



# Nikola V. Maruszewski

## Student and Researcher



### Profile

Computer science major with a passion for learning. I plan to complete a masters degree through the BS/MS program at Northwestern University. Currently performing quantum systems research with Prof. Nikos Hardavellas in the PARAG@N Lab. I also have interests in computer engineering, embedded devices, machine learning, and compilers.



### Work experience

Present  
↑  
Jun 2023

#### Summer Undergraduate Researcher *PARAG@N Lab*

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.

Aug 2023  
↑  
Jun 2023

#### Peer Mentor *Northwestern University*

Acted as an undergraduate peer mentor for CS 321 Programming Languages.

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



### Education

Present  
↑  
Sep 2022

#### Bachelor of Science, Computer Science *Northwestern University*

Score: 4.00/4.00

##### Relevant Coursework:

- CS 322: Compiler Construction
- CS 349: Machine Learning
- CS 449: Deep Learning

Jun 2022  
↑  
Aug 2018

#### High School Diploma *Roycemore School*

Score: 4.80/4.00

##### Relevant Coursework:

- AP Physics C: Mechanics and E&M
- CS 213: Intro to Computer Systems (Dual Enrollment @ NU)
- MATH 240: Linear Algebra (Dual Enrollment @ NU)



### Contact



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### Skills

#### Programming Languages:

- Python
- C and C++
- JavaScript
- Java
- MATLAB
- Shell Script

#### Machine Learning:

- PyTorch
- NumPy
- Polars
- Scikit-learn

#### Tools:

- Docker
- Containerd
- Taskfile
- Make
- Git
- Linux



## Volunteering

Jun 2022



Aug 2021

### Volunteer

#### *Distributed Proofreaders*

Proofread books for Project Gutenberg through Distributed Proofreaders.

- Gained valuable volunteering experience.
- Provided proofread books for public domain usage.



## Awards and Honors

2022.06.03

### Rebecca Ashley Thatcher Award for Overall Academic Achievement

#### *Roycemore School*

Awarded to the best-performing student in the Roycemore Senior class.

2022.05.13

### Headmaster's Award

#### *Roycemore School*

Awarded to the Senior best representing Roycemore's Core Values.



## Languages

English

Native Speaker

Serbian

Native Speaker

French

Conversational



## Interests

### Embedded Devices:

- ESP-32
- Pololu Wixel

### Computer Engineering:

- Hardware Design
- Architectures

### Programming Languages:

- Interpreter Design
- Compiler Construction
- Code Analysis and Transformation

### Machine Learning:

- Convolutional Neural Networks
- Reinforcement Learning
- Financial Prediction