QING (MARTIN) MA

2021 Fall New Graduates

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EDUCATION

M.S. in Computer Science

University of Ottawa

Sep 2018 – Oct 2021

GPA: 3.90/4

B.S. in Computer Science

Tianjin Polytechnic University(TJPU)

Sept 2014 – June 2018

GPA: 3.69/4

HORNORS AND AWARDS

International Admission Scholarship
$30,000 Awarded by uOttawa

Outstanding Graduates of Year 2018
Top 10% Graduates in TJPU

Head's Scholarship
Top 10% Students in TJPU

SKILLS

Python
C, C++
Java
R
C#

Linux | Git | Matlab | SQL | Unity3D | Agile | JIRA | Confluence | Tomcat | Spring MVC | JUnit | Spring Boot | RESTful API | JavaScript | React | Machine learning | Google Cloud | Artificial Intelligence | Image Processing | Pytorch | Numpy | Jupyter

Teamwork | Collaboration | Problem Solving | Critical Thinking | Adaptability | Time Management

WORK EXPERIENCE

Web developer (Co-op)

Employment and Social Development Canada

Sep 2019 – Dec 2019 | Gatineau, QC

- Developed web services with spring boot and Restful API in Java
- Built unit and integration tests with Junit and Citrus
- Used Git for source code control. Studied different merging strategies such as one flow and git-flow
- Collaborated in a team using Agile and SCRUM

Data Programmer (Co-op)

CHU Sainte-Justine Research Centre

May 2019 – Aug 2019 | Montreal, QC

- Developed an innovative technological workflow for peptides identification that shorten the data analysis time from weeks to days
- Built the workflow in R language utilizing multiple programming languages including Python, Shell Script and Java
- Developed data visualization workflow in R language for peptides data
- Studied the knowledge about Immunopeptidome therapy and peptides identification
- Contributed to three publications

OTHER EXPERIENCE

Master's thesis

University of Ottawa

May 2020 – Aug 2021 | Ottawa, ON

- Designed an algorithm for synthetic X-ray image generation from CT data using matrix projection and lookup tables in Python
- Applied the generation method in Unity3D in C# to build a VR simulation demo for training surgeons
- Developed a deep learning-based super-resolution network for X-ray images with transformer architecture in Pytorch

Teaching Assistant

University of Ottawa

Jan 2020 – Aug 2021 | Ottawa, ON

- Teaching assistant for ITI1120 Introduction to Computing I (Python) and CSI3131 Operating Systems
- Explained tutorial and lab content to students
- Graded assignments with unit tests and provided feedback to students
- Demonstrated initiative by improving lab materials and lab codes with programming languages in C and Python

LANGUAGES

English
Chinese

HOBBY

Skiing | Snowboarding | Mountain biking | Kayaking | Hiking | Swimming | Badminton

CSIA Level 1 Ski instructor

Part-time Ski instructor at Mont Cascades

PROJECTS

- Synthetic X-ray image generation for Image-guided surgery VR training simulation system
- Extended validation for a CNN based surgical skill assessment method
- Credit Card Fraud Detection Study (Machine learning approach)
- Technical Debt analysis for open-source software
- Conducted research about AI ethical issues for smart speaker devices
- Adventure 3D game parkour running and collecting gem with Unity3D
- Researched on hospital personnel position based on Wireless Sensor Network
- Face number reorganization on Raspberry Pi 3 B+ with an external USB camera

PUBLICATIONS

- Kovalchik, K. A., Ma, Q., Wessling, L., Saab, F., Despault, J., Kubiniok, P., … Purcell, A. W., et al. (2021). Mhcvizpipe: A quality control software for rapid assessment of small-to large-scale immunopeptidome data sets. *Molecular & Cellular Proteomics*, 100178.
- Ma, Q., Koh, J. C., & Lee, W. (2021). A frequency domain constraint for synthetic and real x-ray image super resolution. In *International workshop on machine learning for medical image reconstruction* (pp. 120–129). Springer.
- Saab, F., Hamelin, D. J., Ma, Q., Kovalchik, K. A., Sirois, I., Faridi, P., … Caron, E. (2021). Rhybridfinder: An r package to process immunopeptidomic data for putative hybrid peptide discovery. *STAR protocols*, *2*(4), 100875.
- Vizcaıno, J. A., Kubiniok, P., Kovalchik, K. A., Ma, Q., Duquette, J. D., Mongrain, I., … Sirois, I., et al. (2020). The human immunopeptidome project: A roadmap to predict and treat immune diseases. *Molecular & Cellular Proteomics*, *19*(1), 31–49.
- Song, G., Qu, G., Ma, Q., & Zhang, X. (2017). Improved energy efficient adaptive clustering routing algorithm for wsn. In *China conference on wireless sensor networks* (pp. 74–85). Springer.