

Marc Steene

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EDUCATION

2013 - 2016: University of Bristol, Computer Science | **1st Class BSc**

2008 - 2012: St. Christopher's School

A Level: Biology, Maths, Physics, ICT (AS) | **A* A A A**

GCSE: **8 A*-A** including English and Maths

WORK EXPERIENCE

Developer, Bluewire Technologies | September 2016 - Current

Front end developer for electronic patient record software designed for NHS trusts. Technologies include TypeScript, React, Redux, UnderscoreJS, HTML, and CSS within the Visual Studio IDE. Agile methodology including daily stand ups, sprint retrospectives, and continuous integration are used for quick iteration, with peer reviewed pull requests to reduce bugs and improve code quality.

Junior Programmer, Exient | June 2016 - August 2016

Key member of the core programming group for a BBC licensed mobile game developed using the Unity engine (C#) for iOS and Android devices. Responsibilities included gameplay and UI programming, optimisation of GPU, RAM, and CPU resources using profiling tools, and working with other programmers as well as team members from other disciplines. Agile development with continuous integration using Git for source control and fortnightly sprints with weekly sprint reviews allowed for redistribution of workload if needed. Despite a large and developed codebase, I submitted code to the project within my first day and made several important contributions throughout my employment.

PROJECTS

www.marcsteene.com/projects

Computer Graphics Rendering | 2016

Developed rasteriser and raytracer renderers using C++ with the GLM library. Features included supersampling, direct lighting, shadows, and depth of field. The implementation was multithreaded using OpenMP for parallelisation across multiple CPU cores. The coursework received the 4th highest mark of the cohort.

The PHOENIX Protocol | 2015 - 2016

Programmer for university project developed with Unity by a group of seven computer scientists. Featured a number of technical challenges, including networking across a range of devices and optimising the game to render at 60 frames per second across three game instances simultaneously. Responsible for programming the gameplay logic (C#), networking and optimisation (network, CPU and GPU). Source code was maintained using Bitbucket with Git, JIRA for task management, and Slack for team communication. We achieved the highest mark of the year.

High Performance Computing | 2015

Provided with an inefficient implementation of the Lattice-Boltzmann algorithm in C for fluid simulation, I was tasked with optimising the algorithm to run on the BlueCrystal Phase III supercomputer. This involved rewriting large chunks of the algorithm to reduce inefficiencies, particularly in memory operations. One key optimisation involved switching from an array of structures to a structure of arrays memory layout. On top of this, I then parallelised the algorithm with three separate implementations: the first with OpenMP to divide work amongst CPU cores, OpenCL for multithreading across a GPU, and MPI for multithreading across multiple CPUs.

Artificial Intelligence | 2014

Programmed an AI agent using Java to play the role of 'Mr X' in the board game Scotland Yard as part of a year group university competition, winning first place against over forty other competitors. Pathfinding was implemented using the A* search algorithm and used in combination with knowledge of the game rules to outwit the human competitors.