# Rowan Gaertner

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## Education

**University of Waterloo** | *Bachelor of Software Engineering, Honours*          Sep 2023 – Present
- Coursework: Data Structures, Algorithms, Compilers, Computer Architecture, Formal Verification
- Alumni Scholarship, President's Scholarship, Software Engineering Society Representative

## Experience

**Miovision** | *Software Developer*          Jan 2025 – Apr 2025
- Delivered and maintained client facing features across an **Angular** monorepo and an **ASP.NET** application, including report export customization, cost calculation bugfixes, and a billing system upgrade
- Overhauled a configuration wizard, enabling customers to perform traffic studies on separated lanes
- Practiced pair programming with senior engineers and helped onboard new team members

**North Arrow Research** | *Full Stack Developer*          May 2024 – Aug 2024
- Wrote a **NodeJS** and **TypeScript** system to generate gifs of user photos, used in rich links for SEO
- Updated 110,240 **Python**-generated HTML watershed reports for improved layout and clearer charts
- Built versatile **React** components in a Gatsby theme to display tools and information on a landing page
- Developed **SQL** and Python scripts to generate user metric reports for web and **mobile applications**

**PixelPAD.io** | *Software Developer*          Jun 2021 – Aug 2023
- Developed an **AI**-powered chatbot using the OpenAI API to help beginners learn game development
- Implemented a comprehensive integration/E2E **testing** suite using Cypress, testing 870 components
- Created Coding League website based on a Figma design and using **SCSS** for mobile responsiveness
- Developed a drag-and-drop game development environment, translating into Python to help new programmers transition to text-based coding

**Under the GUI Academy** | *Instructor*          Jun 2022 – Aug 2022
- Created and taught a weekly curriculum of Python and Game Development for children ages 6-13

## Projects

**Hamber Place** | *AWS, Django, JavaScript, HTML/CSS*
- Replica of Reddit's r/Place clone built on **Django** with a JavaScript frontend
- Used to teach **HTTP requests** and cURL to group of 30+ Hamber Coding Club attendees

**Automatic Laser Pointer** | *Python, OpenCV, Raspberry Pi*
- Created a device that recognizes gestures and automatically shines a laser pointer as directed
- Used a Raspberry Pi and **OpenCV** for gesture recognition, controlled two servo motors as a gimbal using the GPIO pins and PWM, and turned the laser on/off using a discrete transistor

**Game Development** | *Godot, Python, PyGame, JavaScript*
- Developed a variety of games using Python, **Godot**, and PixelPAD.io, played over 265,000 times
- Highlights: platformer with optimized chunk-based rendering, intentionally hackable multiplayer web game

**Custom Desktop MP3 Player** | *Python*
- Built a fully featured desktop music player with playlist support, queueing, history, and responsive UI
- Engineered playback system using custom **data structures** to enable history and cross-playlist queues

## Technical Skills

**Languages:** C, C++, Python, JavaScript, TypeScript, SQL, Bash, Scala, C#, PHP, Ruby, GraphQL, HTML/CSS

**Technologies:** Node.js, React, Angular, ASP.NET, Django, Gatsby, Cypress, Express, Jest, GoogleTest, Godot

**Tools:** AWS, Docker, Linux, Jira, Git, DataDog, DigitalOcean, CI/CD, Make, GDB, Valgrind, REST API, OpenAI