# Xitong (Jacqueline) Zhang

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## SKILLS

*Programming Languages:* Python, SQL, JavaScript, Kotlin, HTML, MATLab, C, TypeScript, YAML
*Frameworks:* PyTorch, TensorFlow, SciKit Learn, Numpy
*OS, Software & Others:* Git, Latex, Markdown, AI/ML, Data Engineering, Linux, bilingual communication (Mandarin)

## EDUCATION

**MS in Information Management** Illinois, USA
University of Illinois Urbana-Champaign *Aug. 2024 – May 2026*

**BASc. in Engineering Science (Machine Intelligence Major, Business Minor)** Toronto, Canada
University of Toronto *Sep. 2019 – Jun. 2024*
*Scholarships:* Undergraduate Student Research Award from Natural Sciences and Engineering Research Council of Canada (NSERC USRA), Albert and Rose Jong Entrance Scholarship
*Capstone:* Real-time Bronchoscopy Recommendation for EVLP

## RESEARCH EXPERIENCE

**Machine Learning Researcher • Innovative Medical Engineering Lab** – Toronto, Canada *Sep. 2023 – Apr. 2024*

- Pioneered an end-to-end ML workflow that stratifies ECGs more prone to Occlusion Myocardial Infarction (OMI) for physicians in emergency departments, improving their clinical judgments in fast-paced environments
- Pre-processed ECG signals by computing a median beat for each of the 12 leads, labeling the median beat using a pre-trained Neural Network, and extracting 75 relevant features validated by literature for OMI detection using MATLAB, improving feature engineering efficiency and classification accuracy
- Developed a Random Forest Classifier utilizing these ECG features for timely OMI risk classification, achieving a ROC of 0.85. The classifier could be integrated into the hospital's diagnostic system, enhancing early detection rates and supporting physicians in prioritizing high-risk patients

**Research Assistant • The Interflow of Quality Lab (iQua)** -– Toronto, Canada *May 2021 – Aug. 2022*

- Focused on improving convergence speed in Federated Learning (FL) environments with Professor Baochun Li
- Assisted in proposing BLADE, which reduced elapsed wall clock time for asynchronous FL by 65%, surpassing SOTA benchmarks (FedAvg, FedBuff, and a hybrid of FedBuff, FedSCR, Oort) in achieving target training accuracy
- Implemented 3 existing algorithms (Hermes, FedSCR, Oort) on an open-sourced (plato) framework, ensuring a rigorous and consistent evaluation against the baseline model
- Evaluated BLADE's performance across 4 experimental settings (CIFAR-10 with ResNet-18, CINIC-10 with VGG-16, FEMNIST with LeNet-5 and tiny_shakespeare with DistilGPT2) to thoroughly assess its ability on distinct tasks

## PROFESSIONAL EXPERIENCE

**Software Development Engineer • Hyperledger** – San Francisco, USA *Jun. 2024 – Dec. 2024*

- Developed a Proof-of-Concept API using Large Language Models to analyze Hyperledger documentation, generating synthetic questions and answers with transformer models for an FAQ ChatBot
- Implemented a user-friendly frontend interface for the FAQ Chatbot and deployed it on a cloud server, creating an innovative open-source solution

**Software Development Engineer • Amazon** – Vancouver, Canada *Jun. 2023 – Sep. 2023*

- Implemented a desktop popover and a mobile bottomsheet that directs Mexico and Brazil users to authenticate their phone numbers if they prefer to sign up for Amazon Prime with Free Trial and only pay with cash-based payment methods in a non-recurring manner
- Identified and created two entry rules in Kotlin that defines the criteria that a customer must satisfy to view the popover or bottomsheet through leveraging recommended verification check action function in MARS
- Proposed two potential low-level designs to resolve the design behavioral issue and conducted two design reviews with two other external teams to finalize next steps

**Data Scientist • WealthSimple** – Toronto, Canada *Jan. 2023 – Apr. 2023*

- Conducted two AB testings for two distinct groups of users to identify the variations in trade volume and interest in opening trade accounts when more benefits are offered to the users who were originally interested in investment
- Created more than 30 visual representations that tracks USD deposits and withdrawals data, transfer volume trends using SQL and identify subscription trends for this product
- Analyzed users' response of an increase of cash interest rate through eight different campaigns in terms of ~20 metrics such as newly joined users, newly created cash accounts and email open rates