

# Zailin Yuan

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## EDUCATION

<b>M.S., Computer Science</b>	2019-2020
University of Texas at Dallas, Dallas, TX	GPA: 3.44/4.00
<b>M.S., Chemical Engineering</b>	Dec.2018
University of Southern California (USC), Los Angeles, CA	GPA: 3.28/4.00

## SKILLS

- Skills: Java, C/C++, Unix / Linux, Git, MySQL, Html, CSS, JavaScript, jQuery, Python
- Tools: Eclipse IDE, Code Blocks, MATLAB, R, GitHub, MySQL, Notepad++

## PROJECTS & EXPERIENCE

### Back-End Server Aug.2019

Develop a server response to multi-requests by clients by concurrency.

- Implemented a Thread Pool with fixed 10 threads to treat customer requests.
- Designed a requests queue of fixed size in singleton mode.
- Realized communication between threads in thread pool by monitor. Thread safety of multi-thread processing are guaranteed.
- Optimized the code so that the multi-thread process gains a better performance.

URL: <https://github.com/ZailinYuan/Thread-Pool.git>

### Database Design Sep.2017

Implement SQLite with JAVA

- The database must be used by command line. It contains functions like insert, query, update, delete with or without selection condition.
- Meta-data are contained in the database file systems.
- The database is based on file system of Bit string I/O. A file system composed of pages of size 512B are realized. All operations (insert, query, update and delete) are based on bit string operation on database files.
- Index file system based on B+ tree is also developed for high performance of query records in database.

### Walking Labyrinth Game Jan.2018

Computer find the path of any maze

- Implemented a program to find maze path instead of human. Load maze from text files.
- Found path from the start location to the exit with DFS and backtracking algorithm.
- Developed an interface with JFrame and JComponent to display maze path.

URL: <https://github.com/ZailinYuan/MazePathSearcher.git>

### Anagram Dictionary May.2018

Scrabble game helper

- Designed a game helper to load dictionary specified by this game and find candidate word for players.
- Designed the user interface letting user to choose which game dictionary to load. Compiled AnagramDictionary.java to loading a dictionary from a .txt file. Using Map container to store the dictionary and find the word. Compiled ScoreTable.java to count the score the user get.

URL: [https://github.com/ZailinYuan/Word\\_Finder\\_of\\_Scrabble\\_Game.git](https://github.com/ZailinYuan/Word_Finder_of_Scrabble_Game.git)

### Student Score Management System Sep.2018

- Implement a hash map to build a student score management system
- Achieved its functions of input, delete, change, sort and search scores of students, and give statistical information on all data stored.
- A user interface is designed to offer User instructions (help list) of all the operations can do.

URL: [https://github.com/ZailinYuan/Student\\_Score\\_System.git](https://github.com/ZailinYuan/Student_Score_System.git)

### Data Analytics and Monitoring on Tennessee Eastman Process May.2017

- Led a team of four to analysis chemical process data by R.
- PCA, LDA and CCCA are employed in R and MATLAB to modeling on both the quality and process datasets of the Tennessee Eastman Process
- Calculated  $T^2$  and Q limit to detect potential disturbance in distorted data sets
- Introduced LDA method to decide which observation belongs to normal region/abnormal region
- Used CCCA method to monitor the input and output of process with disturbances
- Graphics to show results. Power Point and Oral defense.

For more my codes: <http://github.com/zailinyu>