Kaloyan Penev

Graphics Software Engineer

+44 7500 652536

kdpenev@gmail.com

https://penev.me

ABOUT ME

A problem-solver interested in computer graphics, machine learning and real world applications of technology. Professional graphics engineering experience using both UE4 and Unity. Reliable work ethic and adaptive learner with a major appreciation for neat software design and clever optimization techniques.

PROJECTS

HAND POSE RECOGNITION

Python | YOLOv4 | Darknet

Hand pose recognition with real-time speeds on consumer-grade GPUs using input from ordinary monocular phone cameras. Built with the YOLOv4 convolutional neural network model.

GAME ENGINE - eudaimonia

C++17 | C | OpenGL | GLSL

Data-oriented ECS framework created in native C++17 as backbone. 3D Physically Based Renderer made with OpenGL 3.3 as graphics system.

HOBBIES

In my free time you can most often find me in a **volleyball** sports hall, on a **ski** slope, or out on my **bike**. Other highly preferred activities include looking for new music and generally making a game out of everything.

EXPERIENCE

GRADUATE GRAPHICS ENGINEER

Hawk-Eye Innovations • Dec 2021 – Present

Unreal Engine 4 | C++20 | Qt | OpenGL | CMake

- Building out a Virtual Production application that is fully driven by in-house tracking data using a custom UE4 build and C++20, controlled by an in-house Qt app.

- Development and maintenance of Semi-Automated Offside technology - precise skeletal representations of tracking data visualized both over a live video feed in the form of AR, and in UE4 space for maximum precision. Used for officiating at FIFA World Cup 2022.

- Constant optimization of existing UE4 and communications architecture. Profiling performance in order to provide the Art team with more computational budget.

- Agile development in a team of 4. Worked in both Scrum and Kanban systems. Familiar with agile ceremonies and cross-team dependency handling.

JUNIOR UNITY DEVELOPER

VISTA AR, Bournemouth Uni • Feb 2020 – Jul 2020

Unity | C# | HLSL | Shader Graph

- Development and profiling of AR apps in **Unity**
- Performance optimization for mobile devices
- Shader programming with **HLSL** and Shader Graph

EDUCATION

BSc GAMES SOFTWARE ENGINEERING

Bournemouth University • Sep 2018 – Jun 2021
First Class Honours (80.49%)

- Dissertation: Hand Pose Recognition **– 80.50%**
- Graphics and Computational Programming **– 83.03%**
- Game Engine Programming **– 79.00%**