Michael Cooper
Curriculum Vitae

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GitHub:	www.github.com/MichaeHCooper/Example-Work/tree/master
Nationality:	British

Academic Interests

My specialty is within the intersection of Civil Engineering and software. During my BEng in Civil Engineering I became interested in creating software for the construction industry, this has lead me to undertake a MSc in Computer Science to further my software design skills.

Within computer science I am specifically interested in artificial intelligence and it's application to the construction industry, as a consequence I have focused my MSc on AI and reinforcement learning.

Education

Postgraduate Degree   **2018-2019**
University of Bath

> MSc in Computer Science   Completion September 2019, Expected Merit/Distinction

Undergraduate Degree   **2015-2018**
University of Southampton

> BEng in Civil Engineering.   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 (Head Boy)

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

Career Summary

Bath on Ice   **2018-2019**
Bath, UK

> Worked as an ice-marshal part time over the Christmas period at the temporary rink in Bath.

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.

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 Saftey Boat and RYA First Aid at Sea.

Programming and Software Experience

Autocad	Very Experienced	Taught in BEng	Python	Very Experienced	Taught in MSc
Sketchup	Very Experienced		Java	Experienced	Taught in MSc
Office Suite	Very Experienced		C	Experienced	Taught in MSc
Lusas	Experienced	Taught in BEng	C#	Experienced	
Midas	Experienced		Haskell	Experienced	Taught in MSc
Adobe Suite	Experienced		Keras	Experienced	Taught in MSc
Git/GitHub	Experienced	Taught in MSc	Tensor Flow	Intermediate	
Rhino	Experienced	Taught in MSc	SQL	Intermediate	Taught in MSc
Grashopper	Experienced	Taught in MSc	Matlab	Basic	
Indigo Renderer	Experienced		HTML	Basic	
LaTeX	Experienced				
Abaqus	Intermediate		Windows	Very Experienced	
Unity	Intermediate		Android	Very Experienced	
Solidworks	Intermediate		Linux	Experienced	Taught in MSc
Revit	Basic		Mac OS	Intermediate	
HEC RAS	Basic				
3ds Max	Basic				
Maya	Basic				
Ansys	Limited				

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.

Key Projects

Moving Shape Grammars to Full Building Design   **2019-Present**
MSc Dissertation

> My MSc dissertation shall aim to push shape grammars, for example CGA used in ESRI City Engine, towards complete design of buildings. This will firstly involve translating the non-linear design process into something easily performed by computers, then creating a demonstration program. The demo program is intended to be capable of designing a building in it's entirety including every component, from beams to plumbing to facades.

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

> My research used a convolutional neural network (CNN) to decompose arbitrary floorplans into rectangles. I did this to move further towards automated structural design; previously this had 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.

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.