

Tomas Pfister

Education

- 2011– **University of Oxford, *PhD Engineering Science (computer vision)***.
Mar 2015 ◦ Supervisor: Prof. Andrew Zisserman. ◦ Topics: Human pose estimation; deep learning; automatic sign language translation.
- 2007–2010 **University of Cambridge, *BA (Hons) Computer Science***, class 1 (top grade).
◦ Selected courses: Algorithms, Business studies, Computer vision, E-commerce, Software engineering.
◦ Dissertation topic: Automatic emotion detection from speech.

Work Experience

- Sep 2013 – **Engineering Lead, *Wakelet***, Manchester, UK. An exciting new startup that is disrupting search.
◦ Head of algorithms and data science for a 15-person, £1M funded startup.
◦ Helped define the product vision and strategy; researched markets and competitors.
◦ Proposed new product features and improvements based on user needs and personas; identified solutions, and prototyped and tested them on users.
◦ Led and worked with five engineers to build and launch new features.
◦ Devised and developed new algorithms for search, recommender systems and content quality prediction.
- Aug 2009 – **Chief Technology Officer (CTO), *SJR Host***, Finland. Website and virtual server hosting.
◦ CTO of a 4-person web hosting startup with a 60 server data centre and £300K annual revenue.
◦ Formulated business (branding, marketing, financing) and technical (system architecture) strategies.
◦ 24/7 final point of contact for emergencies (carrying full responsibility of operations and data centre).
◦ Led, supported and guided two full-time staff in person, by phone and e-mail.
◦ Sold products to customers and provided customer service by e-mail and phone.
- July 2014 – **Data Science & Product Consultant, *Cytora***, London, UK. Automatic political risk analysis.
◦ Advised CTO and team on product & big data problems involved in automatic political risk prediction.
◦ Devised new product ideas and machine learning & natural language processing algorithms.
- Jan 2012 – **HPC Consultant, *University of Oxford***.
◦ Advising Oxford on High Performance Computing for a £500K worth, 500 CPU core supercomputer.
◦ Purchased, configured and maintained the supercomputer cluster.
- May 2006 – **Closed Beta Tester, *Skype***, Prague; Athens; London.
◦ Wrote software for testing Skype and related devices.
- Summer 2011 **Engineering Intern, *Google***, Mountain View, CA.
◦ Software engineering in database systems (including a Python load testing tool, and thousands of lines of open-sourced MySQL C code that are available online).
◦ YouTube computer vision research for a new project using the Google's vision framework & MapReduce.
- Sep 2010 – Jul 2011 **Computer Vision Researcher, *University of Oulu***, Machine Vision Group.
◦ Developed the first system for automatically recognising facial micro-expressions (used for lie detection).
◦ Method patented & work published in International Conference on Computer Vision.
- Sep 2009 – Mar 2010 **Machine Learning Researcher, *University of Cambridge***, Computer Lab.
◦ Developed a method for real-time prediction of emotions from speech & analysis of public speaking skills.
- Summer 2009 **Human Computer Interaction Researcher, *University of Cambridge***, Computer Lab.
◦ Developed an open-source robot controller that was demoed at the HCI'09 conference and in BBC News.
- Jan 2004 – Jul 2009 **Chief Architect, *SJR Host***, Finland.
◦ Engineered large-scale software and systems for the company and its clients.
- Summer 2008 **Software Engineer Intern, *AlertMe***, Cambridge, UK. Security and energy monitoring startup.
◦ Persuaded management to save costs and increase productivity by virtualising company servers.
◦ Resolved a time-critical database scaling issue that had caused their main product to go offline.
◦ Implemented and documented database support in their C backend.
◦ Redesigned their PHP customer control panel, which lead to accelerated customer service response times.

May 2004–Jun 2006

Java Project Maintainer and Developer, *TWcore*, online.

- Maintained a large open-source Java bot project for an online game with over 10,000 active users.
- Responsible of the security, performance and overall quality of the product.
- Co-ordinated tasks between developers and encouraged them to help them stay motivated.
- Solved technical and social issues arising from open-source collaborations.

Jun 2004 – May 2006

Software Engineer, *Star Pointers & Ekolab*, Finland.

- Designed and developed two multilingual company websites from scratch using LAMP.

Oct 2005 – Jun 2006

Software Engineer and Systems Consultant, *Amnesty International*, Helsinki, Finland.

- Advised Amnesty's Finland branch on £10k technology investments.
- Developed an online anti domestic violence database web app using LAMP.

Feb 2004 – May 2006

Software Engineer, *Mattlidens School*, Finland.

- Designed, coded and maintained a student absence tracker webapp built using PHP/MySQL.
- Designed a new school website and wrote its content management system from scratch.

Jan 2001 – Jun 2004

System Engineer, *SJR Host*, Finland.

- The main system administrator of a data centre; solely responsible of all hardware and software.

Skills & Languages

Product	Product management and leadership experience in 3 successful startups.	Systems	14 years of professional experience in UNIX systems, networks and system architectures.
Programming	<ul style="list-style-type: none">◦ Strong: Python, C++, Matlab◦ Intermediate: Java, PHP	Big data	4 years experience in computer vision, machine learning & recently deep learning.
Languages	<i>Fluent:</i> English, Swedish, Finnish. <i>Intermediate:</i> German, Chinese.		

Selected Awards

- 2011–2015 ◦ EPSRC Research Studentship and Centenary Year Graduate Scholarship at University of Oxford.
- 2011–2015 ◦ 15 personal research awards for pioneering computer vision work.
- 2012 ◦ Finalist at the TATA Idea Idol Startup Business Plan competition organised by Oxford Entrepreneurs.
- 2012 ◦ Best Paper honourable mention and Best Video award in British Machine Vision Conference.
- 2011 ◦ € 250,000 in research funding from the Finnish Funding Agency for Technology and Innovation.
- 2010 ◦ Cambridge Computer Lab's nomination for prestigious European Student of the Year award.
- 2010 ◦ Gonville & Caius College Cambridge scholar, Outstanding Academic Achievement award.
- 2007–2010 ◦ Cambridge European Trust scholar.
- 2007 ◦ Academy of Finland "Viksu Outstanding Dissertation" award.
- 2007 ◦ Finnish Technology Industry's prize for top ranking in International Baccalaureate Maths Exam.

Selected Patents & Publications

- [1] T. Pfister et al, "Web-based social content aggregation and discovery facility." International Patent, 2014.
- [2] T. Pfister, J. Charles, and A. Zisserman, "Domain-adaptive discriminative one-shot learning of gestures," in *European Conference on Computer Vision (ECCV)*, 2014.
- [3] T. Pfister et al, "Automated recognition algorithm for detecting facial expressions." US Patent, 2012.
- [4] T. Pfister, J. Charles, M. Everingham, and A. Zisserman, "Automatic and efficient long term arm and hand tracking for continuous sign language TV broadcasts," in *British Machine Vision Conference (BMVC)*, 2012.
- [5] T. Pfister, X. Li, G. Zhao, and M. Pietikäinen, "Recognising spontaneous facial micro-expressions," in *International Conference on Computer Vision (ICCV)*, 2011. **Most remembered poster**.

Positions of Responsibility & Interests

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| Positions | <ul style="list-style-type: none">◦ Teaching assistant for University of Oxford's Engineering Science C++ practicals 2012–2014.◦ Governing Body student representative for Wolfson College, Oxford 2012–2014.◦ Reviewer for top computer vision conferences (CVPR, ECCV, ICCV).◦ Represented Computer Science undergrads on the Cambridge Computer Lab Faculty Board 2008–2009.◦ Organised the first and highly successful International Freshers' Week as the international representative for Gonville & Caius College in Cambridge, and voiced students' concerns for the JCR committee. |
| Interests | <ul style="list-style-type: none">◦ Flying (training for Private Pilots License), rowing, basketball. |