Badral Khurelbaatar

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Github | LinkedIn

Education

Carleton University Ottawa, ON
Honors Bachelor of Computer Science, Minor in Mathematics (CGPA 11.07) *September 2019 - December 2023 (Expected)*
Dean's Honor List, Faculty of Computer Science Scholarship

Work Experience

Carleton University Ottawa, ON
Teaching Assistant: COMP 2404 Introduction to Software Engineering (C++) *January 2023 - April 2023*

- Helped teach courseware involving Introduction to object-oriented software development, with emphasis on the design and implementation of maintainable, reusable software. Topics include abstraction, polymorphism, encapsulation, and an introduction to design patterns.
- Instructed weekly tutorials for 150 undergraduate students, ensuring comprehension of lecture material through marking and feedback.
- Facilitated weekly office hours to help debug over 50 students' assignment code, resulting in a 20% decrease in student confusion.

Carleton University Ottawa, ON
Teaching Assistant: COMP 2401 Systems Programming (C) *September 2022 - December 2022*

- Scored & evaluated 100+ assignments from students, providing constructive feedback to facilitate learning.
- Instructed weekly tutorials for 70 undergraduate students, ensuring comprehension of lecture material through marking and feedback.
- Facilitated weekly office hours to help debug over 50 students' assignment code, resulting in a 20% decrease in student confusion.

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

- Created mobile app to enable Employees to select training sessions and scan QR codes for attendance, resulting in improved accuracy of employee tracking, and reduced training session time by 5%
- Authored detailed feature documentation, release notes & update notes to facilitate comprehension of existing codebase for incoming developers.
- Developed over 100 unit tests to verify code accuracy, resulting in a decrease of bugs found during production by 10%.

Technical Skills

- **Programming Languages**: Python, Java, C++, C, JavaScript, SQL, MongoDB, Bash
- **Web Frameworks**: React.js, Node.js, Express.js, Pandas, Numpy, SciPy, Tensorflow, Pytorch OpenCV,
- **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