

# DR JONATHAN HATCHETT

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**GitHub:** <https://github.com/afinetapestry>

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## SELECTED PUBLICATIONS

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J. Hatchett, D. Toffoli, M. Melo, M. Bessa, K. Debattista, A. Chalmers. “Displaying detail under bright environments: A 10,000 nit display and its evaluation” *Signal Processing: Image Communication* (2019)

D. Marnerides, T. Bashford-Rogers, J. Hatchett and K Debattista. “ExpandNet: A Deep Convolutional Neural Network for High Dynamic Range Expansion from Low Dynamic Range Content”. *Eurographics* (2018).

J. Hatchett, K. Debattista, R. Mukherjee, T. Bashford-Rogers, and A. Chalmers. “An evaluation of Power Transfer Functions for HDR video compression.” *The Visual Computer* (2016).

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## EDUCATION

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### University of Warwick

**PhD** EFFICIENT AND ADAPTABLE HIGH DYNAMIC RANGE VIDEO **2013–2017**

Research into real-time high dynamic video (HDR) compression techniques using GPGPU technology. The PhD generated in two journal publications and a patent filing.

Taught the Computer Organisation and Architecture hardware labs for a number of years helping students get to grips with circuit design, low-level C and Assembly programming.

**BSc Honours** COMPUTER SCIENCE 2:1 **2009–2012**

Final Project: High Dynamic Range Video Compression in OpenCL.

**University of Reading** **2008–2009**

**Foundation Year** SCIENCE

**Ecclesbourne School**, Duffield, Derbyshire **1999–2006**

**A-Levels:** Maths; Physics; Computing.

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## EMPLOYMENT

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**StarLeaf** **August 2018–**

*Software Engineer*

Developed the new line of Microsoft Teams Rooms running on existing Teamline hardware. The project involved writing a suite of software to provide the required room facilities such as remote endpoint control. The software consisted of Windows services written in C and C++.

Developed the Microsoft Teams client for the Teamline hardware meeting room video conferencing endpoint. This task involved developing robust browser interaction in C# and JavaScript to manipulate the Teams client into behaving in the predicable manner required of a hardware installation.

**trueDR** **November 2017–July 2018**

*Senior Engineer (Contract)*

Developed real-time point cloud generation from stereo HDR video for the automotive sector including a comprehensive verification framework. The software was written in C++ and OpenCL for processing and OpenGL for display.

Performed HDR camera quality testing to analyse captured range with manufacturers specifications.

## goHDR

October 2013–September 2016

Played a key role in goHDR, a Warwick startup aiming to commercialise HDR Video, including development, pitching to investors, technical demonstrations to major industry players and trade shows.

Developed a cross-platform HDR Video Player in OpenGL/C++ with scriptable tone-mappers written in HTML/Python and platform specific frontends written in Win32, Cocoa and SDL.

## WMG, The University of Warwick

January 2013–March 2013

Continued progression towards a prototype real-time HDR video compression pipeline featuring live capture and compression from a video camera.

October 2011–June 2012

Contributed further improvements to the HDR pipeline whilst continuing my internship with the Visualisation Group during term. Implemented a HDR Video Compression algorithm in OpenCL for WMG who sponsored my undergraduate Final Project. The use of OpenCL and some novel algorithms allowed us to take compression from an offline task to near real-time performance.

July 2011–August 2011

As a summer intern with the Visualisation Group of the International Digital Laboratory, I worked on the capture and display of HDR video and Image Based Lighting, assisted with the field testing of a prototype HDR Video Camera and the development of an encoder for HDR videos and a Mac OS X application to play the encoded video.

## Dexdyne Ltd., Cirencester

July 2010–September 2010

Designed and implemented a web architecture for a remote telemetry service. Backed by PHP and PostgreSQL it supported localisation, plug-ins, AJAX and graceful degradation on non-compliant browsers.

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## SKILLS

### Computing

Programming skills in a wide-range of languages and environments, for example:

Developed online HDR image sharing website (<https://viewer.openhdr.org/>) in WebGL/TypeScript with a Node.js backend allowing full-range HDR images to be shared online and tone-mapped according to be the preferences of the recipient.

### Interpersonal

Supervised interns during the course of my PhD. On average four interns a year were placed with our group, ranging from the UK, the Czech Republic and Turkey. I provided support and direction on a daily basis.

Customer and client facing role manning the stall at trade shows such as NAB and IBC. I enthusiastically engaged visitors to our stall while demonstrating our products.

### Interests

I took up rowing in February 2019 with Chesterton Rowing Club. I won blades sitting in the stroke seat of the Men's 3<sup>rd</sup> VIII in the 2019 Cambridge Town Bumps. I then went on to win the The Mauldon's Brewery Trophy at the 139<sup>th</sup> Sudbury International Regatta. I also learn to scull and competed in the Rob Roy Small Boats Head in September 2019. In January 2020, I started coaching sculling for Chesterton Rowing Club.