Nathan R. Gooneratne

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Available: September 2024 - December 2024

EDUCATION

Northeastern University, Boston MA **Aug. 2022 - Present**
Khoury College of Computer Sciences
Candidate for Bachelor of Computer Science and Game Development

Expected Graduation: May 2026
GPA 3.97/4.00 - Honors Program
Dean's List: All Semesters

Relevant Coursework: Object-Oriented Design, Algorithms, Game Artificial Intelligence (*in-progress*), Intro to C++, Game Studio, Level Design and Game Architecture, Linear Algebra (*in-progress*), Rapid Idea Prototyping, Foundations of Psychology, Fundamentals of Game Design, Games and Society

COMPUTER KNOWLEDGE

Languages - Proficient: **C#**, **Java**, **C++**, **Python**; Familiar: **Swift**, **HTML**, **CSS**, **JavaScript**, **HLSL**
Software - Proficient: **Unity**, **Git**, **Visual Studio**, **VSCode**, **IntelliJ**, **Blender**; Familiar: **Substance Painter**, **Godot**, **Unreal**
Systems - Proficient: **Windows**, **MacOS**; Familiar: **Linux**

PERSONAL AND ACADEMIC PROJECTS

Project Beat: (Personal) **Dec. 2023 - Present**
- Implemented modular OoD code architecture for a 2.5D variable-player count Beat-Em-Up game in **Unity** with **C#** using the **InputSystem** package
- Utilized a custom **Python** script to facilitate splicing of 70+ non-uniform sprites
- Designed a priority-based input-buffer system with a binary insertion algorithm
- Developed framework for storing sequence data separately from Unity animation clips with **Unity Mechanim** and minimal use of Monobehaviour scripts

Project Dall-E: (Personal) **Mar. 2023 - Apr. 2023**
- Created Dall-E-inspired first-person puzzle game with custom asset importer and semantic-scoring algorithm to facilitate puzzle develop process
- Built custom dialogue system with variable text speed and dialogue-world events
- Programmed NPCs with **Navmesh** collision-avoidance roaming behaviors and custom animations with ShapeKeys and dynamic **Rigging** multi-aim constraints

What Remains of Me: (Academic) **Sept. 2023 - Dec. 2023**
- Improved upon student-led **Unity** platformer game with 40 other students in a mock-studio environment
- Pioneered refactoring effort of the moving element behaviors used in 10 scenes
- Utilized **Editor** scripting to create utilities for generating modular line meshes
- Coordinated tasks with **Agile** workflow, **Jira**, and a **task/story-point** system

WORK EXPERIENCE

Northeastern University, Boston, MA **Sept. 2023 - Dec. 2023**
Teaching Assistant for Object-Oriented Design

- Held office hours and lab 8 hours per week with other TAs to provide academic support for ~400 students regarding code debugging, feedback on student implementations, and explanations of design patterns and concepts
- Assisted in professorial tasks like exam proctoring, grading ~130 student assignments, and evaluating final projects
- Mentored students in proper OoD design patterns in the context of **Java** in **IntelliJ** with **Git** source control

EXTRACURRICULAR ACTIVITIES

Game Studio Club @ Northeastern **Sept. 2022 - Present**
- Produced 8 games as part of Game Jams or Long-Term Projects in teams with 3-5 other students
- Coordinated group tasks and made teaching materials/framework code documentation for Unity
- Elected Vice President in April 2023

INTERESTS

Drawing, Writing, Badminton, Animating, Swiss-German Language, Reading Science-Fiction/Fantasy, Baking, D&D