

## PROFILE

I'm a 24 year old computer scientist based in the UK. I graduated in 2018 with a master's degree in computer science from the University of Cambridge and have been involved in a number of projects at a variety of institutions around the world since then. I'm hoping to pursue a career in research and am currently looking for full time positions in the UK. I'm particularly interested in graphics, computer vision and machine learning. A portfolio of my recent work is available at [chewitt.me](http://chewitt.me).

## EXPERIENCE

### RESEARCH CONSULTANT - MICROSOFT RESEARCH - 2020

Eighteen month consultancy position with the Graphics & Multimedia group at Microsoft's research lab in Cambridge. Helping to build the next generation of head mounted displays.

### R&D INTERN - OLM DIGITAL - AUTUMN 2019

Three month internship with the R&D group at OLM Digital animation studio in Tokyo building in-house tooling for their 3D animation and visual effects pipelines. Primarily developing custom modelling tools for Autodesk Maya.

### RESEARCH CONSULTANT - MICROSOFT - SUMMER 2019

Three months with the Cognition research and development team based at Microsoft's lab in Cambridge, working on application of machine learning to problems in computer graphics and vision.

### RESEARCH ASSISTANT - COMPUTATIONAL MEDIA INNOVATION CENTRE - 2019

Three month RA position at the CMIC, Victoria University of Wellington in New Zealand, working with researchers and industry partners. Independent project work on computer vision techniques for omnidirectional stereoscopic video and its application to immersive mixed reality experiences.

### RESEARCH INTERN - MICROSOFT RESEARCH - 2018

Six month internship at Microsoft Research in Cambridge working on near-eye holographic display technologies for mixed reality. Development of hologram design algorithms and prototyping of holographic display systems, contributed to two patents relating to holographic and near-eye displays.

### INTERN - CYDAR - SUMMER 2017

Two month internship working at Cydar in Cambridge, helping to develop imaging technologies for surgeons to use in the OR. Software development work focussing on web-based technologies and user interaction.

### INTERN - JAGEX GAME STUDIOS - SUMMER 2016

Three month internship within the web team at Jagex, focussed on projects involving the exploration of potential future business opportunities. Working as part of a small team to develop prototype web-based software.

## EDUCATION

### TRINITY HALL, UNIVERSITY OF CAMBRIDGE - 2014-2018

MEng (distinction - 87%) in computer science

Research focussed masters involving lectures as well as independent research projects and a thesis. Courses: Affective Computing, Computer Vision, Probabilistic Machine Learning, Advanced topics in mobile and sensor systems and data modelling and Interaction with machine learning. My thesis was looking at facial alignment, involving application of machine learning to computer vision.

BA (first class) in computer science

Diverse three year course covering topics ranging from physics and computer hardware design to machine learning and human computer interaction.

JOHN HAMPDEN GRAMMAR SCHOOL - 2007-14

A Level

- A\* in Mathematics, Further Mathematics and Chemistry
- A in Physics

AS Level

- A in Mathematics, Further Mathematics, Chemistry, Physics and Geography

## SKILLS

- Programming in Python, C/C++, C#, Julia, MATLAB, CUDA, G/HLSL and others.
- Application of machine learning using tools such as SciKit, Keras, (Py)Torch, OpenCV and TensorFlow, primarily in the context of computer vision.
- Using and developing for the 3D modelling applications Blender and Autodesk Maya.
- Knowledge of holography and experience working in optical labs.
- Source code management using Git and SVN.
- Deploying software to a number of platforms including Windows, iOS and Android devices.
- Using HTML/CSS, PHP and JavaScript in the production of websites, including use of frameworks such as React, Angular, Bootstrap and Foundation.
- Graphical design experience including UI, UX and icon design using Adobe Photoshop.
- Database management using SQL.
- Proficient user of Mac OS, Linux and Windows operating systems.
- Extensive experience with Microsoft Excel, as well as word processing including use of  $\text{\LaTeX}$ .

## RESEARCH

A HIGH FIDELITY SYNTHETIC FACE FRAMEWORK FOR COMPUTER VISION

Tadas Baltrušaitis, Erroll Wood, Virginia Estellers, *Charlie Hewitt*, Sebastian Dziadzio, Marek Kowalski, Matthew Johnson, Thomas Cashman, and Jamie Shotton - Microsoft 2020

POSE-INFORMED FACE ALIGNMENT FOR EXTREME HEAD POSE VARIATIONS IN ANIMALS

*Charlie Hewitt*, Marwa Mahmoud - Affective Computing & Intelligent Interaction 2019

ASSESSING PUBLIC PERCEPTION OF SELF-DRIVING CARS: THE AUTONOMOUS VEHICLE ACCEPTANCE MODEL

*Charlie Hewitt*, Ioannis Politis, Theo Amanatidis, Advait Sarkar - Intelligent User Interfaces 2019

HEAD POSE ESTIMATION AND FACIAL LANDMARK LOCALISATION FOR ANIMALS

Masters Dissertation - Supervised by Marwa Mahmoud - University of Cambridge 2018

SHAPE-ONLY FEATURES FOR PLANT LEAF IDENTIFICATION

Masters Project - Advised by Marwa Mahmoud - University of Cambridge 2018

CNN-BASED FACIAL AFFECT ANALYSIS ON MOBILE DEVICES

Masters Project - Advised by Hatice Gunes - University of Cambridge 2018

CONFIDENCE MEASURES FOR CNN CLASSIFICATION USING GAUSSIAN PROCESSES

Masters Project - Advised by Damon Wischik - University of Cambridge 2018

PROCEDURAL GENERATION OF TREE MODELS FOR USE IN COMPUTER GRAPHICS

Undergraduate Dissertation - Supervised by Gyorgy Denes - University of Cambridge 2017

## REFERENCES

Dr Andreas Georgiou  
Principal Researcher  
Microsoft Research  
21 Station Road  
Cambridge, UK  
angeor@microsoft.com

Dr Erroll Wood  
Senior Scientist  
Microsoft  
21 Station Road  
Cambridge, UK  
erwood@microsoft.com

Dr Marc Slavati  
R&D Software Engineer  
OLM Digital, Inc.  
Mikami Building, Wakabayashi  
Setagaya-ku, Tokyo, Japan  
salvati.marc@olm.co.jp

