Alvaro Valdez-Duran

(123) 456-7890 valdezduran.cs@gmail.com linkedin.com/in/alvaro-valdez-duran github.com/AlvVal282

Education

University of Washington **Expected June 2025**

Bachelor of Science in Computer Science, Minor in Mathematics *Tacoma, Washington*

Relevant Coursework

- Data Structures
- Algorithms Analysis
- Database Management
- Object-Oriented Programming
- Software Engineering
- Web Development
- Computer Networks
- Discrete Mathematics

Experience

University of Washington **September 2024 - Present**

Teaching Assistant *Tacoma, Washington*

- Assisted over 30 students in understanding core programming concepts like variables, loops, and conditionals in an introductory programming course, leading to a 20% increase in average student performance on assignments.
- Provided hands-on support during weekly lab sessions, troubleshooting and guiding students through debugging processes, improving their problem-solving skills and code quality.
- Worked with provided lab materials to facilitate weekly lab sessions, increasing student engagement and improving the retention of key concepts by 15%.
- Offered one-on-one assistance to students who needed help, resulting in an average grade improvement of 10% for those receiving extra help on assignments and exams.
- Facilitated discussions, answered questions, and reinforced lecture content, ensuring a deeper understanding of course material.

Projects

Evolved Names | *Java* **Jan. 2024**

- Designed and implemented a genetic algorithm that simulated evolutionary processes, including mutation, crossover, and selection, to evolve strings towards a target name within 100 generations.
- Implemented a probabilistic mutation mechanism that allowed for character insertion, deletion, and replacement, introducing genetic diversity and enabling robust exploration of the solution space.
- Developed a crossover strategy that combined traits from two genomes, ensuring efficient recombination while maintaining genetic diversity for faster convergence.
- Achieved target name evolution in less than 50% of the allowed generations on average, demonstrating efficient algorithmic design and fine-tuned parameterization.
- Showcased understanding of genetic algorithms by visualizing evolutionary progress and ensuring convergence through adaptive fitness evaluation and mutation rates.

Dungeon Adventure | *LibGDX, Java, GitHub* **Jul. 2024 - Aug. 2024**

- Contributed to the design and implementation of core gameplay mechanics, including player movement and combat, for a dungeon exploration game in collaboration with a team of 3 members.
- Developed 30% of the game's core systems, ensuring smooth integration of player actions and combat features.
- Collaborated on visual and audio design, incorporating 5+ sprite animations and sound effects, enhancing game immersion and user experience.
- Coordinated tasks with team members, ensuring all features were delivered on time despite tight deadlines.

Library Book Management System | *React, Node.js, Next.js, Postgres, Docker, Postman, GitHub* **Oct. 2024 - Dec. 2024**

- Collaborated with a team of 4 developers to create a full-stack web application for managing library books, utilizing Agile methodology for iterative development and continuous improvement.
- Utilized weekly stand-up meetings to share progress, discuss blockers, and ensure team alignment on goals and priorities.
- Designed and implemented frontend features for reset-password, login, register, and delete pages, improving user experience and ensuring an intuitive interface.
- Developed backend routes in Node.js for efficient deletion by ISBN, title, or author, securely handling 10,000+ book records and ensuring smooth scaling as the system grew.
- Participated in regular sprint reviews and retrospectives, identifying areas for improvement and optimizing performance for subsequent sprints.

Technical Skills

Languages: Python, C, C#, Java, JavaScript, TypeScript, SQL, R
Developer Tools: VS Code, IntelliJ, PyCharm, Git, GitHub
Technologies/Frameworks: LibGDX, React, Next.js, Node.js, Docker, Postman, Arduino