

# Oliver Cruickshank

## Curriculum Vitae

### PERSONAL DETAILS

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Birthdate: December 11th 1999  
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### EDUCATION

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**Degree: University of York: Computer Science** 2018-2021

**A levels: Hills Road Sixth Form Centre** 2016-2018  
Achieved grades: Maths B, Physics B, Computing B, Extended Project B

**GCSE: St Bede's Inter-Church School** 2011-2016  
Achieved grades: A A A A A A A A B

### WORK EXPERIENCE

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**Assistant Graphics Engineer: Metail July 2015**  
Helped improve the posing of the 3D human model, as well as shadowed an engineer getting an introduction to industry software engineering

### PROJECTS

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**Fast Embree based Pathtracer** 2018  
Using Intel's Embree framework for high performance ray intersection tests to make a pathtracer. I wrote a simple threadpool to do tile-based rendering, a fast OBJ loader as well as progressive rendering using Win32

**BMO, a language to typeset documents** 2019  
I designed and built a language for typesetting documents for reports and documents. It is similar to groff, producing PDFs as output that are nicely formatted. This CV was written in BMO

**Pathtracer from scratch for my Computer Science coursework** 2017  
I wrote a pathtracer from scratch which used a KD-tree for fast search for possible triangle intersections among common features like depth of field, interpolated normals, and textures

**Metaprogramming Tool for C** 2018  
I wanted some new features for C, without having to use macros so I made a tool to add the 'defer' keyword like Go has. It uses the recursive descent parsing method.

**Picoblaze 6 JIT compiler and virtual machine** 2019  
The Picoblaze is a soft-core CPU designed to run on Xilinx FPGAs. I wrote a compiler that generates bytecode according to their specification and then implemented a virtual machine that runs the bytecode

### SKILLS

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**Languages** C, C++, Delphi, Rust, Python

**Technologies** OpenGL, Embree, SIMD, CUDA, Git

**Sport** Trialled for GB rowing in 2017 as well as competing nationally