Nikola V. Maruszewski

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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:** Computer Architecture; Advanced Digital Design (with Verilog); Compiler Construction; Code Analysis and Transformation (in LLVM); Interfaces and UI/UX Design; Machine Learning; Deep Learning

EXPERIENCE

Software Engineer   Jun 2023 – Present
Northwestern Fintech Club   *Evanston, IL*
Helped build and maintain a trading infrastructure using C++, Python, CMake, Machine Learning, libcurl, and libuv.
- Created a orderbook system to pull orderbooks from exchanges using libcurl and libuv, then push them into a Redis instance for consumption by ML prediction clients.
- Organized linting and build systems for multiple projects, in C++ and Python.
- Helped create a devlopment architecture for the coming years, with a focus on reducing technical debt.

Summer Undergraduate Researcher   Jun 2023 – Sep 2023
PARAG@N Lab   *Evanston, IL*
Funded by an NSF REU and a grant from the NU CS department, I was able to perform cutting-edge research on quantum computing.
- 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.

Teaching Assistant   Jun 2023 – Aug 2023
Northwestern University   *Evanston, IL*
Acted as an undergraduate peer mentor for CS 321 Programming Languages.
- Held several office hours each week.
- Answered questions, both synchronously in office hours and asynchronously on a Piazza message board.

Campus Ambassador   Sep 2023 – Present
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 recieve 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

Rebecca Ashley Thatcher Award for Overall Academic Achievement | *Roycemore School*   2022.06.03
Awarded to the best-performing student in the Roycemore Senior class.

Headmaster's Award | *Roycemore School*   2022.05.13
Awarded to the Senior best representing Roycemore's Core Values.

TECHNICAL SKILLS

Programming Languages: Python, C and C++, JavaScript, Java, MATLAB, Shell Script
Machine Learning: PyTorch, NumPy, PolaRS, Scikit-learn, Linear Algebra
Tools: Docker, Containerd, Taskfile, Make, CMake, Ruff and Flake8, Mypy, Poetry, Git, Github Actions, Linux
Robotics: Embedded devices, Embedded programming, ESP-32, Arduino, Intel 8051, Motor controls, Servos, Gyroscopes, PID Tuning, Motion processing, Command processing, Wireless communication