Zhekai Jiang

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Education

McGill University Sep 2019 – May 2023 (Expected)

Bachelor of Software Engineering Montréal, Canada

- **Cumulative Grade Point Average:** 4.00 / 4.00
- **Courses:** Introduction to Software Engineering, Model-Based Programming (Top Performer), Algorithms and Data Structures, Introduction to Software Systems, Discrete Structures (100%), Probability and Statistics for Engineers, Programming Languages and Paradigms, Communication in Engineering, Engineering Economy, Physics of Music, Introduction to Psychology (Advanced Placement)

The University of Hong Kong Jul 2018 – Aug 2018

Visiting (Summer, Science) Hong Kong, China

- **Course:** Mathematical Laboratory and Modeling, **Grade:** A+, 4.30 / 4.30

Awards

Dean's Honour List for ranking in the top 10% of the Faculty of Engineering at McGill University

Engineering Class of 1983 Scholarship for my high academic standing and overall contribution to university life at McGill University

John V. Galley Scholarship for my distinguished academic standing at McGill University

Rio Tinto–Richard Evans International Exchange Award for my academic achievements, as well as leadership values of personal responsibility, integrity, accountability and mutual respect, at McGill University

Award of Excellence for achieving distinction as a visiting student at the University of Hong Kong

Skills

Languages: English (Fluent), French (Basic), Mandarin Chinese (Native)

Programming and Scripting Languages: Java, C, JavaScript, C++, Python, OCaml, Bash, Swift

Professional Software, Tools, and Frameworks:

Integrated Development Environments and Editors: Eclipse, Android Studio, Visual Studio Code, Vim, XCode

Version Control, Collaboration, and Continuous Integration: Git, GitHub, GitLab, Travis CI

Numeric Computing: MATLAB, Scilab

Frameworks: Gradle, Spring Boot, Vue.js, Node.js, Express.js, VIATRA, D3.js

Platforms: Heroku

Database Systems: MongoDB, PostgreSQL

Modelling: Umple, UML Lab, Yakindu, Eclipse Modelling Framework

Miscellaneous: JUnit, Docker, Cucumber

Operating Systems: macOS, Windows, Unix, Linux

Software Engineering Practice: Object-oriented development, Model-based engineering, Behaviour-driven development, Test-driven development, Agile project management

Experience

Research Assistant Jun 2021 – Present

McGill University Montréal, Canada

- Supervised by Prof. Dániel Varró, studying about model-based software and systems engineering, including design space exploration, partial models, and languages for model specification and graph query.
- Working on a project related to model generation based on partial models.

Tomlinson Engagement Awardee for Mentoring (TEAM Mentor) Sep 2020 – Apr 2021

McGill University Montréal, Canada

- Winter 2021: ECSE 321 Introduction to Software Engineering: Helped monitor the course discussion board and address students' questions related to the semester-long group project as well as general course materials.
- Fall 2020: MATH 133 Linear Algebra and Geometry: Held weekly office hours at the virtual $\overrightarrow{F}\,\mathrm{Re}(z)\,\mathrm{Ca}$ (First Year Residence Cafeteria tutorial program) via Microsoft Teams.

Activities

Web Developer May 2021 – Present

Universities Allied for Essential Medicines (UAEM), Chapter of McGill Montréal, Canada

- Working on a social innovation project closely related to the COVID-19 pandemic. Developing the backend of an online platform, using Node.js, Express.js, MongoDB, and Docker.

Projects

Art Gallery System (Course Project of ECSE 321 Introduction to Software Engineering) Sep 2020 – Nov 2020

Repository publicly available at https://github.com/McGill-ECSE321-Fall2020/project-group-09

- In a team of five, developed a software system, including the backend, a website, and an Android application, for an imaginary art gallery which was being impacted by the COVID-19 pandemic.
- The project is primarily in Java, as well as HTML, CSS, and JavaScript for the web frontend, assisted by Git, GitHub, Gradle, Spring Boot, Vue.js, Travis CI, Heroku, JUnit, etc.
- Served as a primary designer of the domain model. Implemented part of the backend business service layer and RESTful APIs with respective unit and integration testing. Implemented part of the web and Android frontends. Contributed to configurations, deployments, and bug fixing throughout the development. Organized the backlog and documentation on GitHub.

Kingdomino Application (Course Project of ECSE 223 Model-Based Programming) Jan 2020 – Apr 2020

- In a team of five, developed a software for the game Kingdomino using object-oriented and behaviour-driven development in Java, assisted by Git, GitHub, Umple, Yakindu, etc.
- Served as the primary designer of the domain model and state machine model. Responsible for verification features and part of the GUI for the main game play. Helped with teammates' issues and the merging of code.

Education and Growth (Project for the International Mathematical Modeling Challenge (IMMC 2018) Regional Contest of Greater China) Feb 2018

- In a team of four, built an econometric model to predict China's economic growth in the next 20 years, determined the role of education in economic growth, and proposed suggestions on government policies.
- Contributed to the overall design of the mathematical model, developed all the computer programs in MATLAB and C++, and edited part of the solution paper for the contest and subsequent publication.

The Best Hospital (Project for the International Mathematical Modeling Challenge (IMMC 2018) International Contest) Mar 2018 – Apr 2018

- Developed a mathematical model that uses various factors to measure the quality of hospitals and determine the best hospital. Wrote a memo that a person without much mathematical expertise or computing ability can refer to to choose a hospital.
- Invited for a live presentation and defence as a finalist team.
- Contributed to the overall design of the mathematical model, developed all the computer programs in MATLAB and C++, and edited part of our paper for the contest and subsequent publication.