ANTON MITKOV

Games Development Graduate

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PERSONAL PROFILE

I am a rendering and physics focused programmer with a big passion for games and a drive for problem solving. My main interests are game engines/tools development, but I like working on any problem that requires solving. My ambition is to expand my skills and talents through challenging opportunities.

PROGRAMMING LANGUAGES

C++ ●●●●●

GLSL ●●●●○

CUDA ●●●●○

TECHNOLOGIES

Visual Studio | VS Code | Compute Shaders | OpenGL | Git/GitHub | Unreal Engine 4 | SFML | Blender

EDUCATION

1st B.Sc. (Honours) Games Development

Edinburgh Napier University

Sept 2015 – July 2019 Edinburgh

Relevant Modules:

- Mathematics for Software Engineering
- Programming Fundamentals
- Software Engineering Methods
- Computer Graphics
- Intermediate Mathematics
- Physics-Based Animation
- Algorithms and Data Structures
- Games Engineering
- Artificial Intelligence
- Advanced Games Engineering
- Concurrent and Parallel Systems
- Computational Intelligence

AAA Diploma for Secondary Education

Natural and Mathematical Secondary School "Geo Milev"

Sept 2009 – June 2015 Bulgaria

Education Specialised in: Mathematics, Informatics, IT and English

EXPERIENCE

Volunteer Developer

Cyrenians Farms

Jan. 2018 - May 2018 | Edinburgh

- Design, development and integration into back end of a database.
- UML and User flow diagrams creation
- Agile development
- Close work with Front and Back End developers

PROJECTS

GPGPU Nbody Simulation

Edinburgh Napier University

Sep 2018 – Dec 2018 | https://github.com/ShanoToni/NbodySimulation

Nbody simulation problem was implemented using a rendering engine build in OpenGL. The nature of the problem was the calculation of the Newtonian gravity effecting the objects in a scene, given their mass and distance and integrating their movement given the gravitational forces. The main goal was to analyse and compare parallel computing approaches and GPGPU optimisations using CUDA.

GPGPU Ray Tracing Engine

Edinburgh Napier University

Sep 2018 – Dec 2018 | https://github.com/ShanoToni/OpenGLRayTracer

Implementation of an ray tracing rendering approach. The rendering is accomplished by following the path of the rays of light and their interaction in the scene. This allows easily implementing materials such as glass objects, reflections and shadows. Initial approach included using the CPU to calculate the colour of each pixel on the screen given the created scene and the path of the ray and using samples for each frame to improve the overall quality of the scene in a progressive manner. Final approach included creating the scene texture in the compute shader to improve speed, allowing a large number of objects and higher resolutions.

Domino Run Scene

Edinburgh Napier University

Sep 2017 – Dec 2017 | https://github.com/ShanoToni/PhysicsAnimation

A coursework used to demonstrate knowledge in creating a physics based animation, creating a physics engine, use of Visual Studio, OpenGl, C++ and Git. The program renders a number of domino shapes and a floor in a scene. The domino shapes have the force of gravity applied to them. Upon contact with the floor or each other an impulse-based collision response is applied to the given shapes, as well as a force of friction.

Additional projects available on my portfolio website or GitHub.

A DAY OF MY LIFE