

Irenaeus Wong

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EDUCATION

McMaster University, Bachelor of Engineering, Materials Engineering

GPA: 3.8 / 4.0

Programming: Java, Python: Tensorflow, Seaborn, Pandas, Scipy, OpenCV, Scikit-Learn

Software: Autodesk Inventor, ANSYS, GRANTA EduPack, Solidworks, HyperWorks, Simscale

Sep. 2018 - Apr. 2023

Hamilton, Canada

WORK EXPERIENCE

Process Engineering Intern

Ferrous Pyrometallurgy, Hatch LTD

- Created and optimized process models for techno-economic analysis to assess feasibility of global steel plants
- Communicated feasibility study results and fine-tuned complex models with clients over 12 time zones
- Authored hydrogen ironmaking decarbonization paper to be submitted to European ironmaking conference
- Addressed systematic barriers in engineering as a member of the Diversity & Inclusion Committee

Sep. 2020 - Aug. 2021

Mississauga, Canada

Junior Applications Developer

Fibics Incorporated

- Utilized 2D signal processing techniques, Fourier transform, and dimensionality reduction techniques to analyze images
- Developed and implemented 5000-line 3D array tomography stack alignment application with Python's OpenCV library
- Prepared and operated SEM to image samples for testing and improving self-written image processing algorithms
- Designed Excel-based cost model to maximize profits by assessing and ranking risks to printed circuit board suppliers

May 2019 - Aug. 2020

Ottawa, Canada

Research Assistant

McMaster University

- Designed optimized cellular materials utilizing machine learning and genetic algorithms for topology optimization
- Performed finite element analysis for rapid prototyping with additive manufacturing to assess and improve iterative designs

Sep. 2019 - Apr. 2020

Hamilton, Canada

LEADERSHIP & PROJECTS

Co-President & Vice President Co-op

Materials Science & Engineering Society, McMaster University

- Held first co-op showcase of 15 speakers from industry and academia with over 60 attendees
- Led and mentored team of 24 executive members
- Introduced Equity, Diversity, & Inclusion policy and practices to students and department members
- Organized first Canada-wide Materials Science & Engineering committee for collaborations (*University of British Columbia, University of Toronto, McGill University, University of Alberta, University of Waterloo*)

Sep. 2019 - Present

Hamilton, Canada

First Canadian Materials Hackathon Founder

MATLS Hacks, McMaster University

- Secured over \$10,000 in sponsorship and funding in first 4 months of planning for inaugural event
- Successfully pitched to industry, technical societies, and McMaster faculty to secure sponsorship, partnership, and support
- Created comprehensive materials selection challenge utilizing brand new \$30,000 composites 3D printer

July 2021 - Present

Hamilton, Canada

Co-Founder & Co-President

Computational Materials Society, McMaster University

- Led industry sponsored project correlating mechanical properties to steel pearlite orientation with Tensorflow CNN algorithm
- Organized workshops and tutorial series for students on computer vision, machine learning, and computational materials topics
- Hosted, mentored, and judged McMaster hackathon challenges related to computational materials engineering

Sep. 2019 - Present

Hamilton, Canada

Voronoi Core – Hackathon Category Winner (1st Place Prize – \$1,000 CAD)

DeltaHacks VI, McMaster University

- Led team of materials engineering students to build a web application for metallurgical image analysis in 24 hours
- Utilized Python OpenCV image preprocessing, Tensorflow CNN for full segmentation and identification of metallurgical phases

Jan. 2020

Hamilton, Canada

AWARDS

Cansbridge Fellow 2022, *Cansbridge Fellowship* (\$10,000 CAD, ~3% acceptance rate)

- Cohort of 15 high impact students complete a weeklong Silicon Valley bootcamp and internship in Asia

2022

AIST Premier Scholarship, *Association for Iron & Steel Technology* (\$12,000 USD)

- Top scoring candidate of 30 scholarship recipients

2022

AIST Ronald E. Lincoln Memorial Scholarship, *Association for Iron & Steel Technology* (\$6,000 USD)

2021

Post Secondary Education Bursary Award, *Ontario Compensation Employees Union* (\$500 CAD)

2021

AIST Steel Scholar, *Association for Iron & Steel Technology* (\$6,000 USD)

2020

AIST Northern Chapter Scholar, *Association for Iron & Steel Technology* (\$1,000 CAD)

2020

Associate Diploma (ARCT) of Piano Performance, *The Royal Conservatory of Music*

2016

SKILLS / EXTRACURRICULARS / INTERESTS

General – Multidisciplinary research: computational materials, sustainability and decarbonization, electron and ion beam microscopy

Extracurriculars – McMaster University Artificial Intelligence Society, Blacksmithing, Jazz Ensemble (Principal Pianist)

Interests – Jazz and classical piano, competitive volleyball, olympic-style weightlifting and jump training