

# ANDRE KE

Toronto ON

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## Technical Skills

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**Languages:** Python, Java, C++, HTML/CSS, JavaScript, TypeScript

**Technologies/Developer Tools:** React, Next.js, Vite, Docker, MongoDB, MySQL, Git, GitHub, Figma, Jira

## Experience

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### Teaching and Research Assistant

May 2025 – Aug 2025

*University of Waterloo*

*Waterloo*

- Developed an image processing pipeline in Python using NumPy and Scikit-image to detect and highlight potentially cancerous tissue in brain MRI scans utilizing Correlated Diffusion Imaging
- Created 3D "glass brain" visualizations by converting NIfTI (.nii) files into VTK surface meshes with ITK-SNAP, then rendering the final models in ParaView to achieve a comprehensive, multi-dimensional view of statistical data
- Authored 8+ new assignments and mentored over 250 students for Data Structures and Algorithms, leading weekly extension tutorials to clarify complex topics like dynamic programming and graph algorithms.

### Software Developer

Sep 2024 – Dec 2024

*Hire Harmoni*

*Remote*

- Engineered a full-stack SaaS application from scratch, building the front-end with TypeScript, Next.js, and Tailwind CSS and integrating a Supabase backend.
- Translated Figma designs into over 15 responsive pages and a library of reusable components, directly collaborating with the design team to refine the user experience.
- Integrated multiple APIs to handle user authentication, data fetching, and real-time updates, ensuring robust application functionality.

### Software Quality Assurance Specialist

Sep 2024 – Dec 2024

*Siemens Healthineers*

*Ottawa, ON*

- Executed system, integration, and validation testing across embedded systems, Windows Mobile, Android PDA, and web-based applications, ensuring regulatory compliance for medical devices.
- Developed automated test scripts in Python with Appium, resulting in an increase of 5% in total test case coverage. Collaborated on framework improvements with the Automation and Development teams in Sprints on Azure DevOps.
- Explored the implementation of a virtual Bluetooth stack using the Google Bumble library and Websockets in a Azure Cloud environment to enable interaction between a device emulator and a virtual .NET Bluetooth emulated device for automated testing.

### Recreation Software Support

Jan 2024 - Apr 2024

*City of Brampton*

*Brampton, ON*

- Performed User Acceptance Testing on beta software releases through the creation of Python Selenium scripts, resulting in the catching of over 10 bugs prior to public release to ensure reliability in a system of over 500,000 accounts.
- Initiated the development of a modular Python desktop GUI with tkinter to easily launch and view results from Selenium tests for non-technical staff to use.
- Created reports for sales and staffing at facilities using Power BI, Excel, and Microsoft SQL servers to aid facility management in decision making of staffing.

## Projects

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### ESG Analyzer | *React, TypeScript, Next.js, Tensorflow*

Winter 2024

- Developed a full-stack ESG Content Analyzer using Next.js 15, React 19, TypeScript, and Tailwind CSS (frontend), with Next.js API Routes (backend) to scrape web content via Cheerio/Axios and provide comprehensive ESG scores.
- Implemented a custom TensorFlow.js (LSTM) and Natural.js neural network for real-time sentiment analysis and applied TF-IDF for advanced text analysis and category-specific ESG scoring.

## Extracurricular

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### UW Engineering Orientation

Spring 2024

*Website Director*

*University of Waterloo*

- Updated the UI of the orientation website using React and Tailwind.css. Worked in a containerized environment with Docker. Fixed APIs that interacted with a MySQL database for updating orientation team points.

## Education

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### University of Waterloo

Sep. 2023 – May 2028

*Candidate for Bachelor of Applied Science in Systems Design Engineering*

*Waterloo, ON*