Saqeeb **Hassan**

MSc · Software Engineer · Image Processing Scientist · Researcher

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Summary

Analytically-minded image processing scientist with 2+ years of experience with programming and medical imaging. Open to opportunities in the software engineering/tech industry. Well-spoken with experience regularly presenting work to a multidisciplinary audience. Most proficient in Python.

Skills

Programming Proficient: **Python (2 years)**. Comfortable: Pytorch, Matlab, Git, Linux. Some Experience: Java, Javascript, C, Docker, LaTeX

Research Project-based work, Scientific and Technical Writing, Data Analysis

Science Image Processing, Signal Processing, Machine Learning, Medical Imaging, Physics, MRI Physics

Work Experience

Sunnybrook Research Institute

Toronto, Canada

Research Engineer

September 2021 - Present

- Create MRI image processing pipelines and integrate them into internal software tools (e.g. Python modules) for convenient use by others
- Develop a deep learning model to automatically segment lungs in chest images, enabling a future collaboration with a startup interested in using patient specific lung geometry - also took several online machine/deep learning courses
- Program multiple MRI sequences using the Javascript-based MRI platform 'RTHawk' by HeartVista to enable faster data acquisition in time-sensitive scans
- Identify image quality evaluation metrics for comparing novel imaging pipelines against the clinical standard to validate results. These include measurements for image sharpness and signal-to-noise comparisons
- Write documentation to improve user knowledge and productivity with new and existing software
- Engage with patients while operating the MRI scanner to ensure a good experience for them

Education

Master of Science in Medical Biophysics

Toronto, Canada

University of Toronto

Completed September 2021

- Reduced scan times for MRI scar mapping in ventricular tachycardia patients by over 70% by implementing new or underutilized image processing pipelines and reconstruction techniques. Mainly used Python with some development in Matlab and Javascript.

Bachelor of Science in Physics, with Distinction

Kingston, Canada

Queen's University

Completed June 2017

- Undergraduate thesis: Investigated rotational dynamics of disk galaxies by simulating them as a series of concentric massive rings which interact with one another gravitationally. This was to model the disk warping of galaxies such as UGC 3697
- GPA: 3.93

Awards

2018-2019 **Queen Elizabeth II Graduate Scholarship in Science and Technology**, U of T and Province of Ontatio

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Extracurricular Activity

Social Committee President

Toronto, Canada

Graduate Student Association

January 2018 - January 2020

- Improved the graduate student experience by organizing social and networking events for students in the Department of Medical Biophysics
- Determined the best use of the events budget and developed strong interpersonal skills

Let's Talk Physics Symposium Co-organizer

Kingston, Canada

Let's Talk Science

December 2016

- Led a team of physics students in organizing a successful science outreach effort hosting over 200 local high school students
- Was featured in a local newspaper article here