JIAHUI PENG

Email: jiahui.peng@mail.mcgill.ca

EDUCATION

***McGill University*** *Sept. 2017 - Dec 2021*

* Bachelor of Computer Science & Minor in Economics
* GPA: 3.31/4.0 (1st & 2nd year); 3.86/4.0 (3rd & 4th year)
* TA: COMP 421 Database Systems; COMP 273 Introduction to Computer Systems
* Applied Machine Learning (A); Artificial Intelligence (A); Introduction to Natural Language Processing (A); Introduction to Data Science(A); Algorithm Design (A); Database Systems (A); Computer Networks (A); Distributed System (A); Numerical Computing (A); Programming Lang & Paradigms (A)

ACADEMIC EXPERIENCE

***Individual Researcher*** *Jan. 2024 - Present   
Part-time, collaborating with a graduate student* [Tianyu Shi](https://shitianyu-hue.github.io/) *from University of Toronto and* [Tengjiao Sun](https://openreview.net/profile?id=~Tengjiao_Sun1) University of Southampton

* ***Text-to-Motion Generation (Machine Learning)***
* Proposed the Multimodal Conditional Representation and Editing (MCRE) module, a lightweight adapter for text-to-motion generation and editing.
* Designed and executed the qualitative and quantitative experiments to demonstrate the effectiveness and versatility of the MCRE module in text motion generation and editing.
* Co-authored a workshop paper and submitted to ECCV.

***McGill University*** *May. 2023 - Mar. 2024   
Part-time Research Assistant, supervised by* [Prof. Bettina Kemme](https://www.cs.mcgill.ca/~kemme/) *& Prof. Mona Elsaadawy*

* ***Distributed Systems & Networks***
* Explored the P4 programming language’s capabilities for monitoring large and complex distributed systems in SDN, and compared its performance and flexibility with the use of Open vSwitch.
* Designed and implemented a program that runs on software switches using P4, enabling dynamic performance monitoring of a set of target network flows between each containerized component.

***McGill University*** *Sept. 2021 - Dec. 2021   
Research Assistant, supervised by* [Prof. Jin Guo](https://www.cs.mcgill.ca/~jguo/) *&* [Prof. Martin Robillard](https://www.cs.mcgill.ca/~martin/)

* ***Human-Computer Interaction***
* Proposed to find a solution to help Chrome users to save time by avoiding clicking on the less desired search results.
* Designed a heuristic algorithm to summarize web pages and categorize search results by content.
* Developed a Chrome extension in JavaScript that displays summaries and classifications (e.g., Tutorial Website) in a pop-up when users hover over a search result.

***McGill University*** *May 2020 - Apr. 2021   
Research Assistant,* supervised by [Prof. Muthucumaru Maheswaran](https://www.cs.mcgill.ca/~maheswar/)

* ***Edge Computing***
* Proposed to discover the bottlenecks and improve the data transmission and computation efficiency of an IoT system.
* Designed and tested a Network-Aware Scheduling Algorithm to minimize task execution times on edge servers by dynamically adjusting schedules based on network quality
* Implemented a scheduling algorithm in [JAMScript’s](https://citelab.github.io/JAMScript/) edge servers using Node.js and C++ to dynamically allocate computational resources to real-time, interactive, and batch tasks sent from devices (driving vehicles) based on different priorities, preventing any task type from being starved.
* Identified and resolved JAMScript’s server-side performance bottlenecks, enhancing task communication efficiency by 50x using Worker threads in Node.js.
* Co-authored the paper ’Network-Aware Scheduling for Edge Computing Tasks in 5G’ (the patent has been approved; the paper submission is pending).

INDUSTRIAL EXPERIENCE

***Citi Group*** *Mar. 2022 - Present*

* ***Securities & Cash Middle Office Full Stack Developer - Officer2***
* Researching and performing Chaotic Engineering to a cloud-based system to test its resilience against.  
  designed failures in network, OS, and database. (Chaotic Engineering, OpenShift, and Docker)
* Developing a web application that facilitates securities trading, capable of processing trades submitted by traders and displaying visual analyses of past transactions. (Java, TypeScript, Spring-Boot, Oracle   
  SQL, REST Service, Angular, and Microservices)
* ***Equities Front Office Back-End Developer - Officer1***
* Developed and maintained a low-latency distributed quantitative trading system for low-touch trading in Cash Equities and Options. (Java and Low Latency Programming)

***Citi Group*** *May 2021 - Aug. 2021*

* ***Equities Middle Office Back Developer - Internship***
* Developed a program to visualize daily trading data, including trade performance, trade volume, and   
  internal FIX message processing times, using data from the front office.(Python)
* Designed and developed a complex log parser to automate the analysis of FIX messages which eliminates human errors and saves the time spent on manual analysis. (Python)

***Hush Tech.*** *Jul. 2019 - Sept. 2019*

* ***Full-Stack developer - Internship***
* Worked as a Full-Stack developer and added new features in both front-end and back-end in a logging   
  system application to improve the user experience. (Java, JavaScript, MySQL, REST Service, and Spring-Boot)

SKILLS  
**Programming Languages** Python, C/C++, MATLAB, Java, JavaScript/TypeScript, CSS, HTML

**Python Packages** Pandas, Matplotlib, Numpy, PyTorch, Tensorflow

**Software & Tools** LaTeX, Excel