Badral Khurelbaatar

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Github | LinkedIn

Education

Carleton University Ottawa, ON
Honors Bachelor of Computer Science, Minor in Mathematics *Expected Graduation May 2023*

GPA 4.0/4.0
Scholarships/Awards: Dean's List, Faculty of Computer Science Scholarship

Experience

Carleton University Ottawa, ON
Teaching Assistant: COMP 2401 Systems Programming (C, gdb, Linux) *September 2021 - December 2021*

- **Assignment Grading:** Graded students' assignments and gave relevant feedback to students
- **Tutorials:** Led, taught, and marked weekly tutorials to ensure students fully understood the lecture material
- **Office Hours:** Engaged with students by conducting weekly office hours to help debug students' assignment code

Trade and Development Bank of Mongolia Ulaanbaatar, Mongolia
Software Developer (Java, Linux, SQL, git, Android Studio) *May 2020 - December 2020*

- **Agile Development:** Developed and documented a mobile application (functional on Android) using MacOS, Android Studio Code, and Java. This application permitted Employees to select a training session, and scan a QR code for attendance
- **Documentation:** Wrote documentation on features, release notes, and update notes for future developers. Also helped write on boarding documentation for incoming students and helped translate between English and Monglian
- **Quality Assurance:** Developed unit and systems tests and implemented JUnit for Automation testing

Technical Skills

- **Programming Languages**: Python, Java, C++, C, JavaScript, SQL, MongoDB, Bash
- **Web Frameworks**: React.js, Node.js, Express.js, Pandas, Numpy, SciPy, PyGame, pip
- **Tools/Environments**: Git, Windows, Linux, MacOS, gdb, Visual Studio, JetBrains, MS Office
- **Languages**: English, Mongolian

Projects

- **Farm Stats** Report Generator implementing data taken from StatCan
  C++ (STL, gdb), Linux, Git
  - Designed and implemented code following Object-Oriented programming guidelines
  - Modelled using UML Diagrams for trouble-free project maintainability
  - Implemented memory efficient data structures for reduced code run-time and overall program size

- **N-Queens AI Solver** Implemented a Genetic artificial intelligence algorithm to solve the classic chess problem
  Python (numpy, pygame), MacOS, Git
  - Used AI to place n queens on a n x n chess board, where no queens could attack each other
  - Defined the chessboard through chromosome representation and applied genetic operations like Mutation and Crossover to find the ideal solution
  - Developed a Pygame GUI to visually display the solution to the user

- **Multi-Threaded Race Simulator** Fantasy game with runners racing up a mountain and Dwarf Orcs try to stop them.
  C, Linux, Git
  - Implemented multi-threading using mutexes and semaphores to improve run-time
  - Focused on proper resource-allocation to avoid inefficient memory use and leaks
  - Applied the curses.h library to create a terminal based GUI for a more visually pleasing experience