Maya Bee Jackson

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EDUCATION

CARNEGIE MELLON UNIVERSITY   Pittsburgh, PA
Bachelor of Computer Science and Fine Arts; Minor in Robotics   Expected May 2027
Cumulative GPA: 3.55/4.0; Dean's List 2023-2024
Relevant Coursework: Introduction to Computer Systems; Parallel and Sequential Data Structures and Algorithms; Matrices and Linear Transformations; Great Ideas in Theoretical Computer Science; Principles of Imperative Computation; Principles of Functional Programming, Robot Building Practices; Creative Coding, Fundamentals of Programming
Upcoming Coursework: Planning Techniques for Robotics, Web Application Development

PROJECT EXPERIENCE

LAST DANCE - LEAD GAME DEVELOPER AND SOFTWARE ENGINEER   May 2025 – Dec 2025
- Designed and implemented a real-time P2P networked game using C++ and Blueprint scripting in Unreal Engine 5.6, focusing on low-latency networking.
- Developed innovative custom data structures and pre-processing techniques to significantly reduce network traffic.
- Led modelling/VFX team and coordinated play-testing sessions using Agile sprint cycles for rapid iteration.

TELEOPERATED ROBOTICS PROJECT   Nov 2025 – Dec 2025
- Designed, machined, and built robotic system for gripping, transporting, and lifting objects under time constraints.
- Used kinematics, dynamics and force analysis to influence actuator selection and assess reliability.
- Created complex CAD models and machined custom components, iterating often to refine performance.
- Achieved 100% performance on final demonstration, with a product that emphasized user control, performance and repeatability.

DYNAMIC MEMORY ALLOCATOR   Nov 2024
- Wrote a low-level dynamic memory allocator in C which maintains blocks of heap memory for application.
- Used segregated fits approach with explicit free lists to achieve memory utilization of 67% and minimize fragmentation and sbrk calls.

CUSTOM PHYSICS-BASED GAMEPLAY SYSTEM   May 2024 – August 2024
- Designed and implemented finite state machines for player/enemy behavior with transition logic and state orchestration.
- Created a custom 2D physics engine in Godot using GDscript.
- Implemented flocking algorithms and performance-aware AI to invoke emergent enemy swarm behavior.
- Developed GLSL shaders and particle effects by integrating GPU-accelerated rendering.

ASCII MADNESS - PYTHON GAME DEVELOPMENT   Oct 2023 – Dec 2023
- Developed real-time gameplay loop with procedural enemy pattern generation and modular entity management within MVC framework.
- Awarded Legendary Prize in a CMU programming course (1st out of 600 submissions).

RESEARCH EXPERIENCE

THEORETICAL COMPUTER SCIENCE RESEARCH (Summer Undergraduate Research Apprenticeship)   Remote
Student Researcher   May 2025 – Aug 2025
- Independently facilitated the solving of NP-hard X3C instances by a biological organism using Karp reductions from X3C to Euclidean Steiner Tree problem. Developed appropriate reduction and structure based on existing literature and mathematical exploration.

ADDITIONAL

Technical Skills: C++, C, C#, SML, Javascript, x86 Assembly, GLSL, Python, HTML, CSS, OCaml; Unreal 5.6, GIT, OpenCV, APIs, SDLC (Agile/SCRUM)
Languages: Fluent in English; Conversational in Spanish; Beginner in Czech