

Michael Cooper

Curriculum Vitae

Address: 11 Brushwood Grove, Emsworth, PO10 7GJ
Phone: + 44 (0)7725920302
Email: mcooper.engineering@gmail.com
GitHub: www.github.com/MichaeHCooper/Example-Work/tree/master
Nationality: British

Academic Interests

My key academic interest is in trying to develop BIM software using a game engine backend. To compliment this I am very much interested in automation in the design of buildings, especially incorporating AI into this.

I am also interested in the application of AI in the construction world more generally including reinforcement learning and machine vision.

Personal Interests

Recently I have taken up figure skating and speed skating. I have competed and performed numerous figure skating routines. I am an avid skier and cyclist! In the past I have done significant amounts of sailing and Judo.

I am also a keen video gamer and have recently started to use this expertise to guide my knowledge as to what makes good software, specifically I am looking to build professional software using similar methods to the video games industry.

I enjoy politics and am currently an active member of the Liberal Democrat party in the UK.

Education

Postgraduate Degree	2018-2019
University of Bath	

MSc in Computer Science	High 2:1
-------------------------	----------

Undergraduate Degree	2015-2018
University of Southampton	

BEng in Civil Engineering with a key focus on AI within construction.	High 2:1
---	----------

Further Education	2013-2015
Havant & South Downs College	

Mathematics A2	A*	Chemistry A2	A
Physics A2	A	Further Mathematics A2	B

Secondary Education	2008-2013
Warblington School and Fareham College for Diploma in Engineering	

11 GCSEs	6 A*s, 1 A, 4 Bs	Level 2 Diploma in Engineering.	A
----------	------------------	---------------------------------	---

Coding and Software Experience

Autocad	Very Experienced	Python	Very Experienced
Sketchup	Very Experienced	Keras	Experienced
MS Office Suite	Very Experienced	Tensor Flow	Intermediate
Lusas	Experienced	C#	Intermediate
Midas	Experienced	C	Intermediate
Adobe Illustrator	Experienced	LaTeX	Intermediate
Indigo Render	Experienced	Unity	Intermediate
Solidworks	Intermediate	Matlab	limited
Abaqus	Intermediate		
GIT	Intermediate	Android	Very Experienced
HEC RAS	Basic	Windows	Very Experienced
3ds Max	limited	Linux	Intermediate
Ansys	limited	Mac OS	Basic

Work Experience

BIMnation **2018-Present**
Bath, UK

I am the Director of BIMnation, a company I have set up to explore developing BIM in a computer game engine.

Scott White & Hookins **2016-2017**
Winchester & Sutton, UK

Two summers, totalling 20 weeks interning as a civil and structural engineer within a design office. Projects included working on the structure for the Carolyn House project in Croydon.

HGP Architects **2014**
Fareham, UK

Two week internship as an introduction to architecture within a practice.

Emsworth Slipper Sailing Club **2013-2015**
Emsworth, UK

Regularly teaching sailing to a youth group as a volunteer. This involved a number of other qualifications I have: RYA dinghy Instructor, RYA Powerboat Level 2, RYA Safety Boat and RYA First Aid at Sea.

Key Projects

Neural Network to help automate structural design **2017-2018**
Dissertation

My research used a convolutional neural network (CNN) based on the YOLO network (J. Redmon S.D., 2016), to decompose arbitrary floorplans into rectangles. I did this to move further towards automated structural design; previously this has only been achieved on rectangular or rectilinear structures. My research now provides a method using CNN's which allows for a much wider range of structures to be automatically designed, by simplifying arbitrary floorplans into a set of rectangular segments, which can already have the structure automatically designed.

Final Year Design Project **2018**
University

Group project with 5 team members to design a full sized observation tower in Southampton. We designed a 200m tall post-tensioned concrete tower with an observation deck cantilevered at 140m high. The observation deck consisted of a 48m diameter steel ring that was clamped by post-tension cables on one side. I was responsible for the initial architectural design, the observation deck structural design and most of the CAD drawing.

Carolyn House **2017**
Scott White & Hookins

As part of a small team of engineers I contributed to the structural design of the Carolyn house project in Croydon. Specifically I worked on designing and checking the shear walls and steel work using FEA