Alan Grissette

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Education

Bachelor of Arts in Computer Science — Boston University | Graduation Year: 2024

Skills

Proficient: Python | Java | C# | GoLang | HTML | CSS | Bootstrap | XML | SQL | Adobe XD | JavaScript | React

Familiar: Ocaml | C | MATLAB| MongoDB | Assembly | Figma | Tailwind | AWS

Work Experience

BlackRocket Productions — *May 2023 - January 2024*

Video Game Development Instructor and Programmer

- *Instruction:* Led 50+ students in mastering Unity programming, covering 10+ essential topics such as **scripting, animation, and C#** through structured lessons, presentations, and self-created tutorials.
- *Debugging:* **Resolved 100+ coding errors** using C#, ensuring seamless project development and a **95%+ project completion rate** among students.
- *Project Guidance:* Provided 100+ hours of personalized feedback, guiding students to develop unique video game projects featuring **projectiles, platforming mechanics, music, sound effects, and intricate storytelling.**

Projects

PetMate: Pet Rental Application — *January 2024*

- Led the development of a pet rental web application, overseeing both **front-end and back-end development** while facilitating Agile processes to ensure timely delivery of features as **scrum master.**
- Managed **10+ Agile sprints**, overseeing development and integration of key features, allowing 100+ users to list, rent pets, and communicate using **C#, Blazor, and ASP.NET**
- Integrated AWS cloud support with MongoDB for **data management,** optimizing **scalability** and performance of the application infrastructure.
- Developed 5+ critical features, including **secure payment processing** and **geolocation functionality**, by leveraging **APIs, NuGet packages, and CSS/Bootstrap** for enhanced user interfaces.

Algebraic Equation Interpreter — *June 2024*

- Developed an OCaml-based algebraic expression parser that efficiently evaluates expressions with up to **10 operators and 5 variable types**, processing up to **100 expressions per second.**
- Implemented a highly flexible scope management system, enabling variable bindings and function definitions for over 50 unique expressions with **automatic error handling for unbound variables**.
- Optimized expression evaluation performance by reducing computational complexity by 30%, **handling recursive and nested functions with up to 10 levels of depth**.
- Designed and integrated a robust error-handling system, **reducing user-reported bugs by 25%** by catching syntax errors and providing meaningful feedback for invalid expressions.

AI Chess Game — *March 2022*

- Developed a fully functional chess game using Java on the SEPIA platform, integrating a **custom minimax AI** with move ordering to enable strategic decision-making and optimize gameplay.
- Optimized AI performance by **implementing multi-threading** for concurrent move searches, reducing calculation time by 40% and pruning 30% more branches using advanced **alpha-beta pruning** techniques.
- Integrated **XML-based board configuration** to define layouts and game states, enabling flexible board setups and cutting startup time by **20% for faster game initialization.**
- Enhanced user experience with real-time player-agent interactions, implementing timeout checks to maintain responsiveness and scaling **AI move decisions to a 4-second decision window** for a challenging opponent.

Achievements

Boston University 2024 Hackathon Runner-up : *Developed an AI model using MediaPipe to recognize hand gestures for a virtual chalkboard*