

# Stanley Z. Hua

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## EDUCATION

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### University of Toronto

*H. BSc. in Computer Science & Bioinformatics (GPA: 3.84/4)*

Toronto, CA

*Sept. 2019 – Present*

## EXPERIENCE

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### Research Assistant

Sept. 2021 – Present

*The Hospital for Sick Children (Goldenberg Lab)*

*Toronto, CA*

- Adapting state-of-the-art spatiotemporal deep learning methods to predict a pediatric disease given a sequence of kidney ultrasound images taken over multiple hospital visits.

### Research Assistant

May 2021 – Sept. 2021

*University of Toronto (Moses Lab)*

*Toronto, CA*

- Curated a large-scale dataset **CytoImageNet** (890K images, 894 classes) of open-source microscopy images.
- Preprocessed 20 TB of microscopy image data from 40 datasets using pandas, NumPy and Open-CV.
- Demonstrated CytoImageNet-pretrained models perform competitively to ImageNet on downstream tasks.

### Research Assistant

Jul. 2020 – Jul. 2021

*University of Toronto (Tyrrell Lab)*

*Toronto, CA*

- Evaluated the robustness of clustering (K-Means) under varying number of principal components (PCA).
- Improved a method for measuring data heterogeneity's effect on convolutional model training.
- Preprocessed pediatric brain 3D MRI images using FSL and Python NiBabel.

## PROJECTS

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### RANZCR CLiP Competition | *Tensorflow, Keras, Pandas, NumPy*

Jan. 2021 – Mar. 2021

- Tuned convolutional models (EfficientNetB4, ResNet50) to predict the improper placement and/or imaging of catheters in chest x-rays.

## TECHNICAL SKILLS

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

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

**Python Libraries:** pandas, numpy, matplotlib, tensorflow, keras, pytorch, scikit-learn, PIL, open-cv

**R Libraries:** tidyverse, dplyr, ggplot2, shiny, blogdown, rvest

## HONORS & AWARDS

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

## CONFERENCE PRESENTATIONS

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

NeurIPS 2021 (Learning Meaningful Representations of Life Workshop)