Nicholas “Eleanor” Rasmussen

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OBJECTIVE

Seeking a full-time position in software development to utilize video game programming skills in creating easily accessible applications with a focus on the end user experience

TECHNICAL SKILLS

- Programming Language: C#, Javascript, C++
- Tools: Unity, Visual Studio, Git
- Linear Algebra, Trigonometry, Discrete Mathematics

PROFESSIONAL EXPERIENCE

Game Developer January – May 2020
MAGIC Spell Studios | Rochester Institute of Technology, Rochester, NY

- Pitched, planned, and developed a 2D platforming video game in the Unity game engine
- Worked extensively with physics-based systems to create reactive real-time player movement controls
- Utilized linear algebra, trigonometry, and raycasting techniques to simulate firing a bow and arrow in 2D space, including simulating physical properties of a flying arrow and detecting and handling arrow-to-game-object collisions
- Programmed the boid algorithm to simulate flocks of autonomous agents, modified the algorithm to support game-specific behaviors such as attacking the player and following and protecting a designated flock leader
- Showcased project progress in weekly meetings with program managers
- Gathered, interpreted, and implemented player feedback

Game Development Instructor July – August 2019
iD Tech Camps | Allentown, PA

- Taught teenage students week-long game development courses including gameplay programming with C# in Unity, 3D modeling in Autodesk Maya, and level design in Unreal Engine
- Learned new technical skills on a tight deadline

Software Development Intern May – August 2018
Link Computer Corporation | Bellwood, PA

- Utilized Windows Task Scheduler to fully automate the monthly transfer of a client’s backup data from local storage to Amazon Web Services cloud storage via the execution of a custom script
- Programmed reactive and user-friendly Excel macros in Visual Basic to modify and add data to company spreadsheets, as well as import and export spreadsheet data to CSV files
- Revised a client’s survey software to meet updated requirements by writing custom JSON objects which modified the contents of a questionnaire in response to previously answered questions

EDUCATION

Rochester Institute of Technology, Rochester, NY August 2023
B.S. in Game Design and Development

STUDENT AND PERSONAL PROJECTS

Dungeon of the Dragon | Personal Project January 2023

Tower Defense Video Game

- Concepted, prototyped, polished, and released a game in 3 days for the Ludum Dare game jam
- Combined in-world nodes, vector normalization, and random number generation to create a semi-predictable but non-deterministic pathfinding system
- Emphasized text-light player onboarding through extensive use of procedural animations and visual feedback in response to player actions
- Utilized the singleton pattern to increase cross-script access to data and functionality

A Town Called Trouble | Student Project December 2022

Open World Adventure Video Game

- Created a small open world game using Javascript and the HTML canvas feature
- Programmed custom implementations of game scene loading and changing, context-dependent button input, and bounding box collision detection
- Created a development tool which imported dialogue lines and microdirectives from a text file and automatically produced a corresponding JSON graph object to handle non-linear conversation mechanics

Croak and Dagger | Student Project August – December 2022

Hack n' Slash Video Game

- Collaborated in the Unity game engine as a gameplay programmer on a team of 14 students
- Made extensive use of concepts in linear algebra to create a pendulum-like swing mechanic that could execute in any direction within 3D space
- Wrote detailed technical documentation of the swing mechanic including conceptual explanations, specific code and equation examples, and visual guides
- Worked with an event-based input system, raycasting collision detection, and linear interpolation to create responsive object-pulling that integrated seamlessly with other systems such as combat and AI
- Assisted in creating the game's program architecture

Orbits | Personal Project June 2023

Interactive Simulator

- Built a solar system simulator using Lua and the Pico-8 fantasy console
- Utilized a polar coordinate system to simulate planets orbiting the sun
- Simulated Newtonian conservation of momentum to create semi-realistic movement through space
- Tracked camera movement and applied transformations to game world objects to display a large solar system in Pico-8's limited screen size

D&D Battle Royale | Personal Project March 2022 – January 2023

Tabletop Roleplaying Game (TTRPG) Module

- Developed an adventure module simulating the Team-Based Battle Royale video game genre in the Dungeons and Dragons TTRPG ruleset
- Analyzed and modified the rules of Dungeons and Dragons using calculated averages of dice rolls to streamline non-player character behavior, optimize distribution of in-game items, and otherwise push new behavior out of the existing system
- Designed and developed a game map spanning 0.4 square kilometers of in-game space including custom minigames and a map-wide puzzle inspired by recursive programming patterns