

# Stanley Z. Hua

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## EDUCATION

### University of Toronto

Toronto, CA

H. BSc. in Computer Science (GPA: 3.85/4)

Sept. 2019 – May 2024 (Expected)

## TECHNICAL SKILLS

**Languages:** Python, SQL, C/C++, Java, Shell Script, Git, HTML/CSS, R, Assembly

**Software Tools:** GitHub, Azure

**Data Skills:** Data Cleaning, Deep Learning, Data Visualization, Clustering, Dimensionality Reduction

**Python Libraries:** Pandas, NumPy, Scikit-Learn, PyTorch, Tensorflow, Keras, Matplotlib, Plotly, OpenCV

## EXPERIENCE

### Software Engineer Intern

May 2022 – Present

Intel Corporation

Toronto, CA

- Part of the Performance Analysis & Infrastructure Team.

### AI Research Student

Sept. 2021 – Present

The Hospital for Sick Children (Goldenberg Lab)

Toronto, CA

- Adapted deep learning methods from video modeling (Conv.Pooling, CNN-LSTM, TSM) to improve prediction of a kidney disease from medical images (ultrasound) taken over multiple hospital visits using PyTorch.
- Assessed model performance based on key metrics (AUROC, AUPRC) with bootstrapped confidence intervals.
- Productionized code for data validation and model deployment, forecasting the number of patients in the ER hourly.

### AI Research Student

May 2021 – Sept. 2021

University of Toronto (Moses Lab)

Toronto, CA

- Created a large-scale dataset **CytoImageNet** (890K images, 894 classes) from 20 TB of open-source microscopy images (and tabular metadata) using Python (pandas, numpy, opencv).
- Pretrained deep convolutional models (EfficientNetB0) on CytoImageNet using Tensorflow, providing biologists a new means to extract information from microscopy images.
- Paper published and poster presented at NeurIPS 2021 LMRL workshop.
- The CytoImageNet dataset has attracted attention on Kaggle (2700 views, 190 downloads).

### ML Research Student

Jul. 2020 – Jul. 2021

University of Toronto (Tyrrell Lab)

Toronto, CA

- Investigated the effect of dimensionality (PCA) on clustering (K-Means) of medical images under small sample sizes using Python (scikit-learn, tensorflow keras).

## PROJECTS

### Matrix: A Math Worksheet Generator Application | Java, Git

Sept. 2021 – Dec. 2021

- Using Git version control, worked in a team of six to create an application that generates math worksheets.
- Designed code for local storage/retrieval of user info & history using Dependency Injection and Facade patterns.
- Refactored equation generation code to remove redundancy (following Strategy design pattern).
- Implemented automated testing using Apache Ant.

## CONFERENCE PRESENTATIONS

### CytoImageNet: A large-scale pretraining dataset for bioimage transfer learning

NeurIPS 2021 (Learning Meaningful Representations of Life Workshop)

## HONORS & AWARDS

2021 University of Toronto CSB Undergraduate Research Award, \$4000

2020-22 Dean's List Award