

# Khoa Tran

Currently located in Ottawa, ON, Canada (EST). Open to relocate.  
Available now.

## Work Experience

### Biomedical Ultrasound Research and Teaching Assistant @ Carleton University

Sept 2021 – Aug 2023

- Collaborated with clinical doctors, biomedical engineers, and PhD candidates to develop computer vision, signal/image processing, and machine learning methods for wearable ultrasonic sensor applications using Python, Jupyter Notebooks, and MATLAB.
- Iteratively designed, constructed, and evaluated wearable ultrasonic sensors.
- Developed a customized Python library and GUI to parse, process, and analyze ultrasound signal data, images, and videos using scientific Python modules and the Qt framework.
- Presented preliminary studies and experimental results at various conferences and research events, publishing 4 conference papers and winning the 3<sup>rd</sup> place presentation award at the 8<sup>th</sup> IEEE Research Boost.
- Guided and graded undergraduate engineering students for software, computer, and biomedical engineering courses.

### Network Management Solutions Developer @ Nokia Canada Inc.

Apr 2020 – Aug 2020

- Developed and maintained customized features for Nokia's Network Services Platform using Java, the Spring framework, and Maven.
- Updated and replaced deprecated dependencies for user authentication in Nokia Service Portals.

### Front End UI Software Developer @Ciena

Sept 2019 – Dec 2019

- Led and delivered major UI features to Ciena's Manage, Control and Plan product with agile and test-driven development using Ember.js, JavaScript, HTML, and SCSS.
- Designed and implemented flexible, generic, and self-contained UI components using JavaScript, HTML, and SCSS in accordance with UX specifications.
- Refactored codebases to adhere to coding conventions and participated in code reviews.

### COOP Engineer & Software Designer @ Thales (formerly Gemalto)

Jan 2019 – Aug 2019

- Resolved X509 certificate parsing bugs and implemented multi-threaded manufacturing for Thales smart cards using Java, Java Card, C++, and C.
- Built a UNIX CLI tool to track automated Jenkins tests and publish summaries to Jira using Python, replacing paid Zapier integration and saving \$500+/year.
- Designed, drove, and deployed an internal web application to facilitate interactions, analyses, and Excel report generation with PostgreSQL test performance databases using Python, Flask, JavaScript, jQuery, HTML, CSS, and Docker.

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[khoatran.dev](http://khoatran.dev)

## Education

### MASc., Electrical & Computer Engineering

Carleton University, Sept 2021 – Aug 2023

Awarded the Vector Scholarship in AI (2021) and NSERC CGS-M (2022).  
Nominated for University Senate Medal.

### B.Eng., Biomedical & Elec. Engineering

Carleton University, Sept 2016 – Apr 2021

Graduated with High Distinction and Senate Medal for Outstanding Academic Achievement.

## Skills

### Programming Languages

Python, MATLAB, Java, C++, C, Bash  
JavaScript, TypeScript, HTML, CSS, SCSS

### Libraries & Frameworks

PyTorch, Jupyter Lab, Flask, Qt, Vue.js,  
Ember.js, React, TailwindCSS

## Projects

### Silent Speech Classification

Signal and image processing pipeline with a 3D-CNN that classifies phonetic words from ultrasound videos of the tongue.

### Artery Wall Motion Tracking

A U-Net semantic segmentation model to measure carotid artery wall diameter and a CNN-LSTM to track wall movement built with TensorFlow.

## Extracurricular Activities

### Carleton Artificial Intelligence Society

Sept 2021 – Aug 2022

Prepared and presented machine learning lectures, coding workshops, and student Kaggle competitions as a Technical Workshop Lead.