Xing Hao (Leo) Li

Toronto, ON, Canada
xinghao.leo.li@gmail.com linkedin.com/in/haohao1331 github.com/haohao1331

Education

University of Toronto **Sep. 2018 – Jun 2023**
Bachelor of Applied Science (BASc) in Engineering Science, Dean's Honour List 2018 – 2022 Toronto, ON
Major in Robotics Engineering (GPA 3.97/4.00), Minor in Bioengineering

Research Experience

Neuron to Brain Lab, University of Toronto Toronto, Canada
Undergraduate Researcher supervised by Dr. Taufik Valiante Aug 2022 – Present

- Investigated how biological neurons' intrinsic plasticity is affected by network inputs, and how neuron heterogeneity relates to epilepsy.
- Modeled neuron populations using **spiking neural networks**, conducted simulations to determine how various input conditions change network dynamics.

Be.Neuro Lab, Imperial College London London, UK
Research Intern supervised by Dr. Juan Alvaro Gallego Jan 2022 – Jun 2022

- Built a closed-loop **brain-computer interface** for a neuroscience experiment with mice.
- Implemented an interface to fetch data from implanted electrodes, designed and built a multiprocessing framework to process neural data, programmed a microcontroller for experiment control and feedback. Achieved a **closed-loop latency of 40ms**.
- Optimized and generalized a threshold-crossing algorithm for calculating neuron firing rate, reduced computation time by **70%**.
- Analyzed multi-dimensional neural data with statistical methods such as PCA and CCA. Trained and compared **linear regression and LSTM models** as neural decoders to predict hand velocity.

Hoffman Lab, University of Toronto Toronto, Canada
Research Intern supervised by Dr. Michael Hoffman May 2020 – Aug 2020

- Built a computational pipeline to process epigenetic data, conducted timing tests and improved existing workflows.
- Developed a new statistical model for peak-calling, which combined a Poison model together with a new biochemical calibration process. Conducted an ablation study on the new model to investigate effects of individual parameters.

Industry Experience

Amazon Toronto, Canada
Software Development Engineer Intern May 2021 – August 2021

- Implemented a new item details page in Amazon Kids' online parent dashboard using **React-Redux-Typescript** for the front-end and **Java** for the back-end.
- Participated in sprint planning, code reviews, gathered feedback from UI designers and customer focus groups, and iteratively refined the web page.
- Impacted 80k+ customers, provided parents with a clear description of product details, helped them make purchase decisions for their children.

City From Naught Toronto, Canada
Game Developer Jan 2020 – Oct 2021

- Designed and built a 3D cyberpunk detective game using **Unity** with **C#**. Responsible for gameplay, puzzles, in-game UI, and integration of 3D models and animation.
- Managed and mentored a small team of software engineers, leading weekly sprint planning and distribution of tasks in a fast-paced start-up environment.
- Full-stack developer for the company's main website and online game demo using **React-Redux-Typescript**.
- Released on Steam and received a **very positive rating** (86% of players liked the game).

Awards and Honors

- 2021 University Of Toronto In-Course Scholarships - $1,500
- 2020 Natural Sciences and Engineering Research Council of Canada (NSERC) Undergraduate Student Research Award (USRA) – $4,500
- 2019 Class Of 3t7 Scholarship - $1,278
- 2019 Satinder Kaur Dhillon Memorial Scholarship - $1,474
- 2018 Faculty Of Applied Science And Engineering Admission Scholarship - $5,000

Skills

Programming: Python, C#, C, Matlab, Javascript/Typescript, Bash, R, Java

Tools and Packages: Git, Numpy, SciKit Learn, Pytorch, Unity, React, Yarn/NPM, Fusion 360

Languages: English (native), Mandarine (native)

Leadership / Extracurricular

ECCHO, University of Toronto **Sept 2019 – Present**

Student Club Vice President

- Organized volunteering teaching programs, where undergraduate students travel to underdeveloped regions in China to teach local elementary students English.
- Communicated, negotiated, and collaborated with local school boards and teachers for the guidelines and organization of the program.
- Recruited people into the student club, designed interview procedures, and also selected candidates to participate in the volunteer teaching program.

Rural Teaching Summer Program **May 2019 – Jun 2019**

Volunteer Elementary School Teacher

- Taught elementary school students English, art, music, and sports.
- Collaborated and helped local teachers with designing curriculum, administrating and marking tests.
- Organized a stage show for a children's festival. Designed the plot, selected the background music, and conducted rehearsals.

Music Generation Software **Dec 2018**

- Created an application that can auto-generate Baroque-style dance music.
- Designed a music generation algorithm by combining **Python** programming with music theory.
- Lead a group and designed the overall program structure, scheduled deadlines, and planned deliverables.

Online Tutor **Sep 2017 — Aug 2020**

- Tutored high school math, physics, chemistry, Advanced Placement calculus, and first-year calculus.
- Planned lessons for students, managed time effectively, prepared test material, and provided feedback. Some students achieved full scores on the SAT math test.