Joseph O'Connor

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I am a student currently studying my 2nd year of Computer Science at The University of Cambridge. I have a passion for problem solving and an affinity for communicating concepts clearly and understandably. I take part in as many Computer Science related events as I can, such as Hackathons and Code Jams, while also helping to orginise volleyball and chess groups. I have won prizes for outstanding work within the university, and I aim to produce the best possible work with everything I do.

Qualifications

A-Levels	
Maths	A*
Further Maths	A*
Physics	A*
Computer Science	A*
EPQ	A*

GCSEs	
Maths	9
Further Maths	A**
English Language	7
English Literature	7
6 others	A* - A

Experience

IBM Internship	I assisted in developing the front and back-end of a coffee machine payment system in Python/Django.
Tutoring	I have tutored A-Level and GCSE students for both Maths and Computer Science, with all of them attaining A*-C.

Skills

Graphic Design	I have used GLSL to implement rasterized, ray-traced and ray-marched pipelines.
Functional Programming	I am fluent in OCaml.
ECAD	I am proficient with SystemVerilog.
OOP	I am fluent in C#, Python and Java and proficient with C++.
VCS	I am proficient with Git and using Jenkins for continuous integration.
Data Science	I have used Python for many data analysis projects, and am experienced in using Numpy and Scipy for vectorised programming, as well as MatPlotLib, Pandas and BeautifulSoup for gathering and presenting data.
Web Development	I have front-end experience (HTML, JavaScript, CSS, ReactJS, Bootstrap) as well as back-end (Docker, Nginx, Django).

Projects

1st Year Raytracing Competition[1]	I came 1st using a scene I created procedurally, and rendered in a ray-tracing program I built myself.
Symbolic Algebra System[2]	I am the lead developer of a Symbolic Algebra System for C# and Unity which supports parsing, equality, simplification and evaluation.
Isosurface Rendering Engine[3]	I have used my Symbolic Alebra System to create a realtime Isosurface Rendering Engine with support for Voxelisation, MC-33, Surface Nets and Dual Contouring.

[1] https://www.cl.cam.ac.uk/teaching/1920/Graphics/competition.html
[2] https://github.com/Joeoc2001/AlgebraSystem
[3] https://github.com/Joeoc2001/IsosurfaceRenderingEngine