

# Jae Gwan Park

Toronto, ON, Canada

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## EDUCATION

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### University of Toronto

*B.A.Sc. Engineering Science*

Toronto, Canada

*Sept. 2021 – Apr 2026*

- University of Toronto Scholarship, Lo Family Scholarship, Faculty of Applied Science and Engineering Scholarship

## EXPERIENCE

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### Sunnybrook Research Institute

*Research Assistant*

Toronto, Canada

*Aug 2021 – Present*

- Create data processing scripts using MATLAB, Python, and Beautiful Soup, to extract and analyze over 500 MRI images from an open-source database.
- Continue research project under Dr. Ryan Jones as a research assistant, working towards co-authoring a paper.

*Research Intern*

*Jul 2021 – Aug 2021*

- Worked as a programming intern under Dr. Ryan Jones and Dr. Kullervo Hynynen, investigating a novel transcranial phase correction method used in high frequency phased-array focused ultrasound (FUS) systems.
- Developed an automated image processing pipeline in MATLAB, to clean artifacts and segment bone tissue from Micro CT scans of rat skull caps.
- Devised algorithms that extract inner/outer skull meshes, for use in ray acoustic simulation models.
- Created MATLAB scripts to co-register skulls spatially with a FUS transducer to replicate prior measurements.
- Screened scientific literature proficiently, and presented research findings to laboratory.

### Incendium Academy

*Co-founder, Front-End Developer*

Toronto, Canada

*Oct 2020 – June 2021*

- Co-founded a grant-funded non-profit education platform that aims to level the playing field for high school students who cannot afford STEM contest preparation.
- Led a team of 15 people coordinating software development, product design, content creation, and marketing.
- Created a front-end using jekyll, markdown, and SASS, which hosted a functioning website that gathered 500+ unique impressions.
- Recruited international contest winners (AIME, CMO, CCO, IOI) to create video and written lessons based on a potent STEM contest-based curriculum.

## PROJECTS

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### Defeat the Heat | *Java*

May 2019

- Developed a full-stack computer video game using Java to teach users about fire safety.
- Created a GUI using hand drawn graphics and Java awt/swing libraries, that allows the player to navigate game menus and save/pause game progress.
- Utilized object oriented programming practices such as inheritance to structure player navigation and in-game mechanics.

### Home Security System | *Arduino, C/C++, TinkerCAD*

May 2021

- Created an Arduino system to simulate a smart home security system.
- Processed live signal feeds from Arduino components (IR, LDR, numpad, and button sensors) using back-end C/C++ code to control the home alarm.
- Designed, debugged, and optimized a functioning prototype on TinkerCAD software.

### Theatre Seating Widget | *Java*

Feb 2019

- Designed a sample theatre seating control system using Java.
- Used Java libraries to create a GUI that supports actions such as creating a seating reservation, checking seat availability, calculating seat pricing, etc.
- Implemented file I/O to create separate databases for individual theatre rooms.

## TECHNICAL SKILLS

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**Languages:** Java, MATLAB, HTML/CSS, Python, C/C++

**Technologies/Frameworks:** Git, ImageJ, LaTeX, Jekyll, VEXcode, TinkerCAD, SketchUp, Arduino

## LEADERSHIP

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### **Mackenzie Science Club**

Toronto, Canada

*Event Designer*

*Sept 2017 – Jun 2021*

- Designed and supervised 30+ year-long weekly events for over 150 active club members.
- Lead the chemistry branch of Mackenzie Science and Engineering Olympics (MSEO) for 300+ middle school students.
- Implemented the "Verify" Discord verification bot to help facilitate online club security.

### **North York Arts Cultura Festival**

Toronto, Canada

*Volunteer Leader*

*Jul 2018 – Jul 2019*

- Managed a large group of 20+ volunteers as head Volunteer Leader for the annual month-long Cultura festival at Mel-Lastman Square.
- Supervised and took on many front-facing roles, assisting with varying work including event set-up, tent management, and strike.
- Achieved the highest number of volunteer hours among all volunteers at Cultura.

## AWARDS

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- **(2021) Lo Family Scholarship:** \$5,000 awarded to 3 students who are active leaders, are respected and considered to be well-rounded citizens in their school community and who have demonstrated financial need.
- **(2021) Pythagoras Award:** Awarded to the student in the graduating class who demonstrated the most aptitude and dedication towards mathematics.
- **(2021) University of Toronto Scholarship:** \$7,500 awarded on the basis of exceptional academic achievement.
- **(2021) The Faculty of Applied Science Engineering Admission Scholarship:** \$2,500 awarded on the basis of exceptional academic achievement and extra-curricular involvement.
- **(2020) Best Small Delegation:** Awarded to the best small delegation from the Americas at the global GEO Model UN conference.
- **(2019) 1st Place - University of Guelph Science Olympics:** Won 1st place among 1000+ students in the chemistry events.