Zhuoyue Lyu

Software Engineer • HCI/AI/VR Researcher • Singer

+1 (647) 685-4909 | zhuoyue.lyu@mail.utoronto.ca | zhuoyuelyu.github.io

EDUCATION

UNIVERSITY OF TORONTO

Computer Science (AI) • Music

Dean's List Scholar · New College Scholar

Sep. 2017 - Jul. 2021

Major GPA: **3.90 / 4.00** [1]

Minor GPA: **4.00 / 4.00** [2]

COURSEWORK

A+ Machine Learning
A+ Operating Systems
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, React Linux/Unix, Quartus, RStudio

Music: ChucK, Chunity, Logic Pro X, Adobe Audition, Voice, Piano, Saxophone

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

[1] All Computer Science (CSC) courses
[2] All Music (MUS, TMU) courses

EXPERIENCE

IBM WATSON | Software Engineer (UI)

May. 2020 - Present | Toronto, 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 | Researcher (HCI/VR)

Jul. 2019 - Present | Toronto, Canada

- Supervised by **Prof. Tovi Grossman** and Ph.D. student Fengyuan Zhu on Virtual Reality (VR) projects *Terminator Hands* and *Voiding the Touch.* Co-authoring both papers.
- Developed VR systems in Unity, conducted user studies, analyzed collected data, designed & built robust hardware using 3D printer; Assisted various research projects[3].

INTELLIGENT ADAPTIVE INTERVENTIONS LAB | Research Assistant (ML)

Apr. 2019 - Jun. 2019 | Toronto, Canada

- Assisted **Prof. Joseph Jay Williams** in transforming datasets between different formats that are ready to be used on multiple machine learning projects.
- Coordinated 100+ meetings with lab members & researchers from Goodlife Fitness Inc.

CHINESE ACADEMY OF SCIENCES | Software Engineer (ML)

Aug. 2018 - Sep. 2018 | Beijing, China

- Worked in an autonomous vehicle simulation team that led by **Dr. Yunzhi Xue**. 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, FACULTY OF MUSIC | 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;

RESEARCH

SENSING AI (Submitted) Zhuoyue Lyu, Bryan Wang, Jiannan Li
Late-Breaking Work, Conference on Human Factors in Computing Systems (CHI) 2021
Sonified neural networks by mapping loss and accuracy to oscillators' frequencies and visualized it in VR. Envisioned new Human-AI interaction through auditory and visual feedback.

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.

[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