Christian Bacalhau

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Availability: January - August 2025

Education

Northeastern University Boston, MA

Candidate for a Bachelor of Science degree in Computer Science | GPA: 3.64/4.0 *September 2023 - May 2027*

Relevant Coursework

Object-Oriented Design, Algorithms and Data Structures, Projects in Cloud Computing, Programming in C++, Discrete Structures, Mathematics of Data Models, Intro to Mathematical Reasoning, Fundamentals of Computer Science

Technical Skills

Languages: Java | C++ | Python | SQL | JavaScript | HTML/CSS | React | Swing | JUnit | Mockito | Pandas
Developer Tools: Git | IntelliJ | Eclipse | VS Code | Docker | Jupyter Notebook | AWS | Datagrip

Projects

Web Application | *Amazon Web Services* June 2024

- Developed a functional web application created on an EC2 instance that records a university student's information
- Configured an Application Load Balancer and Amazon's EC2 Auto Scaling to ensure the web application is fault tolerant and can handle large amounts of traffic
- Used Amazon's Cloud9 to simulate 600,000 requests which successfully auto-scaled and load-balanced
- Decoupled the application using Amazon's RDS to create a MySQL database that stores the data and provides scalability/reliability
- Set up IAM roles and implemented AWS Secrets Manager to provide secure access and communication within the cloud infrastructure

Marble Solitaire | *Java, Swing, JUnit, IntelliJ* June 2024

- Implemented Marble Solitaire using object-oriented programming with inheritance and encapsulation, creating a modular game structure
- Applied MVC pattern by separating the model (game logic), view (user interface), and controller (user interactions) to enhance code organization and maintainability
- Implemented multiple game variants of Marble Solitaire, with a UI that lets players select their preferred version

Light'em All | *Eclipse, Java* April 2024

- Included interactive controls for tile manipulation and game state checks for victory conditions
- Utilized Kruskal's algorithm to generate a minimum spanning tree for puzzle creation
- Implemented tile rotation, power connection logic, and UI rendering with game progress tracking
- Constructed a GUI that is updated dynamically, reflecting the game's state and updates based on user input

Minesweeper | *Eclipse, Java* March 2024

- Demonstrated the use of object-oriented programming through classes that organize the game's cells, board, and logic, ensuring clean code separation
- Developed a graphical user interface that updates based on user input and displays all information for the game
- Captured user input for selecting cells and created the game board based on their size and difficulty preferences
- Managed user interactions, win/loss conditions, and cell revealing through well-defined functions

Experience

Amazon Web Services Skill Center May 2024

Northeastern University *Seattle, WA*

- Participated in weekly educational sessions at the AWS Skills Center, gaining hands-on experience with foundational cloud computing concepts
- Learned the fundamentals of cloud computing, e.g., databases, networks, scaling, security, block storage, etc.

Northeastern Electric Racing - Software Team Sep. 2023 – May 2024

Northeastern University *Boston, MA*

- Utilized Docker to run the software that held the website for the team written in TypeScript and using React
- Handled bug fixes and implemented new features on the team's website based on requests from other members
- Used Git to push my changes to the code base to await further approval

Interests & Languages

Weightlifting | Soccer | Anime | World Travel | Golf | Proficient in Portuguese and Spanish