

# NATANEL ROIZENMAN

Toronto, ON · nroizenm@uwaterloo.ca · (647) 542-2174 · natanel.ca

## EDUCATION

### University of Waterloo

BASc Computer Engineering

Relevant coursework: Digital Computers (ECE 222), Algorithms and Data Structures (ECE 250)

Waterloo, ON

Sept 2022 - July 2027

## SKILLS

Programming Languages: C, C++, Java, JavaScript, Python, SystemVerilog, VHDL

Technical Skills: Git, Xilinx ISE, SQL, Unix/Linux, Process Automation

Languages: English (fluent), Russian (fluent)

Interests: Reading, Photography, Hackathons

## PROJECTS

### PricePerfect *React, Python, Google Cloud*

<https://devpost.com/software/no-name-w08btv>

Created an app that provides accurate and up-to-date price estimates using web scraping and Google Cloud APIs for any object for Hack the North 2023, using machine vision for object classification.

### E-reader *C++, 3D Printing and CAD, Git, Soldering*

Developed a handheld e-ink reading device with a 3D-printed case and soldered components.

### Traffic Light Controller *VHDL, Intel Quartus Prime*

Implemented a traffic light controller using VHDL on an Alterra/Intel MAX-10 FPGA for ECE 124.

### Aim Training Game *Java, Git*

<https://github.com/nroize/aimtrainer>

Designed an aim-training game for training reaction time and hand-eye coordination, using object-oriented programming principles in Java.

### Automated Birdfeeder *STM32, C++, Git, Soldering*

<https://github.com/nroize/Birdfeeder-Code>

Solved the problem of pests stealing birdfeed by developing a birdfeeder with a pressure-based seed release mechanism, eliminating wasted seeds.

### PyEdsby *Python, Postman, Reverse Engineering*

<https://github.com/chtzvt/PyEdsby>

Spearheaded the development of a Python-based API wrapper for Edsby, one of the world's largest student information systems.

### Sarcasm Detection with Compressors *Python, Scikit-learn*

<https://natanel.ca/nlp>

Examined the viability of a novel compressor-based approach to natural language processing, achieving 63% accuracy in sarcasm detection tasks with minimal software overhead compared to existing solutions.

## EXPERIENCE

### Bialik Hebrew Day School

Toronto, ON

*IT Automation Engineer*

July 2019 - Aug 2023

- Engineered a cross-platform desktop app via Electron JavaScript framework for security badge generation, resulting in a savings of 5 man-hours weekly.
- Streamlined device repair processes through Google Apps Script, boosting repair throughput and slashing time-per-request by 30%.
- Conceived and implemented a device management database using Python and SQLite, eliminating the need for external services and saving \$5,000 annually.
- Oversaw the development of a scorekeeping and scheduling system for a sports-based fundraising event, using custom software to ensure smooth operations.
- Implemented Google Workspace tools integrating with the school's Student Information System (SIS) for use across the organization, enabling efficient data transfer and seeing 75% adoption across the school's staff.

### Waterloo Earth Sciences and Geology Club

Waterloo, ON

*Engineering Liason*

Sept 2022 - Dec 2022

- Facilitated a close-knit relationship between the club and the Faculty of Engineering.
- Represented the club's interests in the Engineering Society, securing funding and support.