Stephen Ennis

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Introduction:

I am a hardworking and passionate individual with a big interest for games development and network programming. I am a recent graduate awarded with a 2nd Class Grade 1 Bachelor's degree (Honours) in Computer Games Development, which has exposed me to current technologies and have learned to quickly adapt through them.

Education:

BSc (Honours) Computer Games Development 2013 – 2017 - *Institute of Technology, Carlow*

Work Experience:

- Junior Software Engineer at ***Fidelity Investments, Galway, Ireland*** (04/04/2016 -26/ 08/2016)
  - Heavily used Javascript as part of a project to extend the capabilities of the teams Jira usage
  - Using Splunk for searching and analysing log files to determine usage and represent the findings through graphs/charts
  - Globally collaborating with teams from America and India to investigate business requirements
- Volunteer Teacher at ***Coder Dojo in Carlow IT*** (2015-2016)
  - Helping children learn programming using Scratch and HTML.

Skills:

- Proficiency in Object Orientated Programming Languages (in order of strength): C++, Python, JavaScript, C#, HTML + CSS, GLSL.
- Technologies (in order of strength): SFML, SDL, Flask, Unity, XNA, Cocos2dx, Ogre3D
- Excellent knowledge of Linear Algebra, Vectors, Matrices, Quaternion rotations, 3D geometry
- Excellent with version control through use of git + Github
- Understanding of the rendering pipeline, OpenGL for 2D and 3D rendering, shaders
- Operating Systems: Windows, Android and some experience with Linux (Ubuntu Server, Ubuntu Gnome)
- Adept in documentation in regards to their design and to further detail its technicality using UML.

Projects - Videos of an assortment of various projects (source in descriptions)

Major University Projects

As part of my requirements for my degree I was able to apply my knowledge learned from previous years to major college projects.

1. 4th Year Project - (SFML, c++) - This was my fourth year research project where my goal was to investigate the performance of a particular approach to implementing artificial intelligence called Goal Oriented Action Planning (GOAP). This is where AI entities can be more tactically aware and respond more appropriately. My approach and findings can be seen in more depth in the readme section of the github source code link.
2. Bumper Racer - (SDL, SDL_Net, C++) - Many group projects were undertaken throughout my college course which served to emphasise the importance of teamwork. Real World Modelling was a module in which we worked in teams of 4-6 people over multiple long projects in an agile way with daily stand up meetings, sprints and evolving documentation. ARGO was a month long group project done in teams of 4. The aim of the project was to try create a game using a professional(real world) development approach. I learned the importance of clear communication when collaborating with others. I helped brainstorm and paper prototype game concepts. I took on the position of lead network developer and was responsible for the architecture of the network while making sure to inform everyone else of it's progression through Jira and standups. I used a client-server approach through a Ubuntu server instance on Amazon Web Services. I wrote the server code using SDL_Net as this was the same library I was using to make the client side code and it allowed the same code to be shared for tasks such as the serialization of data. I created sessions and a session management system so multiple players and games could take place at the same time. I implemented many techniques in order to limit the effects of network issues and improve consistency while accounting for unexpected disconnections or time outs of players. Some techniques implemented: clock synchronization, packet rate limit, interpolation ,extrapolation and linear convergence.
3. Malevolence Unfolded - (SFML, C++) - A pair project to design and create a game. I had to correctly interface with a controller, use a library for 3d sound effects (FMOD), use a collision detection library (Box2D) and an external map creation tool. This map creation tool allowed the creation of an isometric tiled map which then had to be exported to json and I parsed it within the game correctly.

Game Jams & Competitions

Throughout my education at I.T Carlow, I've participated in extracurricular events. These include;

1. *Global Games Jam, IT Carlow, 2015 - (Unity, C#)* - Produced a 3D endless runner game with a team of 3 people. I contributed C# scripts to manage the creation of game objects and level development. I also used Blender to help create some of the game models.
2. *Ludum Dare - (SFML, C++)* - Participated in the 39th Ludum Dare and completed a game from scratch within 48 hours over one weekend. Planning was a major part of this project as I had a limited time and so created prototypes and brainstormed ideas to quickly decide on the mechanics and goal of the game I would create. Through careful time management and execution, I ranked in the top 300 in multiple categories in my first entry.
3. *Games Fleadh, Thurles, 2015 - (Unity, C#)* - I entered the Games Fleadh in 2015 which takes place in Thurles. I was part of a 3 person team. I was responsible for designing and coding the User Interface and Achievement system. I also worked on fixing issues with gameplay and managing documentation. The game ultimately won an award for Best in Animation.

Notable Projects

1. *Defenders Of The AI- (SFML, C++)* - Pair project inspired by the 1981 Defender game highlighting the behaviour of artificial opponents. I implemented a Finite State Machine to achieve the different behaviours such as flocking, formations, and swarming.
2. *Multithreading - (SDL, C++)* - Solo project implementing the A* pathfinding algorithm on a dynamic tile based map with the objective of lessening the impact performance of larger maps through using multi threading. I had to ensure thread safety throughout the program and used a thread pool approach to help manage threads.
3. *2D Camera Component - (SDL, C++)* - A project with the goal of creating a tool in which other developers can simply add to their codebase as a component. Created a Camera system with functionality for panning, zooming, restricting to axis, snap to contain points, converting from world to camera coordinates and back, influence zones to automatically move the camera away or to locations, shake, view culling and configuring different properties . I had to plan my approach using a Design Document and a Technical Document in which I created sequence diagrams, class diagram and class responsibility cards. I also had to create a User guide which would act as the documentation for my library. I designed and coded with reusability and clarity in mind for end users.

Other Projects

Using Python to talk to a database - (python, MySql) - In this project I created a very basic styleless website with the goal of using Python to interact with a database. Flask was the micro web framework that was used along with its templating engine for displaying web pages. MySql was used as the database management system and was communicated with from python code. I tried to sanitize the input so as not to Sql injections.

Colour Flood / Robot Tank/ Space Fighter - (XNA, C#) - These are a three games I have created using the C# language through my first and second year of college through the use of XNA, a set of tools with a managed runtime environment provided by Microsoft that facilitates video game development**.**