

# Akira Takaki

☎ 647-529-2926 | ✉ [akira.takaki@utoronto.ca](mailto:akira.takaki@utoronto.ca) | in [linkedin.com/in/akira-takaki](https://www.linkedin.com/in/akira-takaki) | 🐙 [github.com/DigestedLime](https://github.com/DigestedLime)

## EDUCATION

### University of Toronto

Sep. 2019 – Apr 2023

*HBSc. Computer Science & Mathematics*

- cGPA: 3.76
- Dean's List Scholar – Summer 2020, Winter 2021
- Relevant courses: Software Engineering, Software Design, Data Structures, Algorithms, Software Tools & Systems Programming, Numerical Analysis, Theory of Computation

## EXPERIENCE

### Software Engineer Intern

May 2022 – Aug 2022

*Amazon*

### Research Assistant

July 2021 – Aug 2021

*The Fields Institute*

- Worked under Prof. Kevin Cheung to efficiently optimize arithmetic circuits by 10% computation time
- Implemented optimization algorithms, such as syntactic factorization, in **C++**, using edge and vertex elimination
- Curated data sets to test against benchmarks to measure the efficiency of our heuristics

### Teaching Assistant

Sep 2020 – Present

*University of Toronto*

- Taught and marked for Differential Calculus, Linear Algebra II, Intro to Mathematical Reasoning, Intro to Computer Science and Intro to Proofs
- Led tutorials & practicals of 30+ students, guided classroom learning for lectures of 90+ students, marked tests and assignments for 200+ students

### VP of Internal Affairs

June 2021 – Present

*Mathematical and Computational Sciences Society*

- Coordinated and organized social events and technical workshops for 1000+ Math, CS and Stats students

### Executive Member

Sep 2018 – May 2019

*Mackenzie Computer Programming Team*

- Organized a city-wide invitational for competitive programming, for about ~100 teams, each with up to 4 students
- Contributed to the online judge at [mcpt.ca](https://mcpt.ca), which automates running tests against submitted code for data structures and algorithms problems

## PROJECTS

### Baobab | *MongoDB, Express, React, Node*

- Designed a Community & E-learning platform for the African Impact Challenge, that serves 100 entrepreneurs
- Utilized **Three-Tiered** Architecture, **Jira**, **Git** flow and the **Agile** methodology, resulting in a cleaner codebase
- Implemented **RESTful APIs** with **NestJs**, for pagination of data and file transfers

### PCRS: Online Programming Exercises | *Django, Liquid, Python, JavaScript*

- Worked under Prof. Andrew Petersen to create exercises for Theory of Computation, a class of ~500 students
- Developed a web module that tests **regular expression** to DFA conversions to provide exercises for students

### Numerical Algorithms Visualizer | *React, TypeScript, Flask, Python*

- Implemented multiple algorithms, such as Newton's method, for high precision derivative calculations in **Python**
- Used **ApexCharts** to visualize precision and to compare the algorithms

### Diaphorikos | *Bootstrap, MathJax, C, CSS*

- Developed a website that uses the shunting-yard algorithm to parse a first order ODE to visualize its vector field

## TECHNICAL SKILLS

**Languages:** Python (NumPy, SciPy, Matplotlib), Java, C/C++ JavaScript, HTML/CSS, TypeScript, Racket, Haskell

**Frameworks:** React, Node.js, Flask, Django, NextJS

**Databases:** MongoDB, PostgreSQL, Neo4j

**Tools:** Git, Postman, Heroku, Docker, VS Code, PyCharm, IntelliJ, Eclipse