

OLIVER WILLIAMS

Web <http://www.olliewilliams.org>

LinkedIn <https://www.linkedin.com/in/olliewilliams/>

Professional experience

- Feb 2023 - Oct 2023 **Performance AI**
Founder and CTO: I led development of a product for optimizing online advertising content through innovative use of generative AI and reinforcement learning. My role involved complete ownership of the engineering process, including the creation of a robust back-end execution engine, intuitive front-end user interfaces, and the design and implementation of customized machine learning models and algorithms tailored for our platform. Achieved a strategic exit in October 2023 with the private sale of our technology to a prominent advertising agency, who recognized the value of our platform for their internal use.
- Sept 2021 - Sept 2022 **Lacework**
Distinguished Engineer: Leading efforts to build a forward-looking, scalable, and robust platform for machine learning and data science.
- Jan 2015 - Sept 2021 **Apple Inc., Cupertino, USA**
Engineering Manager: I formed and ran New Product Architecture, a diverse, cross-functional team to design, prototype, and ship software architectures for future products and
- Nov 2007 – Sept 2014 **Microsoft Research, Silicon Valley, Mountain View, USA**
Senior Researcher: Performing fundamental research in Computer Science; communicating my research to the wider community and to Microsoft product groups; and providing support to Microsoft product groups on topics related to my expertise. Notable contributions include human body tracking in Kinect for Xbox 360, and the Hololens mixed reality headset.
- Nov 2005 – Nov 2007 **Microsoft Research, Cambridge, UK**
Associate researcher in machine learning and perception group. Main activities include the application of machine learning to real-time computer vision and signal processing problems.
- Oct 2005 – Nov 2007 **Trinity Hall Cambridge**
Research fellow in science. This is a four year position awarded in international open competition.
- June-Sept 2004 **Microsoft Research, Mountain View, USA**
Internship project in computer vision inferring the 3D geometry of a moving scene from stereo video data.
- June-Oct 2003 **Microsoft Research, Cambridge, UK**
Internship within machine learning and perception group. Developed a real-time face tracking system to be used in a forthcoming Microsoft product.
- June 2001 - Aug 2001 **Credit Suisse First Boston (UK), Canary Wharf, London**
Internship within investment banking division. Included an intensive course on corporate finance and accountancy.
- Sept 1997 - Sept 2000 **Ford Motor Co., Essex, UK**
Multi-year internship. Projects included:
 - concern resolution such as problems at engine start and overheating
 - designed and built diagnostic tool to calibrate interface between alternator and engine management system
 - a novel way to study windshield demisting performance using infrared thermography and computer vision

Education

- 2002-2005 PhD in Machine Learning and Computer Vision
Department of Engineering, University of Cambridge
Thesis title: *Bayesian Learning for Efficient Visual Inference*
Advisors: Roberto Cipolla and Andrew Blake. Supported by an EPSRC doctoral training award and Microsoft Research Cambridge.
- 1998 – 2002 MA/MEng in Engineering Jesus College, University of Cambridge
4 Year degree specializing in Electrical and Information. Passed with double first /distinction

Selected publications

- O. Williams and F. McSherry: *Probabilistic Inference and Differential Privacy*. Neural Information Processing Systems (NIPS), MIT Press, December 2010
- S. Kestur, J. Davis, and O. Williams: *BLAS Comparison on FPGA, CPU and GPU*. IEEE Computer Society Symposium on VLSI, IEEE, July 2010
- T. Hospedales and O. Williams: *An Adaptive Machine Director*. Proc. British Machine Vision Conference (2008), 2008
- O. Williams and A. Fitzgibbon: *Optimizing Matrix Computations for Learning*. Snowbird Learning Workshop, 2008
- J. Quiñonero Candela, E. Snelson, and O. Williams: *Sensible Priors for Sparse Bayesian Learning*. Microsoft Research Technical Report #MSR-TR-2007-121, 2007
- O. Williams: A Switched Gaussian Process for Estimating Disparity and Segmentation in Binocular Stereo. Advances in Neural Information Processing Systems (NIPS) 19, 2007
- O. Williams and A. Fitzgibbon: *Gaussian Process Implicit Surfaces*. Gaussian Processes in Practice
- O. Williams, A. Blake and R. Cipolla: *Sparse and Semi-Supervised Visual Mapping with the S3GP*. Proc. Int. Conf. Computer Vision and Pattern Recognition (CVPR), New York USA, 2006
- O. Williams, M. Isard and J. MacCormick: *Estimating Disparity and Occlusions in Stereo Video Sequences*. Proc. Int. Conf. Computer Vision and Pattern Recognition (CVPR), San Diego USA, 2005
- O. Williams, A. Blake and R. Cipolla: *Sparse Bayesian Learning for Efficient Visual Tracking*. IEEE Trans. on Pattern Analysis and Machine Intelligence (PAMI) Pages 1292-1304 Volume 27, Number 8 August 2005
- O. Williams, A. Blake and R. Cipolla: *The Variational Ising Classifier (VIC) Algorithm for Coherently Contaminated Data*. Advances in Neural Information Processing Systems (NIPS) 17, 2005
- O. Williams, A. Blake and R. Cipolla: *A Sparse Probabilistic Learning Algorithm for Real-Time Tracking*. Proc. Int. Conf. Computer Vision (ICCV), Pages 353-360, Nice, 2003

Selected Patents

- Pose Tracking Pipeline. (Kinect)
- System for Fast, Probabilistic Skeletal Tracking. (Kinect)
- Computationally Efficient Probabilistic Linear Regression.
- Holographic Pointing Device. *Filed 3/28/2008*
- Object Recognition and Library. *Filed 3/20/2009*