command processing, Wireless communication, OpenCV