Nicky Flello

Software Engineer

778 908 5692

nicky_flello@hotmail.com

http://nickyflello.wixsite.com/portfolio

Introduction

I am a Junior C++ software programmer from LaSalle College Vancouver. I have taken on many personal projects, and have an interest in audio programming, as well as machine learning and genetic algorithms.

Specialties

C/C++, C#, Unity, Unreal, File IO, Virtual Reality, Audio analysis, Neural networks

Education

LaSalle College, Vancouver BC   **July 2014 - December 2017**

Bachelor of Science in Game Programming

- An in-depth C++ education that covers memory management, OOP, polymorphism, templates, STL, C++11/14, algorithms, pipelines, AI, networking, multithreading, graphics, engine architecture, meta systems, calculus, physics, optimizations, and more

Project Experience

Midi Game (C++)   **August 2016 - Present**

A program for learning piano with midi keyboards and midi files.

- Implemented midi and wav libraries
- Integrated RtMidi for device binding
- Multithreaded file and loading systems
- Optimized loading, gameplay, and graphics

Neural Network Libraries (C++)   **March 2017, November 2017**

Custom libraries implementing neural networks and genetic algorithms.

- A simple fixed-topology neural network
- A dynamic-topology neural network
- Implemented the NEAT genetic algorithm, which includes speciation and gene crossovers

Monster Defence Shop (Unreal 4 / C++ / Blueprints)   **July 2017**

A VR blacksmithing game created in 5 days with a team of 5 programmers. It won best VR in the 2017 Unreal Summer Game Jam. It involved taking ores through 4 stages; the furnace, the anvil, the grind wheel, and giving it to the customer.

- Implemented an efficient anvil rhythm game
- Implemented features such as returning thrown items and fire hands.

Mining Link (C++)   August 2015 - September 2015

A 2D game where the players must mine, sell, and upgrade.
- Implemented a tile-based intractable world with mining and explosives
- Implemented inventory and selling
- Implemented UDP local multiplayer and chat

3D Touhou (C++)   September 2015 - October 2015

A 2D bullet hell game with 3D bullet patterns
- Implemented everything as polymorphic, including the characters, stages, and spells
- Implemented colourful 3D attack patterns in a 2D engine

Rhythm Game (C++)   January 2015 - March 2015

A music game/tool created for compatibility with Osu! It analyzes mp3 files and turns them into levels with 1-8 key rows. The player must hit the keys as the notes come down the screen.
- Implemented a user-driven beat detection system

Tobble Swap (Unity 5 / C#)   July 2016 - Present

A group production game with a team of 3 programmers, 9 designers, and 2 artists. It is a multiplayer top-down dungeon crawler with adventure and PvP modes. Each player has the ability to swap out their legs, body, or head for polymorphic functionality.
- Implemented most of the core and gameplay systems, including the scene management, movement, sound, camera, controller, status effect, player, and enemy systems

3D Engine (C++)   October 2016 - Present

An ongoing project that started as a course project. This is a DirectX 11 engine capable of 2D and 3D rendering, custom shaders, post-processing, and animations.
- Implemented model binary file importing/exporting
- Implemented animation systems using keyframes, bones, and vertex weights
- Implemented Pixel, Vertex, and Geometry Shaders
- Implemented efficient billboards, rendering over 5,000,000 images in realtime

Work Experience

Cashier for Lil' Fella's Mini Donut Truck, Richmond BC   August 2016 - August 2017
- Involved a lot of communication between coworkers and between customers

References

Available upon request