

# Kai Wang

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## EDUCATION

**University of Waterloo** | BAsC in Computer Engineering (Software Engineering Option)

**Relevant Courses:** *Software Design & Architecture, Distributed Computing, Databases, Networks, Compilers, Algorithms*  
Sep 2021 - Present

## SKILLS

**Languages/Frameworks:** C#/.NET, Ruby on Rails, Python, SQL, Java, C, C++, React, HTML, CSS, Javascript, Blazor

**Tools/Technologies:** NUnit, RSpec, PostgreSQL, PyQt, Selenium, AWS, GCP, DevExpress, WinForms, Docker, OpenCV

## EXPERIENCE

**Workleap** | Software Developer Intern

Jan 2025 - Apr 2025 | Montreal, QC

- Developed backend features for Workleap's LMS team using **Ruby on Rails** following MVC principles and testing via **RSpec**
- Created a multithreaded algorithm for AI-powered course generation, leveraging **Sidekiq** for asynchronous job execution
- Supported feature development by constructing **PostgreSQL** migrations, modifying Rails routes, and exposing backend APIs
- Integrated **OpenTelemetry** tracing with **Honeycomb** to monitor application performance and improve system observability

**Senstar Corporation** | Software Developer Associate Intern

Jan 2024 - Apr 2024 | Waterloo, ON

- Built an advanced VMS security system in **C#/.NET** with **DevExpress Winforms** and **SQL Server** for database management
- Implemented a modular third-party integration, utilizing design patterns such as dependency injection and singletons
- Applied test-driven development with the **NUnit** framework, writing structured unit tests in the Arrange/Act/Assert pattern

**Titanium Agency** | Software Engineer Intern

May 2023 - Aug 2023 | Waterloo, ON

- Designed a real-time data pipeline in **.NET Core** to extract live advertisement expense data from **GCP** services like **BigQuery**
- Automated ad creation and management by leveraging the Google Ads API with asynchronous backend **Python** scripts
- Streamlined ad profit and performance analysis via a hybrid **JavaScript/Blazor** web app backed by **CloudSQL** reporting data

**Miovision** | Software Developer Intern

Sep 2022 - Dec 2022 | Kitchener, ON

- Supported the maintenance of a road traffic data analysis platform built with **Ruby on Rails** and backed by **MySQL**
- Contributed to core feature development by creating internal **API** endpoints and unit & integration tests using **C#/.NET**
- Retrieved large-scale datasets from **AWS S3** using optimized, high-performance **SQL** queries to manage traffic study data

**UPlus Education** | Web Developer Intern

Jan 2022 - Apr 2022 | Toronto, ON

- Rebuilt the company's public website in **React** migrating from a legacy **WordPress** site to enable greater future scalability
- Created and taught an introductory **Python** course covering core programming concepts, OOP, and basic data structures

## PROJECTS

**Watolink Engineering Student Design Team** | watolink.ca

- Engineered a brain-computer interface using action classification via EEG signal analysis in **Python** with a **PyQt** GUI
- Integrated the **DALL-E** AI model via **Selenium** web scraping and enabled BCI-driven X interaction using the **Tweepy** library
- Placed **1st** overall in the NeuroTechX global undergraduate non-invasive neural interface student club competition

**SpyWatch** | github.com/k429wang/SpyWatch

- Created a drone-based, video-only surveillance device that combines real-time video footage and AI-powered lip reading
- Programmed in **Python** using the Tello Drone SDK via UDP web sockets, and **FFmpeg** for video decoding and streaming
- Winner of the Symphonic Labs API award at **Hack the North 2024** for creatively applying AI in audioless environments

**Travel Lens** | github.com/k429wang/TravelLens

- Created an eye-tracking translation device using **Google Cloud Vision** and real-time OCR with live text-to-speech playback
- Interfaced with the AdHawk MindLink API in **Python** to trigger translations via blink detection and precise gaze tracking
- Processed and cropped images using **OpenCV** for foreign-language text extraction and TTS playback using **Google TTS**