

# Johanan Idicula

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## EXPERIENCE

### **JUNIOR SOFTWARE DEVELOPER** Precision Analytics

Sep 2019 – Dec 2019 | Montréal, QC

- Developed and enhanced customized data management, analysis, and visualization **Shiny** dashboards using **R** **Tidyverse** libraries for clients in the pharmaceutical and biotechnology sectors.

## RESEARCH

### **UNDERGRADUATE RESEARCH ASSISTANT** Biological and Active Materials Lab, McGill University

Oct 2015 – Sep 2019 | Montréal, QC

Worked with Professor Allen Ehrlicher on cell mechanics projects:

#### **Probing the Mechanosensitivity of $\alpha$ -actinin-4** | [github.com/jidicula/fluoratio](https://github.com/jidicula/fluoratio) | Python

- Analyzes and visualizes microscopy images using the **datetime**, **numpy**, **scikit-image**, and **seaborn** libraries.
- Achieved a  $\frac{1}{N}$  runtime reduction using the Python3 **multiprocessing** library to parallelize the workflow using  $N$  idle processor cores.

#### **Magnetic Microrheology** | [github.com/jidicula/magtrack](https://github.com/jidicula/magtrack) | Python

- Worked with a Master's student to measure the material properties of cells using magnetic tweezers.
- Developed software to track objects in microscopy videos and load their positions into DataFrames for analysis and visualization.
- Integrated the **Trackpy**, **pandas**, **numpy**, **scikit-image**, and **seaborn** libraries into workflow.

#### **Cell Monolayer Deformation Microscopy** | Publication under review | MATLAB

- Quantifies and visualizes cell monolayer deformation from microscopy images.
- Cell Monolayer Deformation Microscopy – a new method to measure the planar mechanical properties of cell monolayers**, 2020.

Amy A. Sutton, Clayton W. Molter, Ali Amini, **Johanan Idicula**, Max Furman, Pouria Tirgar, Yuanyuan Tao, Ajinkya Ghagre, Newsha Koushki, Adele Khavari, Allen J. Ehrlicher.

## EDUCATION

### **MCGILL UNIVERSITY** B.Sc. Anatomy and Cell Biology

May 2020 | Montréal, QC, Canada

## TECH

### **LANGUAGES**

**Advanced Knowledge of:**

Python • Java • MATLAB • Bash • C

**Familiarity with:**

L<sup>A</sup>T<sub>E</sub>X • SQLite

R • SQL

### **TOOLS**

Git/GitHub • AWS • Debian GNU/Linux

Unix • macOS • Travis CI • HTML/CSS

Jira • Make • GDB • GNU gprof

GNU Emacs • Vim • GitHub Actions

Docker • Pandas

### **CONCEPTS**

**Advanced Knowledge of:**

Image Analysis • Computer Vision

Data Visualization • Asynchrony

Agile Development

Modular Programming

**Familiarity with:**

Multiprocessing • Data ETL

Automation • RESTful APIs

Machine Learning • Data Exploration

## PROJECTS

### **CANARY** Discord Bot | Python

**Dec 2016 - Present** | [github.com/idoneam/Canary](https://github.com/idoneam/Canary)

- Founded and contributed to Canary, a McGill Discord chatbot.
- Wrote a feature that fetches current weather conditions and warnings from Environment Canada using the **Requests** and **Beautiful Soup** libraries.
- Wrote a feature that posts Métro service notifications using the **Requests** library and the Société de Transport de Montréal API.
- Enhanced build quality by reviewing contributors' patches to ensure elegant implementation and successful integration.
- Coordinated and delegated group efforts for bugfixes and 60 features by 17 contributors.

### **PRETINDER** Proof of Concept for Tinder Exploit | Python

**Dec 2016 - Present** | [github.com/jidicula/pretinder](https://github.com/jidicula/pretinder)

- Exploited a Tinder RESTful API vulnerability to access premium features.
- Created a proof of concept using the **Requests** library to fetch and parse JSON responses for profile images hidden from non-Premium users, then compare them to profile images in the deck via **OpenCV** cross-correlation template matching.

## LANGUAGES

### **ENGLISH**

Native proficiency

### **FRENCH**

Conversational and basic reading comprehension

## EXTRACURRICULARS

### **DISCORD MODERATOR** McGill Discord chat

**2016–2019**

- Built a social community for 200+ McGill students.
- Drafted rules of conduct to make the chat safe and enjoyable for all.

### **BASS CHORISTER** | Church of St. John the Evangelist, Montréal, QC

**2020–present**

- Sings bass in an 8-voice choir specializing in ancient and classical choral music.

## HOBBIES

- Cooking
- Biking
- Guitar
- Indoor Gardening
- Tech Blogging: [forcepush.tech](https://forcepush.tech)

## REFERENCES

### **PROFESSOR ALLEN J. EHRLICHER**

**Associate Professor, Department of Bioengineering, McGill University**

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### **KATHRYN MORRISON**

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