

Clarke Needles

23gpb@queensu.ca | (416)-908-7288 | clarkeneedles.com

EDUCATION

Queen's University

Bachelor of Applied Science, Computer Engineering (3.5 GPA)

Kingston, ON

2023 – Present

- **Areas of Interest:** Embedded systems development and UI design.
- **Related Coursework:** Computer science, computer architecture, data structures and algorithms, mathematics, engineering design projects.

PROFESSIONAL EXPERIENCE

FUJIFILM VisualSonics

Quality Assurance Engineering Intern

Toronto, ON

May 2024 – August 2024

- C# to automate manual UI system tests through unit testing.
- Working with a large team, large codebase, development roadmaps, development tools, communication tools.

Software Engineering Intern

May 2025 – August 2025

- C and C++ to work with the WinAPI for the system apps. Working with ATL and COM objects.
- Developed a TreeView file navigator panel using the MVP model to improve productivity for a service team app.

PERSONAL EXPERIENCE

Individual Projects

- *Data Structures Project* — data structure library coded entirely in C including various algorithms.
- *Fractals Generator* — C++ application using Windows API. Generate multiple fractals using multithreading, SSE, and AVX. Timing of generation methods to illustrate the effect of larger registers for computation speed.
- *Password Manager* — password manager coded in Java with encryption. UI made with Swing.
- *Sketchy Skies* — video game coded in python using Pygame.

Team Projects

- *Audio Gain Amplifier* — AC-DC power supply using a 10:1 transformer, full bridge rectifier, and voltage regulator. Power supply fed into the high current gain Darlington audio amplifier using BJT's.
- *Automated Fluid Dispenser* — using Arduino, IR sensor, peristaltic pump, motors, and SolidWorks to design a precise concentration-based fluid dispenser for medical applications.
- *Predicting and Visualizing Wildfires* — using various Python libraries to interpret data with data frames and represent it visually using graphs and heat maps.
- *Machine Learning Project* — Python machine learning model to detect walking versus jumping.
- *Parcel Shield* — package safety system to combat against porch pirates. Using Arduino, MQTT broker, Flutter for web app, 3D printing, and external sensors.

ACTIVITIES AND LEADERSHIP

Level 3 Baseball Umpire — *Ontario Baseball Association*

2020 – 2022

Level 1 Snowboard Coach — *Georgian Peaks Ski Club*

2021 – 2022

Baseball Instructor — *East York Baseball Camp*

2022 – 2023

Canadian Computing Competition — *University of Waterloo*

2022 – 2023

PicoCTF Hackathon — *Carnegie Mellon University*

2022 – 2023

Men's Baseball — *Queen's University (2023 Canadian Baseball Guru Rookie of the Year)*

2023 – Present

SKILLS

Programming: Python, Java, C, C++, C#, Git, Jenkins, Jira, SVN.

Technical: Data structures and algorithms, OOP, GUI's.

Workplace: Effective communication, problem solving, professionalism, teamwork.

Languages: English, French.

Interests: Baseball, visual design, video editing, video game competitions and development, weightlifting.

References Available upon request.