# Mingyang Li . Jarvis Consulting

I achieved a Bachelor of Science in Mathematics and Computer Science majors offered by the University of Toronto. I did great in the courses like number theory, group theory, algorithms, data structures and analysis, which were all involved with proofs. Logical thinking and pattern searches are my strengths and passions. I enjoy proving the correctness of the algorithms and optimizing my code in running time and time complexity. I had one year of full-time working experience at GN Education as an operation specialist, which developed my problem-solving skills as I was in charge of all technical issues on the website. I also improved my communication skills since I managed the workflow across all departments within the business. I have been a Data Engineer at Jarvis Technologies Group since May, using PostgreSQL, Linux bash script, and Java. I programmed a Linux cluster monitor, Java grep, JDBC, and Java Twitter app, with lots of hands-on experience in IntelliJ, git, Docker, regex, Lambda API, Stream API, REST API and JSON. I practised Scrum, attending every daily meeting and supporting my team members on Slack.

## Skills

**Proficient:** Python, PostgresSQL, Java, Scrum, Git

**Competent:** Python Pandas, Unit Test, REST API, Docker, Linux Bash Script

**Familiar:** C, RSA, Regex, Dynamic Programming, Greedy Algorithm, Linear Optimization

## Jarvis Projects

Project source code: https://github.com/jarviscanada/jarvis_data_eng_MingyangLi

**Cluster Monitor** [GitHub]: Provisioned a psql instance using docker and created host_info and host_usage tables with DDL. Programmed bash scripts for Linux cluster monitoring agents to collect hardware information and usage data for each host in the cluster, and then persist data into a psql instance. Used crontab to collect data automatically for each minute. Designed SQL queries for business data analytics and tested with some sample data generated on purpose.

**Core Java Apps** [GitHub]:

- Grep App: Implemented a simple grep app in Java. The app searches for a text pattern recursively in a given directory, and output matched lines to a file. Used slf4j library for log, and regex library to search the pattern. overridden the methods that return a list of all files in a given directory and a list of all strings in a file using Lambda and Stream APIs. Dockerized the grep app by docker and push the image to Docker for easier distribution.
- JDBC App: Implemented CRUD process for a database in a PSQL instance by a java program. Coded JDBC to connect to the database, customer DAO to handle CRUD process, docker container to contain the PSQL instance. Used bash scripts to set up the database by docker, and SQL files to set up the tables in the database. Ran the CURD process using the app and checked the result by queries.
- Twitter App: Developed a java application that can create, read, and delete tweets from CLI. Utilized Twitter REST API in the DAO layer. Handled the business logic in the service layer. Parsed CLI input to call corresponding service methods in the controller layer. Implemented Spring framework using Spring Boot to manage the classes with IoC container. Tested with integration tests and unit tests using JUnit 4 and Mockito.

## Highlighted Projects

**Sliding-Puzzle** [GitHub]: Designed a sliding-puzzle game in Verilog. The game displays a 4 x 4 board where only numbers from 1 to 15 are randomly assigned, and the player can move squares in 4 directions by 4 buttons on the breadboard to make the numbers in order. Implemented time countdown and move counter to display time left and moves used on the breadboard.

**Photo Album**: Designed a photo album application in Java. The application recursively searches all the photos in the given directory and presents them as icons, in a list or in a gallery. Implemented a tag feature, so that users can add or delete tags for each photo, and filter the result by tags. Implemented serialization to prevent the loss of tags by termination.

## Professional Experiences

**Data Engineer, Jarvis (2022/04 - present)**: Worked on backend projects related to PostgreSQL, REST API, and Java. Practised Scrum, supporting Scrum team members by arranging daily Scrum meetings and posting helpful suggestions. Took advice from Scrum Master and Product Owner seriously and produced top-grade work.

**Operation Specialist, GN Education Inc. (2021/01 - 2022/03)**: Managed the workflow throughout all departments within the business. Handled all order information requests from sales and technical issues on the website. Updated product information and video service on websites for clients. Calculated sales commission and payroll for all staff. Arranged and hosted daily zoom meetings.

**Tutor, Talent Education - GN Education Inc. (2018/09 - 2022/03)**: Tutored hundreds of university students in Mathematics courses, such as calculus, linear algebra and number theory. Improved their grade by at least one level. Solved any problems asked by students with concrete examples and detailed explanations.

## Education

**University of Toronto (2016/09 - 2020/11)**, Bachelor of Science, Computer Science, Mathematics - Distinction - Dean's List (2016) - GPA: 3.4/4.0

## Miscellaneous

- Bilingual
- Badminton player
- Spinning