Jae Gwan Park

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Technical Skills

Languages: Python, SQL, MATLAB, Java, C, C++, HTML, CSS, JavaScript, Flask, Turing, Assembly
Technologies: Git, Arduino, TinkerCAD, LaTeX, AWS, Jekyll, VEXcode, SketchUp, Stradview, ImageJ
Libraries: PyTorch, NumPy, OpenCV, Pandas, Matplotlib

Experience

Quantitative Morphogenesis Laboratory Dec 2021 – Present
Machine Learning Intern *Toronto, ON*

- Incoming machine learning research intern investigating uses of U-Net Deep Learning in cell microscopy segmentation.

Sunnybrook Research Institute Jul 2021 – Present
Research Assistant – Focused Ultrasound Group *Toronto, ON*

- Created **MATLAB** processing scripts to extract and analyze over 500 MRI images from open-source databases.
- **Semi-automated** and optimized existing CT segmentation pipelines, **decreasing processing times by over 100%**.
- Designed and implemented a **MATLAB DICOM processing pipeline** that could segment bone tissue from Micro CT scans of rat skulls in under 1 minute.
- Developed algorithms to extract triangulated surface skull meshes, that were used in ray acoustic simulation models.

Incendium Academy Oct 2020 – June 2021
Software Engineer – Developer Team *Toronto, ON*

- Co-founded a **$1000 RisingYouth grant-funded** non-profit education platform that aims to level the playing field of high school STEM contests.
- Led a team of 15 people to create a **front-end using Jekyll, Firebase, HTML, and SASS** in 2 months that reached over 500 unique visitors within the first month of release.

Projects

Bridge Simulator | MATLAB Nov 2021

- MATLAB software that can determine failure loads and plot internal force/moment plots for any given beam bridge.

Defeat the Heat | Java May 2019

- Java-based video game to teach users about fire safety. Uses OOP principles and a Java AWT/Swing GUI to structure game mechanics and player navigation.

Home Security System | Arduino, C/C++, TinkerCAD May 2021

- Processed using parallelization over 5 live signal feeds from Arduino components (IR, LDR, numpad, button sensors, etc.) using C/C++ to design and build a smart home security system.

Portfolio Website | HTML, SCSS, Jekyll Sep 2021

- Personal site built with the Jekyll framework optimized for desktop and mobile use. Incorporates responsive, modern project pane design with hover animations.

Education

University of Toronto Sep 2021 – Apr 2026
B.A.Sc. Engineering Science. Projected GPA: 3.8/4.0 *Toronto, ON*

- U of T Scholar ($7500), Lo Family Scholarship ($5000), Elliott M Wilson Scholarship ($2175), Jim Balsillie Scholarship ($325)

William Lyon Mackenzie Collegiate Institute Sep 2017 – Jun 2021
OSSD. Math and Computer Science (MaCS) Program. Average: 99% *Toronto, ON*

- Pythagoras Award: awarded to the student who demonstrated the most aptitude and dedication towards mathematics.

Harvard University, EdX Dec 2021 – Jan 2022

- **CS50** Introduction to Computer Science: Studied Data Structures and Algorithms, C, SQL, Python, Flask.

Massachusetts Institute of Technology (MIT), Open CourseWare Aug 2020 – Present

- Studied **18.02** Multivariable Calculus, **18.06** Linear Algebra, **9.40** Introduction to Neural Computation