

# Hongyi Sun

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## EDUCATION

### UNIVERSITY OF TORONTO

#### BSc IN COMPUTER SCIENCE

Sept 2017 - Apr 2022 | Toronto, ON

Computer Science Specialist

cGPA: 3.99 / 4.00

## COURSEWORK

### Graduate

Physics-based Animation(A+)

Neural Nets and Deep Learning

(Winter 2022)

### Undergraduate

Software Design(A+)

Modern Symbolic Logic(A+)

Intro to Databases(A)

System Programming(A+)

Data Structures & Analysis(A+)

Intro Statistic(A)

Multivariable Calculus(A+)

Operating Systems(A+)

Intro to Visual Computing(A+)

Intro to AI(A+)

Intro to Machine Learning(A+)

Algo Design & Analysis(A+)

## SKILLS

### PROGRAMMING

Languages:

Java • C • C++ • Python • Javascript

Kotlin • Bash • HTML •  $\LaTeX$

• CSS • Swift • SQL • Verilog

Tools/Other:

Git • React • NodeJS • Express

Numpy • Selenium • Firebase •

MongoDB • PostgreSQL

OpenCV • TensorFlow • PyTorch

## PUBLICATION

### CoordX: Accelerating Implicit Neural Representation with a Split MLP Architecture

Ruofan Liang, **Hongyi Sun**, Nandita Vijaykumar

Area: Implicit Neural Representations, Computer Vision.

Accepted at ICLR 2022.

## RESEARCH EXPERIENCE

### ROBOT VISION AND LEARNING LAB | RESEARCH ASSISTANT

Jun 2020 - May 2021 | Toronto, ON

- Worked with professor **Florian Shkurti** on imitating a game engine using a differentiable neural network renderer to help train an autonomous driving policy.
- Implemented the differentiable neural network renderer, which acts as an implicit neural representation of the scene.
- Modified the network to improve its accuracy on large scenes with dynamic objects.

### COMPUTER SYSTEMS AND NETWORKS GROUP | RESEARCH ASSISTANT

May 2021 - Present | Toronto, ON

- Working with professor **Nandita Vijaykumar** on accelerating coordinate-based multilayer perceptron (MLP) networks. This project started as a part of the undergraduate summer research program, and is funded by the Natural Sciences and Engineering Research Council (NSERC) and the computer science department at the University of Toronto.
- Designed a new architecture for coordinate-based neural representations that significantly improve the training and inference speed without incurring a reduction in reconstruction accuracy.
- The result of this research has been submitted and accepted by ICLR 2022.

## INDUSTRY EXPERIENCE

### QUALCOMM | SOFTWARE ENGINEER INTERN

May 2020 - April 2021 | Markham, ON

- Worked in the automotive video team, primarily worked on QNX Hypervisor (with Android GVM) on the latest Qualcomm Automotive Chipsets.
- Designed and developed features for video drivers that increased their overall performance and added support for new video codec formats to video drivers.
- Debugged internal issues and issues reported by the external customer on a regular basis, developed a complete unit testing pipeline for video components.
- Performed validations on the video encoding and decoding process and assessed their performance across various platforms.
- Coordinated with different teams and customers on task progresses, tracked and updated the progress on JIRA pages, and updated video validation steps and performance KPIs on team Confluence pages.

## AWARDS

2018,2019,2021	Dean List Scholar
2019	The Professor William Kingston and Dr John Kingston Scholarship (\$1,000)
2021	F Ray Irwin Scholarship (\$1,000)
2021	NSERC Undergraduate Student Research Award (\$7,500)