

# Jathushan Kaetheeswaran

BIOMEDICAL ENGINEERING · UNIVERSITY OF WATERLOO

☎ 647-703-8902 | ✉ [jkaethee@uwaterloo.ca](mailto:jkaethee@uwaterloo.ca) | 🏠 [jkaethee.github.io/jathushan.me/](https://jkaethee.github.io/jathushan.me/) | 📱 [jkaethee](#) | 🌐 [jkaethee](#) | BME 3B

## About Me

**Programming** Java • Python • JavaScript/JSX • HTML/CSS • C# • SQL

**Web Development** Node • React • Redux • Django • Express • Feathers • Firebase • PostgreSQL • Flask • Webpack • Socket.io • Material UI

**Frameworks/Tools** Docker • Postman • Xcode • React Native • Jira • Spring • Selenium • Git • Jenkins • Bitbucket • Figma

## Work Experience

### Software Developer | Cyclica

Toronto, ON

SCIENTIFIC PLATFORMS TEAM

May. 2021 - Aug. 2021

- Initiated and deployed scientific pipeline for uploading quantitative and qualitative measurement data by leveraging **Python + Django + React + Redux** to develop **RESTful APIs** and responsive front-end components for real-time validation, **reducing user troubleshooting by 90%**.
- Remodelled notification logic for proteomic jobs with **PostgreSQL + Django** to improve user experience and dynamically create messages.
- Coordinated with research scientists to maintain and improve drug discovery platform in a **Linux environment** by using **Selenium Webdriver** to **increase automated test coverage by 15%** and **refactoring 300+ lines of JavaScript code** to improve code health.

### Full Stack Developer | University Health Network

Toronto, ON

PATIENT REPORTED OUTCOME MEASURES (PROM)

Sep. 2020 - Dec. 2020

- Rapidly developed web application used by **31000+ patients** at the Princess Margaret Cancer Centre with **React** for creating responsive survey pages, **Express + Docker** for organizing development servers, and **PostgreSQL** for managing APIs through a **Socket.io** transport.
- Structured client-side application as a **Progressive Web App (PWA)** by adding native app-like functionality such as adding to homescreen and offline caching. Created scripts using **JS + PostgreSQL** for sending push notifications to desktop and mobile clients.
- Independently assembled web app under Dr. Deepali Kumar for COVID-19 research study by using **Feathers + Express + Postman** for designing **RESTful APIs** to email participants. Leveraged **reCAPTCHA + React** for improving site security and integrated **Docker** for containerization.

### Full Stack Developer | Placenote

Toronto, ON

WEB DEVELOPMENT TEAM

Jan. 2020 - May. 2020

- Led development of client-side web application, used by **6000+ customers**, focused on data management using **React** for creating new components, integrating APIs with **async programming**, and managing application state with **Firebase Realtime Database** and **Redux**.
- Implemented **RESTful APIs** using **Firebase Cloud Functions** for developer portal, allowing for API key regulation, unique project creation, resource deletion, individual map retrieval, and user validation to modify data.
- Spearheaded development of web application for virtual real estate tours by rapidly designing prototypes, programming an intuitive user interface for 3D data visualization using **JavaScript + Firebase + Three.js**, and **reducing model load time by 20%**.

### Software Engineer | PointClickCare

Toronto, ON

QUALITY AUTOMATION TEAM

Apr. 2019 - Aug. 2019

- Developed page objects and automated E2E tests for web application through Test-Driven-Development with **TestNG** and **Selenium WebDriver**.
- Utilized **Spring, Java**, and **SQL** in an Agile team to continuously deliver new data entry features, monitor and improve existing automation tests with **Jenkins**, and resolve client issues for CRM web application used by **1000+ skilled nursing facilities**.
- Improved financial web domain's automation repository by **lowering build failure rate from 20% to 4.75%** from 984 tests.

## Projects

### Image Convolution Visualizer

Pickering, ON

<https://github.com/jkaethee/image-convolution-visualizer>

Dec. 2020

- Created a web app with **Python** & **Flask** to facilitate understanding of image convolutions by using kernels to apply effects such as edge detection.
- Implemented image kernel and convolution logic for image processing by utilizing **Python** libraries such as **scikit-image**, **OpenCV**, and **NumPy**.

## Education

### University of Waterloo

Waterloo, ON

CANDIDATE FOR BASC IN BIOMEDICAL ENGINEERING

Sep. 2018 - Present

- University of Waterloo President's Scholarship of Distinction, Honours Co-op
- Relevant course work:** Image Processing, Pattern Recognition, Medical Imaging, Data Structures & Algorithms, Psychopathology