

DR OLIVER WILLIAMS

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Education

- 2002-2005 PhD in Machine Learning and Computer Vision
Department of Engineering, University of Cambridge
Thesis title: *Bayesian Learning for Efficient Visual Inference*
Supervised by Roberto Cipolla (University of Cambridge) and Andrew Blake (Microsoft Research, Cambridge). 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. Quiñero 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*

Professional experience

- Jan 2015 - present Apple Inc., Cupertino, USA
Operating Systems Architect: Managing a cross-functional team to design, prototype, and evaluate architectures for future products and categories.
- 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 projects include human body tracking in Kinect for Xbox 360.
- 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 with Michael Isard and John MacCormick on 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 working with Prof. Andrew Blake. Developed a real-time face tracking system to be used in forthcoming Microsoft product.
- June 2001 Credit Suisse First Boston (UK), Canary Wharf, London
Internship within investment banking division. Included an intensive course on corporate finance and accountancy.
- June–Sept 2000 Ford Motor Co., Essex, UK
Placement in the Electrical and Electronic Systems Engineering Group. Work focussed on concern resolution such as problems at engine start and overheating. Also designed and built diagnostic tool to calibrate interface between alternator and engine management system.
- June–September 1999 Visteon Automotive Systems (a division of Ford Motor Co.), Essex, UK
Placement in Climate Control Systems Engineering. Three-month project created a novel way of studying windshield-demisting performance using infrared thermography, the results of which have led to design changes on subsequent vehicles.
- September 1997 – September 1998 Gap Year with Ford Motor Co.
- Recruitment Department, Essex, UK
 - Application of Engineering Techniques Course, Swansea, UK
 - Process Engineering, Swansea, UK
 - Body Process Engineering, Southampton, UK