

Zhuoyue Lyu

Software Engineer • HCI/AI/VR Researcher • Singer

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EDUCATION

UNIVERSITY OF TORONTO

COMPUTER SCIENCE (AI) • MUSIC

Dean's List Scholar • New College Scholar
Sep. 2017 - Aug. 2021

Major GPA: 3.88 / 4.00¹

Minor GPA: 4.00 / 4.00²

COURSEWORK

A+ Machine Learning

A+ HCI Research Project

A+ Natural Language Computing

A+ Neural Net & Deep Learning

A+ Intro to AI (Bayesian Net, HMM)

A+ Math Expression and Reasoning

A+ Intro to Theory of Computation

A+ Computer Organization (FPGA)

A+ Introduction to Philosophy

A Vocal & Instrumental Ensembles

A Beethoven

SKILLS

CS: Python, C, C#, C++,
Java, JavaScript, R, Verilog,
Unity, LaTeX, GitHub, SQL,
TensorFlow, Android Studio,
Jupyter Notebook, Colab

MUSIC: ChuckK, Chunity,
Logic Pro X, Adobe Audition,
Pro Tools, Scarlett, Universal Audio,
Voice, Piano, Saxophone, Guitar

ACTIVITIES

NEW COLLEGE SCHOLARSHIP | \$1,000
2020 | [Toronto, Canada](#)

LINYUN PODCAST | RADIO HOST
2020 | [Toronto, Canada](#)

COMPUTER ORGANIZATION | INSTRUCTOR
2019 | [Toronto, Canada](#)

AIESEC POLSKA | GLOBAL VOLUNTEER
2019 | [Katowice, Poland](#)

UOFT CHINESE SPEECH CONTEST | 1ST PLACE
2017 | [Toronto, Canada](#)

MATHEMATICAL OLYMPIAD | 2ND PRIZE
2016 | [Zhejiang, China](#)

6TH WORLD CHOIR GAMES | GOLD DIPLOMA
2010 | [Shaoxing, China](#)

EXPERIENCE

IBM WATSON STUDIO | SOFTWARE ENGINEER (UI)

May. 2020 - Present | [Markham, Canada](#)

- Working on the graphical tool **AutoAI** in IBM Watson® Studio. AutoAI automates the end-to-end flow of data preparation, model development, feature engineering, and hyper-parameter optimization, which won the **2020 Red Dot Design Award**.
- Collaborating with IBM Research & Design team, using the React framework and D3.js to develop various UI components for AutoAI. Manager: **Dr. Monica Romila**.

DYNAMIC GRAPHICS PROJECT (DGP) LAB | RESEARCH ASSISTANT

Jul. 2019 - Aug. 2020 | [Toronto, Canada](#)

- Supervised by **Prof. Tovi Grossman** and Ph.D. student **Fengyuan Zhu** on Virtual Reality (VR) projects *Terminator Hands* and *Voiding the Touch* (postponed due to the pandemic).
- Co-authoring both papers, developed VR systems in Unity, conducted user studies, analyzed collected data, and summarized the findings; Designed and built robust hardware using 3D printer; Assisted various research projects³.

CHINESE ACADEMY OF SCIENCES | RESEARCH ASSISTANT

Aug. 2018 - Sep. 2018 | [Beijing, China](#)

- Worked in an autonomous vehicle simulation team that led by **Dr. Yunzhi Xue**. Took the initiative to acquire Machine Learning (ML) knowledge through Stanford CS229; Explored the relationship between image deterioration rate and model accuracy.
- Generated 11,600 traffic sign images from CARLA simulator, retrained Google Inception V3 neural net using TensorFlow, the model achieved 90+% accuracy.

MEN'S CHORUS | BASS SINGER

Sept. 2019 - Mar. 2020 | [Toronto, Canada](#)

- Rehearsed and performed in concerts conducted by **Prof. Mark Ramsay**. Performances include: *Seasons of Song*, *To Hold Off Winter's Chill* and *All Creatures Great and Small*.
- Weekly rehearsals emphasized sight-reading, ear-training, and musical knowledge; developed musicianship skills through the performance of large ensemble works.

RESEARCH

SENSING AI | IN PROGRESS

Zhuoyue Lyu | Aiming at International Computer Music Conference (ICMC) 2021

Sonified neural networks by mapping loss and accuracy to oscillators' frequencies and visualized it in Virtual Reality, to provide people with auditory and visual intuition about AI.

TERMINATOR HANDS | IN PROGRESS

Fengyuan Zhu, Zhuoyue Lyu, Tovi Grossman

Aiming at ACM Symposium on User Interface Software and Technology (UIST) 2021

Designed different virtual hands: scalable hands, duplicable hands, and movable hands to explore the impact of hands morphing on human-object interactions in VR.

VOIDING THE TOUCH | POSTPONED

Fengyuan Zhu, Zhuoyue Lyu, Tovi Grossman

Aiming at Conference on Human Factors in Computing Systems (CHI) 2022

Explored the performance of touch events on a physical device under different input modalities in virtual environments by analyzing time and accuracy data from user studies.

¹ All Computer Science (CSC) courses

² All Music (MUS, TMU) courses

³

Model, user study participant - **BlyncSync**: Enabling Multimodal Smartwatch Gestures with Synchronous Touch and Blink CHI 2020

Voice-over, user study participant - **BISHARE**: Exploring Bidirectional Interactions Between Smartphones and Head-Mounted Augmented Reality CHI 2020

User study participant - **Disambiguation Techniques for Freehand Object Manipulations in Virtual Reality** IEEE VR 2020

User study participant - **StarHopper**: A Touch Interface for Remote Object-Centric Drone Navigation GI 2020

User study participant - **ChartSeer**: Interactive Steering Exploratory Visual Analysis with Machine Intelligence IEEE TVCG 2020