

CONTACT DETAILS

Department: Department of Engineering
University of Cambridge
Trumpington Street
Cambridge CB2 1PZ, UK

Tel: +44 (0)1223 748 531
Email: zoubin@eng.cam.ac.uk
WWW: <http://learning.eng.cam.ac.uk/zoubin/>

PRINCIPAL APPOINTMENTS

Chief Scientist, Mar 2017–present
Uber

Professor of Information Engineering, Jan 2006–present
Department of Engineering,
University of Cambridge, UK

Turing Fellow, Mar 2017–present
Alan Turing Institute for Data Science,
London, UK

Deputy Academic Director, Oct 2016–present
Leverhulme Centre for the Future of Intelligence, UK

Fellow, Oct 2009–present
St John's College,
Cambridge, UK

OTHER APPOINTMENTS

Adjunct Faculty, Jan 2006–present
Gatsby Computational Neuroscience Unit,
University College London, UK

EDUCATION

Ph.D. in Cognitive Neuroscience, 1995. Department of Brain and Cognitive Sciences
Massachusetts Institute of Technology, USA
Dissertation: *Computation and Psychophysics of Sensorimotor Integration*
Supervisors: Prof Michael I. Jordan (primary) and Prof Tomaso Poggio (secondary)

B.A. *summa cum laude* in Cognitive Science, 1990
Minor in Mathematics. Phi Beta Kappa
University of Pennsylvania, USA

B.S.Eng. *summa cum laude* in Computer Science and Engineering, 1990
University of Pennsylvania, USA

PROFESSIONAL HISTORY

Co-Director, Dec 2016–March 2017

Uber AI Labs

Cambridge University Liaison Director, Nov 2015–Feb 2017

Alan Turing Institute for Data Science,
London, UK

Co-Founder and Chief Scientific Officer, May 2015–Dec 2016

Geometric Intelligence (acquired by Uber in 2016), NYC, USA

Visiting Professor June 2013

Wrocław University of Technology, Poland

Associate Research Professor, Apr 2003–Jul 2012

School of Computer Science, Carnegie Mellon University, USA

Adjunct Professor, 2007–2010

Department of Computer Science & Engineering,
Pohang University of Science and Technology (POSTECH), South Korea

Reader in Machine Learning, Oct 2003–Jan 2006

Gatsby Computational Neuroscience Unit, University College London, UK

Honorary Lecturer, Sep 1998–Jan 2006

Department of Computer Science and Department of Psychology, University College London, UK

Lecturer, Sep 1998–Sep 2003

Gatsby Computational Neuroscience Unit, University College London, UK

Visiting Fellow, February, 2003,

Computer Sciences Laboratory, Research School of Information Sciences and Engineering,
Australian National University, Australia

Visiting Associate Professor, Jan 2002–May 2002

Center for Automated Learning and Discovery, School of Computer Science,
Carnegie Mellon University, USA

Visiting Researcher, September, 1999,

NTT Computer Science Labs, Kyoto, Japan

Postdoctoral Fellow, Sep 1995–Sep 1998

Department of Computer Science, University of Toronto, Canada

Research Assistant, Summer 1991

Learning Systems Group,
Siemens Corporate Research, USA

Senior Staff Technologist, Summer 1989, 1990

Artificial Intelligence and Information Science Research Group,
Bell Communications Research, USA

Research Assistant, 1987–1990

University of Pennsylvania, Language, Information, and Computation Lab, Philadelphia, PA, USA

EDITORIAL, CONFERENCE, AND PEER REVIEWING ACTIVITIES

Editorial Board Memberships:

IEEE Pattern Analysis and Machine Intelligence (PAMI),¹ Associate Editor 2005–2007

¹Ranked #1 among 209 Electrical Engineering and #5 among 347 Computer Science titles in 2004 Journal Citation Report.

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| Associate Editor-in-Chief | 2007-2011 |
| <i>Cambridge Series in Statistical and Probabilistic Mathematics</i> , Series Editor | 2009-present |
| <i>Foundations and Trends in Machine Learning</i> , Editorial Board Member, | 2007-2010 |
| <i>Annals of Statistics</i> , Associate Editor | 2007-2011 |
| <i>Journal of Machine Learning Research</i> ² , Action Editor (2006-) | 2000-2011 |
| <i>Journal of Artificial Intelligence Research</i> , Editorial Board Member, | 2006-2009 |
| <i>Springer Encyclopedia of Machine Learning</i> , Editorial Board Member, | 2005-2010 |
| <i>Machine Learning</i> , ³ Editorial Board Member (2000-2001), re-joined as Editor | 2005-2011 |
| <i>Bayesian Analysis</i> , Associate Editor | 2004-2010 |
| <i>Neural Computing Surveys</i> | 1998-2006 |

Scientific Advisory Boards:

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|---|--------------|
| Cambridge Computational Biology Institute, Scientific Advisory Board, | 2017-present |
| Invenia Labs, Technical Advisor, | 2016-present |
| BridgeU, Advisor, | 2016-present |
| Informetis, Technical Advisor, | 2015-present |
| Cambridge Capital Management, Advisor, | 2014-present |
| Tractable, Advisor, | 2015-present |
| Swhere, Advisor, | 2014-present |
| Entrepreneur First, Science Partner, | 2015-present |
| NIPS Foundation, Board Member, | 2015-present |
| Echobox, Advisor, | 2014-present |
| VocalIQ (acquired by Apple), Advisor, | 2014-2015 |
| Opera Solutions Scientific Advisory Board, | 2011-2015 |
| Microsoft Research Cambridge, Technical Advisory Board, | 2006-2014 |
| Max-Planck Institute for Intelligent Systems, Stuttgart, Germany | 2012-2017 |
| INRIA Evaluation Board, Cognitive Systems, France | 2007 |
| Max-Planck Institute for Biological Cybernetics, Tübingen, Germany | 2006-2010 |
| Austrian Research Center Seibersdorf, | 2005-2010 |
| International Machine Learning Society, Board Member, | 2006-2011 |

Conference and Workshop Co-organiser:

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| Sackler Forum (joint mtg of Royal Society and National Academy of Sciences), DC, | 2017 |
| Data, Inference and Learning (DALI), Tenerife | 2017 |
| NIPS Workshop on “AI for Data Science”, | 2016 |
| NIPS Workshop on “Bayesian Deep Learning”, | 2016 |
| Data, Inference and Learning (DALI), Sestri Levante | 2016 |
| Information, Inference and Learning Symposium, Cambridge | 2016 |
| ATI Scoping Workshop on Probabilistic Programming | 2016 |
| Artificial Intelligence and Machine Learning in Cambridge | 2016 |
| Workshop on Black Box methods for Bayesian Inference and Learning, NIPS, Montreal, | 2015 |
| Bayesian methods for networks, Newton Institute, 2016 | |
| Data, Inference and Learning (DALI), La Palma | 2015 |
| General Chair, Neural Information Processing Systems, Montreal | 2014 |
| Workshop on Bayesian Optimisation, NIPS, Montreal | 2014 |
| Program Chair, Neural Information Processing Systems, Lake Tahoe, USA | 2013 |
| Scientific Committee, 9th Conference on Bayesian Nonparametrics Amsterdam | 2013 |
| Workshop on Copulas and Machine Learning, NIPS, Granada, | 2011 |
| General Chair, International Conference on Machine Learning, USA | 2011 |
| Workshop on Transfer learning by learning rich generative models, NIPS, Vancouver, | 2010 |
| Machine Learning Summer School, Cambridge | 2009 |
| Workshop on Nonparametric Bayes, NIPS, Vancouver | 2009 |

²Ranked #2 among 347 Computer Science titles in the 2004 Journal Citation Report

³Ranked #12 among 347 Computer Science titles in the 2004 Journal Citation Report

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| EPSRC Symposium on Information Extraction from Complex Data Sets, Warwick | 2009 |
| Workshop on Nonparametric Bayes, ICML/UAI/COLT, Helsinki, Finland | 2008 |
| Program Chair, International Conference on Machine Learning, Oregon, USA | 2007 |
| Open Problems in Gaussian Processes for Machine Learning Workshop, NIPS, Canada, | 2005 |
| Program Co-Chair, Intern. Work. on AI & Statistics (AISTATS), Barbados, | 2005 |
| Learning Theoretic and Bayesian Inductive Principles, London, UK, | 2004 |
| Unreal Data: Learning from Nonvectorial Data, NIPS, Whistler, BC, Canada, | 2002 |
| Inference and Learning in Graphical Models, NIPS, Breckenridge, CO, USA, | 1997 |

Conference Program Committee Member:

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| Case Studies in Bayesian Analysis and Machine Learning | 2009 |
| Workshop on Learning with Nonparametric Bayesian Methods, ICML | 2006 |
| Uncertainty in Artificial Intelligence (UAI): | |
| 2001, 2002, 2003, 2005, Senior Programme Committee | 2006 |
| IEEE Conference on Computer Vision and Pattern Recognition (CVPR): | Area Chair 2006 |
| International Conference on Machine Learning (ICML): | |
| 1998, 2000, Area Chair 2004, Area Chair 2005, 2006, Program Chair 2007, 2008, Area Chair | 2012 |
| International Joint Conference on AI (IJCAI): | 2005 |
| Workshop on "Exploiting Unlabeled Data In Machine Learning and Data Mining", ICML: | 2003 |
| Neural Information Processing Systems (NIPS): | |
| Area Chair 1999, Area Chair 2000, Publications Chair 2001, Publicity Chair | 2002 |
| Artificial Intelligence and Statistics Conference: | 2001, 2007 |
| European Conference on Machine Learning, Instance Selection Workshop: | 2001 |
| American Association for Artificial Intelligence: | 2000 |
| Turkish Symposium on Artificial Intelligence and Neural Networks: | 1996 |

Grants Reviewed for: U.S. National Science Foundation (Statistics; Circuits and Signal Processing), Canadian Natural Sciences and Engineering Research Council (Computer Science), U.K. National Endowment for Science, Technology and the Arts, U.K. Engineering and Physical Sciences Research Council (Peer Review College Member). Israel-U.S.A. Binational Science Foundation. Mathematics of Information Technology and Complex Systems (Canada). ICTP Grants for Third World Scientific Meetings (UNESCO/Italy). Council of Physical Sciences of the Netherlands Organization for Scientific Research (NWO).

Journal Articles Reviewed for: *Bayesian Analysis, BMC Bioinformatics, Cognitive Science, Exp. Brain Res., IEEE Trans. Biomed. Eng., IEEE Trans. Comp. Biol. and Bioinformatics, IEEE Trans. on Evol. Comp., IEEE Trans. Pat. Anal. & Machine Intell., IEEE Trans. on Neural Networks, IEEE Trans. in Speech & Audio Proc., J. Artif. Intell. Res., Int. J. Pattern Recognition and Artificial Intelligence, Iranian J. of Elect. and Comp. Eng. J. Exp. Psychol: Human Percept. & Perform., J. Machine Learn. Res., Machine Learning, Nature, Nature Neuroscience, Neural Computation, Neural Networks, Neurocomputing, NeuroImage, Proceedings of the National Academy of Sciences, Psychometrika, VLSI Signal Proc. Sys.*

Conference Papers Reviewed for: Annual Conference of the Cognitive Science Society, Neural Information Processing Systems, International Conference on Artificial Neural Networks, International Joint Conference on Artificial Intelligence (outstanding reviewer award), Workshop on AI and Statistics (outstanding reviewer award).

Invited Participant:

Isaac Newton Institute for Mathematical Sciences, Statistical Theory and Methods for Complex, High-Dimensional Data Programme, 2008, Cambridge, UK
 Dagstuhl International Research Center for Computer Science, 2001, Wadern, Germany
 Dagstuhl International Research Center for Computer Science, 1999, Wadern, Germany
 Isaac Newton Institute for Mathematical Sciences, Neural Networks and Machine Learning Programme, 1997 Cambridge, UK

Consultancies:

FX Concepts, USA
DataPath, USA
Microsoft Research Cambridge, UK
Glaxo-Wellcome Medicines Research Laboratories, UK
NTT Computer Science Labs, JAPAN

PRIZES, AWARDS AND OTHER HONOURS

ICML 2017 Best Paper Honourable Mention to “Lost Relatives of the Gumbel Trick.”
Top Ten Most Influential Scholars in Machine Learning (2016) <https://aminer.org/mostinfluentialscholar/ml>
Elected Fellow of the Royal Society, 2015
2015 NIPS Posner Lecture
2013 Google Focused Research Award
2013 ICML Classic Paper Prize for our paper from ICML 2003 on “Semi-supervised learning using gaussian fields and harmonic functions”
Best Student Paper Award, 27th Conference on Uncertainty in Artificial Intelligence (UAI) 2011
Best Paper Award, International Conference on Artificial Intelligence and Statistics, 2010
Best Paper Honorable Mention, International Conference on Machine Learning, 2009
Microsoft (2010, 2006) and Google (2008,2013) Research Awards (see below under Grants)
Innovation Award for Excellence in Strategic Research. Ontario ITRC (with G. Hinton), 1996
McDonnell-Pew Fellowship, Massachusetts Institute of Technology, 1990–1995
Dean’s Scholar Award, University of Pennsylvania, 1988
University Scholar, University of Pennsylvania, 1986
25th Anniversary Scholarship, American School of Madrid, 1986

GRANTS

Samsung Electronics grant: “Probabilistic machine learning for device data analysis”, 2017-2020 £ 1,366,528 (co PI)
NTT Grant, for “Learning intrinsic structures from large-scale complex multi-modal data”, 2017-2018, £ 30,000
Google Award: \$12,438 for “Tensor Flow Training at University of Cambridge”
ARM Research Fellowship in Machine Learning, 2016-2019, £ 390,000
NTT Grant, “Probabilistic generative models for latent structures”, 2016-2017, £ 17,000
Facebook Unrestricted Award, 2016, \$100,000
Marie Slodowska Curie International Fellowship (PI, fellowship to Dr Francisco Rodriguez Ruiz) “Probabilistic modelling of electronic health records” €269,857.80
Leverhulme Centre for the Future of Intelligence (co-I), 2016-2021 £ 10,000,000
Microsoft Donation, 2015 £ 585,000

EPSRC Grant EP/N014162/1 “Deep Probabilistic Models for Making Sense of Unstructured Data” , 2016-2019 £ 974,162 (co-I)

Facebook Unrestricted Award, 2015, \$100,000

Future of Life Institute award for “An Investigation of Self-Policing AI Agents” (co-investigator with Adrian Weller), 2015, \$50,000

NTT grant “Learning Latent Structure” 2015 £ 17,000

Facebook Unrestricted Award, 2014, \$100,000

Amazon AWS in Education Research Grant Award, 2013, \$100,000.

NTT “Probabilistic Generative Models for learning latent structure from large-scale and complex data”, 2014-2015, £ 22,000

Facebook Unrestricted Award, 2013, \$100,000

Google Focused Research Award for the “Automated Statistician”, 2013, \$750,000

DARPA PPAML Venture “A general purpose probabilistic programming platform with efficient stochastic inference”, 2013-2017, \$638,488

Google European Doctoral Fellowship in Machine Learning (2012) to Yarin Gal, £ 108,000

EPSRC “Autonomous behaviour and learning in an uncertain world”, 2012-2017, £ 849,033 (co-I)

Microsoft Research Award “Learning to Answer Natural Language Database Queries”, 2012, \$100,000

Royal Society Newton International Fellowship to Novi Quadrianto, “Nonparametric Bayesian Statistics for the Internet: Models and Algorithms” 2012-2013, £ 99,000

Royal Society Newton International Fellowship to Daniel Roy, “Probabilistic Programming and Random Data Structures: Theory and Algorithms” 2011-2013, £ 99,000

Infosys “Machine Learning Models for Market Basket Analysis”, 2011-2013, \$296,653

EPSRC “Advanced Bayesian Computation for Cross-Disciplinary Research” (EP/I036575/1), 2011-2015, £ 1,158,512

Google European Doctoral Fellowship (2010) “Advanced Machine Learning for Interactive Search”, £ 75,000

Microsoft Research Award (2010), “Probabilistic Knowledge Bases” \$ 129,580

EPSRC “Advanced Algorithms for Neural Prosthetic Systems” (EP/H019472/1), 2010-2013, £ 398,050

International Foreign Exchange Concepts, “Machine Learning Methods for High Frequency Foreign Exchange Trading”, 2009-2012, £ 117,426.

Google Research Award (2008), “Google-scale non-parametric Bayesian Machine Learning”, \$ 85,000

DataPath, “Probabilistic Models for Monitoring and Control of Distributed Systems”, 2008-2011, £ 136,605 (\$ 281,407)

Microsoft Research PhD Scholarship, “Machine learning models for large-scale systems and networks”, 2008-2011, £ 66,000

EPSRC “Managing the Data Explosion in Post-Genomic Biology with Fast Bayesian Computational Methods” (EP/F027400/1), 2008-2011, £ 257,455

EPSRC “Graphical Models for Relational Data: New Challenges and Solutions” (EP/F026641/1), 2008-2009, £ 190,576

Cambridge-MIT Institute, “Machine Learning for Autonomous Robots” (2007), £ 4,000.

Microsoft Live Labs Research Award (2006), \$ 50,000.

Microsoft Research Gift (2006), £ 10,000.

Gatsby Charitable Foundation: Neural Computation grant to G Hinton (Director), P Dayan, Z Li, and Z Ghahramani (1998-2008). About £10,000,000.

U.S. DARPA Perceptive Agent that Learns (PAL) program, “Cognitive Agent that Learns and Organizes” (CALO). (2003-2008) Subcontract from SRI to CMU. \$250,000 so far in direct costs to my group at CMU.

E.U. PASCAL Network of Excellence on “Pattern Analysis, Statistical Modeling and Computational Learning” (2003-2007) I coordinate the UCL site, which is one of 57 sites sharing euro 5,440,000 over 5 years.

U.S. National Institute of Health (NIH), Machine Learning Techniques for Protein Fold and Remote Homology Recognition. 2002-2007. \$286,258 direct costs to UCL. Co-applicant.

The Wellcome Trust, Modularity of Learning in Movement Control, 2000-2003. Research grant to support Alex Korenberg’s PhD studentship £13,580.

EPSRC Life Sciences Interface Network: Processing and representation of speech and complex sounds (one of 20 members, 1999-2002, £50,000, headed by Prof. Chris Darwin, Sussex)

EU Marie Curie Training Site, Institute of Movement Neuroscience, 2000-2004 (one of 10 participants, 2000-2003, €240,000)

MEDIA COVERAGE

1997 Canadian Business Technology “Building a Better Brain” <http://mlg.eng.cam.ac.uk/zoubin/misc/cover2.jpg>

2014 BBC Radio 4 interview on “Deep Learning” <http://www.bbc.co.uk/programmes/p01nph8t>

2014 Delo (in Slovenian) “Zoubin Ghahramani: Podatki so naravnost eksplozirali” <http://www.delo.si/znanje/znanost/h/napredek-znanstvenih-spoznanj-z-novimi-orodji.html>

2014 10 Machine Learning Experts you Need to Know (2014) <http://dataconomy.com/2014/09/10-machine-learning-experts-you-need-to-know/>

2015 MIT Technology Review “Automating the Data Scientists” <http://www.technologyreview.com/news/535041/automating-the-data-scientists/>

2015 Significance, Royal Statistical Society (Feb 2015) “The Automatic Statistician” and “How machines learned to think statistically” <http://onlinelibrary.wiley.com/doi/10.1111/j.1740-9713.2015.00796.x/abstract>

2015 BBC Radio 4 Inside Science <http://www.bbc.co.uk/programmes/b053bxy1>

2015 BBC World Service, The Forum on “Deep Learning” (45 minutes) <http://www.bbc.co.uk/programmes/p02kmt1#auto>

2015 Talking Machines Podcast, <http://www.thetalkingmachines.com/>

2016 The Times, Jan 1, 2016, “March of machines to save the world”

2016 BBC1 TV evening news, Jan 27, 2016 “Google achieves AI ‘breakthrough’ by beating Go champion” <http://www.bbc.co.uk/news/technology-35420579>

2016 BBC Radio Cambridgeshire Breakfast Show, Jan 28, 2016 <http://www.bbc.co.uk/programmes/p03f8hz9#play>

2016 The Register, Sept 21, 2016 http://www.theregister.co.uk/2016/09/21/ai_skepticism_analysis/

- 2016 Nature, News feature “Can we open the black box of AI?” Oct 5, 2016 <http://www.nature.com/news/can-we-open-the-black-box-of-ai-1.20731>
- 2016 Cambridge Research Horizons “Computer Says YES (but is it right?)” <http://www.cam.ac.uk/research/features/artificial-intelligence-computer-says-yes-but-is-it-right>
- 2016 BBC World Service, The Forum on “Do we need Artificial Intelligence?” (40 minutes) <http://www.bbc.co.uk/programmes/p04c7kdx>
- 2016 Coverage of Uber acquisition of Geometric Intelligence, a company I co-founded, and of the formation of Uber AI Labs, a unit I co-Direct.
- New York Times: Uber Bets on Artificial Intelligence With Acquisition and New Lab <http://www.nytimes.com/2016/12/05/technology/uber-bets-on-artificial-intelligence-with-acquisition-and-new-lab.html>
 - Wall Street Journal: Uber in Artificial-Intelligence Drive After Buying Startup <http://www.wsj.com/articles/uber-in-artificial-intelligence-drive-after-buying-startup-1480942804>
 - WIRED: Uber Buys a Mysterious Startup to Make Itself an AI Company <https://www.wired.com/2016/12/uber-buys-mysterious-startup-make-ai-company/>
 - MIT Tech Review: Uber Launches an AI Lab <https://www.technologyreview.com/s/603016/uber-launches-an-ai-lab/>
 - BBC: Uber launches artificial intelligence lab <http://www.bbc.com/news/technology-38207291>
 - Bloomberg: Uber Creates AI Lab, Buying Startup Geometric Intelligence <https://www.bloomberg.com/news/articles/2016-12-05/uber-creates-ai-lab-buying-startup-geometric-intelligence>
 - Also: VentureBeat: Uber acqui-hires Geometric Intelligence to launch its own inhouse AI lab
TechPortal: Uber acquires Geometric Intelligence, creates Uber AI research labs
TechCrunch: Uber acquires Geometric Intelligence to create an AI lab
The Verge: Uber launches its own AI lab to make food deliveries faster and self-driving cars better
Quartz: Ubers new AI team is looking for the shortest route to self-driving cars
Buzzfeed: Uber just bought an AI startup to make its self-driving cars smarter
Fortune: Uber just bought a startup youve never heard of. Heres why thats important.
Business Insider: Uber just bought a startup to help launch the companys first artificial intelligence lab
Engadget: Uber creates an AI lab to help fuel its self-driving dreams
Tech Republic: With the launch of Uber AI Labs, ride-sharing giant aims to expand AI research beyond autonomous cars
ZDNet: Uber snaps up AI startup Geometric Intelligence, forms Uber AI Labs
Agence France-Presse: Uber steps up efforts on artificial intelligence
 - Wired: AI Is About to Learn More Like Humans with a Little Uncertainty. 2017 <https://www.wired.com/2017/03/ai-is-about-to-learn-more-like-humans-with-a-little-uncertainty/>
 - Appointment as Uber’s Chief Scientist: <https://newsroom.uber.com/announcing-zoubin-ghahramani-as-ubers-chief-scientist/> <http://fortune.com/2017/03/16/uber-chief-scientist/> <http://uk.businessinsider.com/uber-hires-cambridge-artificial-intelligence-guru-zoubin-ghahramani-chief-scientist-2017-3> <https://venturebeat.com/2017/03/15/uber-appoints-zoubin-ghahramani-as-chief-scientist-3-months-after-acquiring-his-startup-geometric-intelligence/>
 - Wired: 2017 Stars of Tomorrow http://www.wired.co.uk/article/wireds-2017-smart-list?mc_cid=f6e184479

INVITED TALKS (1996–)

2017

Founders Forum, London 2017
Microsoft AI Summer School (keynote), Cambridge
China Executive Leadership Programme, Cambridge
Entrepreneur Fellows Programme, Tsinghua University - Cambridge
Amazon Machine Learning Conference (keynote), Seattle, 2017
SIAM-IMA Annual Cambridge Conference (plenary), Cambridge 2017
BT, Adastral Park, 2017
Uber Machine Learning Conference (joint keynote), San Francisco, 2017
Advances in Data Science, Manchester, 2017
Institute of Geophysics, Polish Academy of Sciences, Warsaw 2017
Ørsted Lecture, Technical University of Denmark
Strachey Lecture, Distinguished Lecture in Computer Science, Oxford University, UK
Sackler Forum, Joint meeting of US National Academy of Sciences and the Royal Society, Washington DC

2016

NIPS Royal Society Workshop, People and Machines, Barcelona, SPAIN
Keynote, Bayesian Deep Learning Workshop, NIPS, Barcelona, SPAIN
Alan Turing Institute, London UK
Cantab Capital, Cambridge UK
Keynote, Goldman Sachs Inaugural Quant Conference, London, UK
Google Tech Talk, Zürich, SWITZERLAND
London Machine Learning Meetup, London, UK
Keynote, European Conference on Machine Learning (ECML-PKDD), ITALY
Computing in Data Science, Royal Statistical Society Annual Conference, Manchester, UK
Keynote, 2016 IEEE Statistical Signal Processing Workshop, Mallorca, SPAIN
Cambridge Science Festival, Intelligence and learning in brains and machines, Cambridge UK
Invited Talk, ARM, Cambridge UK

2015

Posner Lecture (invited plenary), NIPS Conference, CANADA
CSML Workshop: Autonomous citizens: algorithms for tomorrow's society, Warwick, UK
The St John's Lecture, University of Hull, UK
Adaptive Brains and Machines Workshop, Cambridge UK
Machine Learning Summer School, Tübingen, GERMANY
Bayesian Inference for Big Data, Oxford, UK
Signal Processing with Adaptive Sparse Structured Representations Conference, UK
Royal Statistical Society, "Statistics and Data Science: closing the gap", London UK
Royal Society Meeting, "Breakthrough Science and Technology: Transforming our Future Meeting on Machine Learning", London, UK
Probabilistic Numerics Workshop, DALI Conference, SPAIN
Advances in Distributional Semantics Workshop, London, UK
Paris Machine Learning Meetup (remote talk), Paris, FRANCE
Babbage Lecture, Computer Lab, Cambridge UK
The Vocabulary of Big Data, Cambridge, UK
Intelligent Machines Meeting (keynote), Nijmegen, NETHERLANDS
Amazon Berlin, GERMANY

2014

Workshop on Deep Probabilistic Models, Sheffield, UK

- Oxford-Warwick Statistics Programme, Warwick, UK
 Cambridge Centre for Risk Studies 5th Risk Summit The Pulse of Risk: From Big Data to Business Value, UK
 Cambridge Networks Day, UK
 UCL-Duke Workshop on Sensing and Analysis of High-Dimensional Data, London, UK
 Discovery Science and Algorithmic Learning Theory (ALT) (joint-keynote), Bled, Slovenia
 Isaac Newton Institute, Workshop on Statistical Change-point Modelling, UK
 Imperial College, Department of Computing (tutorial lectures), UK
- 2013** NIPS workshop on ‘Probabilistic Models for Big Data’, Lake Tahoe, USA
 Isaac Newton Institute, Workshop on Computerised Trading at Low and High Frequency, UK
 Workshop on Big Data, Imperial College, London, UK
 Machine Learning Summer School, Tübingen, GERMANY
 NCAF Meeting, Oxford, UK
 Wrocław University of Technology (5 lectures), POLAND
 Bayesian Nonparametrics Conference, Amsterdam, NETHERLANDS
 Dept of Statistics, UCL, UK
 Gatsby Unit, UCL, UK
 Dept of Statistics, Oxford University, UK
 Mysore Park Workshop on Understanding Big Data Analytics (keynote),
 Infosys Mysore INDIA
 Xerox Research Centre India (Distinguished Lecture), Bangalore, INDIA
- 2012** ETH Zürich, SWITZERLAND
 Google Zürich, SWITZERLAND
 NIPS Workshop on Modern Nonparametric Methods in Machine Learning, Lake Tahoe USA
 NIPS Workshop on Social Networks and Social Media, Lake Tahoe, USA
 Facebook Faculty Summit, USA
 Department of Computer Science, Stanford University, USA
 Harvard University 2012 Spring Research Conference (keynote), USA
 Winton Capital Management, Oxford, UK
 Max Planck Institute for Intelligent Systems, GERMANY
 Department of Computing, Imperial College, UK
 Robotics Systems and Science (keynote), Sydney, AUSTRALIA
 Leeds Annual Statistics Research Workshop, UK
 Toyota Technological Institute, Chicago, USA
 AISTATS Conference Tutorial, Canary Islands, SPAIN
 Machine Learning Summer School, Canary Islands, SPAIN
 Royal Society Meeting on Signal Processing and Inference in the Physical Sciences, UK
 MIT Computer Science and AI Lab, USA
 MIT LIDS Student Conference (keynote), USA
 Centre for Reasoning, University of Kent, UK
- 2011** Infosys Lectures (4 lectures, webcast to IIT Madras), Bangalore, INDIA
 Dept of Computer Science, Sheffield, UK
 Xerox Research Centre Europe, Grenoble, FRANCE
 CSML Seminar, University College London, UK
 Trinity College Mathematical Society, Cambridge, UK
 Opera Solutions, San Diego, CA, USA

- Bayes 250 Conference, Edinburgh, UK
 NIPS Workshop on Preference Learning, Granada, SPAIN
 NIPS Workshop on "Bayesian nonparametrics. Hope or hype?", Granada, SPAIN
 Machine Learning Summer School, SINGAPORE
 Microsoft Software Summit, Paris, FRANCE
 Dept of Informatics, University of Edinburgh, UK
 Opera Solutions, London, UK
- 2010** Machine Learning for Signal Processing (plenary), Kittila, FINLAND
 NIPS Sam Roweis Symposium, Vancouver, CANADA
 Dept of Computing, Distinguished Seminar, Imperial College London, UK
 NIPS Workshop on Transfer Learning Via Rich Generative Models, CANADA
 European Research Network on System Identification, Cambridge UK
 EURANDOM Workshop on Bayesian Nonparametric Statistics (3 lectures), NETHERLANDS
 International Conference on Machine Learning and Applications (keynote), Washington DC, USA
 Dept of Computer Science, University of York, UK
 Dept of Engineering, Oxford University, UK
 Cancer Research UK, Cambridge, UK
 CEU 2010 Summer School: Beliefs and Decisions of Mind and Machines, HUNGARY
 Fourteenth Conference on Computational Natural Language Learning, Uppsala, SWEDEN
 ISBA Valencia Meeting, (invited discussant), SPAIN
- 2009** INSPIRE 2009 Conference on Statistics and Signal Processing, Imperial College London, (plenary speaker), UK
 Unilever Centre for Molecular Informatics, Dept of Chemistry, Cambridge University, UK
 Causality Group, Statistical Laboratory, Cambridge University, UK
 Bayesian Nonparametrics Workshop, Turin, ITALY
 International Computer Vision Summer School, Sicily, ITALY
 Deep Learning Workshop, Gatsby Unit, UK
- 2008** Dept of Statistics, Harvard University, USA
 Dept of Electrical Engineering and Computer Science, MIT, USA
 Dept of Electrical and Computer Engineering, Northeastern University, USA
 Dept of Computing, Imperial College, UK
 Learning and Inference in Computational Systems Biology Workshop, Warwick, UK
 Inference and Estimation in Probabilistic Time-Series Models, Isaac Newton Institute, UK
 European Conference on Artificial Intelligence (keynote), GREECE
 Dept of Computer Science, ETH Zürich, SWITZERLAND
 Radboud University of Nijmegen, NETHERLANDS
 Dept of Computer Science, University of Toronto, CANADA
 AT&T Shannon Labs, USA
 Dept of Computer Science, Princeton University, USA
 Yahoo! New York, USA
 Dept of Computer Science (Distinguished Speaker), Columbia University, USA
 2008 EPSRC Winter School: Mathematics For Data Modelling, Sheffield University, UK
 Isaac Newton Institute for Mathematical Sciences, Cambridge, UK
 Horizon Meeting, Thinking Machine? University of Cambridge, UK
 Machine Learning, Carnegie Mellon University, USA

- 2007** Department of Computer Science, Brown University, USA
 Royal Bank of Scotland, London, UK
 Machine Learning Summer School, Tübingen, Germany
 IPAM Summer School, Probabilistic Models of Cognition, Los Angeles, USA
 Department of Statistics, University of Leeds, UK
 Department of Computing Science, University of Glasgow, UK
 Department of Engineering Mathematics, University of Bristol, UK
 Cambridge Statistics Discussion Group, University of Cambridge, UK
- 2006** Statistical Laboratory, University of Cambridge, UK
 Yahoo! Inc, New York, USA
 Institute of Mathematical Statistics Annual Meeting, Graphical Models Workshop, Rio, BRAZIL
 Merrill Lynch, London, UK
 MRC Cognition and Brain Sciences Unit, Cambridge, UK
 Cambridge Computational Biology Annual Symposium, Cambridge, UK
 Newton Institute Workshop, Recent Advances in Monte Carlo Based Inference, Cambridge, UK
 Bayesian Inference in Complex Stochastic Systems, Warwick, UK
 CVPR Area Chair Meeting, New York University, USA
 MaxEnt: Int. Workshop on Bayesian Inference and Maximum Entropy Methods, Paris, FRANCE
 Valencia 8: the Eighth Valencia International Meeting on Bayesian Statistics, SPAIN
 Engineering Department, Oxford University, UK
 Institute for Communicating and Collaborative Systems, University of Edinburgh, UK
- 2005** D E Shaw & Co, New York, USA
 Empirical Inference Group, Max Planck Institute for Biological Cybernetics, GERMANY
 Gaussian Process Round Table, Sheffield, UK
 Machine Learning Summer School, TTI, Chicago, USA
 Joint Symposium on Computational Intelligence, Jeju Island, KOREA
 Pohang University of Science and Technology (POSTECH), KOREA
 Korea Advanced Institute of Science and Technology (KAIST), KOREA,
 Engineering Department, University of Cambridge, UK
 ICML Workshop on Learning with Partially Classified Training Data, GERMANY
- 2004** Workshop on Kernels and Graphical Models, NIPS Conference, CANADA
 Workshop on Structured Data and Representations in Probabilistic Models for Categorization,
 NIPS Conference, CANADA
 Department of Mathematics and Statistics, University of Lancaster, UK
 Natural Computation Group, Dept Computer Science, University of Birmingham, UK
 Department of Biophysics, SNN Group, University of Nijmegen, NETHERLANDS
 Machine Learning Workshop, University of Sheffield, UK
 Learning 2004 Conference, Elx, SPAIN
 Neural Networks and Disordered Systems Group, Math Dept, Kings College London, UK
 Dept of Computing, Computational Bioinformatics Laboratory, Imperial College, London, UK
 Dept of Statistics, University of Kent, Canterbury, UK
 Image, Speech and Intelligent Systems (ISIS) Research Group, Univ of Southampton, UK
 Interdisciplinary Programme for Cellular Regulation, Statistics Department, University of War-
 wick, UK
- 2003** Machine Learning in Bioinformatics Conference, (invited speaker) Brussels, BELGIUM

- Empirical Inference Group, Max Planck Institute for Biological Cybernetics, GERMANY
 Annual Meeting of the Society for Mathematical Psychology, (invited speaker) Ogden, UT, USA
 Computational Sensorimotor Control Meeting, Grasse, FRANCE
 International Workshop on AI and Statistics (invited speaker), Florida, USA
 Workshop on Graph Partitioning in Vision and Machine Learning, Pittsburgh, PA, USA
 Spanish Pattern Recognition Network Meeting, Mallorca, SPAIN
 Department of Computer Science, Royal Holloway, University of London, UK
 Inference Group, Cavendish Laboratories, Cambridge University, UK
- 2002** Workshop on Modelling of Nonlinear Dynamic Systems (keynote speaker). Kildare, IRELAND
 Workshop on Neural Networks for Signal Processing (keynote speaker), SWITZERLAND
 Neural Computing Applications Forum, Sheffield, UK
 Department of Electrical Engineering and Computer Science, UC Berkeley, USA
 Department of Statistics, Carnegie Mellon University, USA
 Center for Neural Basis of Cognition, Carnegie Mellon University, USA
 Robotics Institute Retreat, Carnegie Mellon University, USA
 WhizBang! Research Labs, USA
- 2001** International Research Center for Computer Science, Schloss Dagstuhl, GERMANY
 Microsoft Research, Cambridge UK
 Department of Computer Science, University of Essex, UK
 School of Cognitive and Computing Sciences, University of Sussex, UK
- 2000** Department of Computer Science, Carnegie Mellon University, USA
 Workshop on Real-Time Modeling for Complex Learning Tasks, NIPS Conference, USA
 Department of Computer Science, Technical University of Helsinki, FINLAND
 Institute for Communicating and Collaborative Systems, University of Edinburgh, UK
 Department of Engineering, University of Cambridge, UK
 Instituto Superior Tecnico, Lisbon, PORTUGAL
 20/20 Speech, Great Malvern, UK
 NeuroCOLT Meeting on New Perspectives in the Theory of Neural Nets, Graz, AUSTRIA
 Dept. of Experimental Math. and Stat., Vienna Univ. of Econ. and Bus. Admin., AUSTRIA
 Neural Control of Movement, Computational Satellite Meeting, Key West, FL, USA
 Department of Mathematical Sciences, University of Durham, UK
 Institute for Adaptive and Neural Computation, University of Edinburgh, UK
- 1999** Department of Statistical Science, University College London, UK
 Workshop on Advanced Mean Field Methods, NIPS Conference, Breckenridge, USA
 Department of Experimental Psychology, University of Sussex, UK
 ATR Human Information Processing Research Laboratories, Kyoto, JAPAN
 NTT Computer Science Laboratory, Kyoto, JAPAN
 Neural Networks Session, Meeting of the International Statistical Institute, Helsinki, FINLAND
 International Research Center for Computer Science, Schloss Dagstuhl, GERMANY
 Department of Mathematical Modelling, Technical University of Denmark, DENMARK
 PhD Course on Computational Issues in Motor Control, Aalborg University, DENMARK
- 1998** Workshop on Statistical Theories of Cortical Function, NIPS Conference, Breckenridge, USA
 Workshop on Sequential Inference and Learning, NIPS Conference, Breckenridge, USA
 Workshop on Learning Relational Data Representations, NIPS Conference, Breckenridge, USA

- Neural Systems Group, Imperial College, London, UK
 Beckman Institute, University of Illinois, IL, USA
 Department of Electrical and Computer Engineering, McMaster University. Hamilton, CANADA
- 1997** Isaac Newton Institute for Mathematical Sciences, Cambridge, UK
 Department of Psychology, York University, Toronto, CANADA
 Annual Meeting of the Canadian Applied Math Society, Fields Institute, Toronto, CANADA
 Department of Biomedical Engineering, Johns Hopkins University, Baltimore, MD, USA
 Machine Learning and Information Retrieval, AT&T Labs – Research, Murray Hill, NJ, USA
 Workshop on Autoencoders/Autoassociators. NIPS Conference. Breckenridge, CO, USA
 Workshop on Learning Dynamical Data Structures, NIPS Conference. Breckenridge, CO, USA
 Bioinformatics Group, Glaxo-Wellcome Medicines Research. Stevenage, UK
- 1996** Department of Electrical and Computer Engineering, McMaster University. Hamilton, CANADA
 AAAI Spring Symposium on Learning Dynamical Systems. Stanford, CA, USA
 Department of Neurophysiology, Institute of Neurology. London, UK
 Department of Computer Science & Applied Mathematics. Aston University. Birmingham, UK
 Speech, Vision & Robotics Group. Department of Engineering. Cambridge University, UK
 Department of Brain and Cognitive Sciences. University of Rochester. Rochester, NY, USA
 Department of Electrical and Computer Engineering. University of Waterloo, CANADA

ACADEMIC SUPERVISION

| Postdoctoral Fellows | | | |
|------------------------------|-----------|---|--------------------|
| Name | Dates | Present Position | My role |
| Emanuel Todorov | 1999-2001 | Associate Professor, Univ Washington | supervisor |
| Hagai Attias | 1998-1999 | Chairman, Golden Metallic Inc | co-supervisor |
| Sam Roweis | 1999-2001 | Associate Professor, NYU | co-supervisor |
| Carl E Rasmussen | 2000-2002 | Professor, Univ of Cambridge | co-supervisor |
| Fernando de la Torre | 2002 | Research Associate Professor, CMU | supervisor |
| Mark Andrews | 2002-2004 | Research Fellow, UCL | co-supervisor |
| Jasvinder Kandola | 2003-2004 | Merrill Lynch | supervisor |
| Chu Wei | 2003-2005 | Yahoo! Labs | supervisor |
| Fernando Perez-Cruz | 2003-2006 | Dept Chair, Univ Carlos III, Spain, now at Amazon | supervisor |
| Ricardo Silva | 2005-2007 | Lecturer in Statistics, UCL | supervisor |
| Karsten Borgwardt | 2007-2008 | Associate Professor, ETH Zürich | supervisor |
| Mikkel Schmidt | 2008-2009 | Postdoctoral Researcher, TU Denmark | supervisor |
| Katherine Heller | 2008-2010 | Assistant Professor, Duke Univ | sponsor |
| Simon Lacoste-Julien | 2008-2011 | INRIA/CNRS/ENS, Paris | supervisor |
| Sinead Williamson | 2011 | Assistant Professor, UT Austin | supervisor |
| Peter Orbanz | 2008-2012 | Assistant Professor, Columbia University | supervisor |
| John Cunningham | 2010-2011 | Assistant Professor, Columbia University | supervisor |
| Richard Turner | 2010-2012 | Lecturer, University of Cambridge | sponsor |
| Dan Roy | 2011-2014 | Assistant Professor, University of Toronto | sponsor |
| Jose Miguel Hernandez Lobato | 2011-2014 | Postdoc, Harvard Univ | supervisor |
| Novi Quadrianto | 2012-2014 | Lecturer, University of Sussex | supervisor |
| Sara Wade | 2012-2015 | Assistant Professor, U of Warwick | supervisor |
| Yutian Chen | 2013-2015 | Google DeepMind | supervisor |
| Christian Steinruecken | 2012- | | supervisor |
| Jes Frelsen | 2013- | | supervisor |
| Matthew W. Hoffman | 2013-2015 | Google DeepMind | co-supervisor |
| Adrian Weller | 2015- | | supervisor |
| Maria Lomeli | 2016- | | supervisor |
| Yarin Gal | 2016- | | sponsor (research) |
| Alexander Matthews | 2016- | | supervisor |
| Amar Shah | 2016- | | supervisor |
| Hong Ge | 2016- | | supervisor |
| Francisco J. Rodríguez Ruiz | 2016- | | co-supervisor |

| Research Students | | | |
|--------------------------|-----------|----------------|---|
| Name | Dates | Degree | Present Position |
| Matthew J Beal | 1998-2003 | PhD | Quantitative Researcher, Citadel |
| Alexander T Korenberg | 1998-2003 | PhD | Kilburn & Strode Patent Attorneys |
| Hyun-Chul Kim | 2002-2003 | PhD (visiting) | Research Fellow, University of Surrey |
| Eric Tuttle | 2001-2003 | MPhil | Stanford Law School |
| Ed Snelson | 2002-2007 | PhD | Microsoft Research Cambridge |
| Iain A Murray | 2002-2007 | PhD | Lecturer, University of Edinburgh |
| Katherine A Heller | 2003-2008 | PhD | Postdoc, MIT, now Asst Prof, Duke |
| Arik Azran | 2005-2008 | PhD | |
| Sandy Klemm | 2007-2008 | MPhil | PhD student, MIT |
| Finale Doshi-Velez | 2007-2009 | MPhil | Asst Prof, Computer Science, Harvard |
| Pedro Ortega | 2006-2011 | PhD | Postdoctoral Fellow, UPenn |
| Shakir Mohamed | 2007-2011 | PhD | CIFAR Fellow, UBC, now at Deepmind (bought by Google) |
| Sinead Williamson | 2006-2011 | PhD | Post, CMU, now Asst Prof, UT Austin |
| Jurgen Van Gael | 2007-2011 | PhD | Data Science Director, Rangespan, (bought by Google) |
| Frederik Eaton | 2006-2011 | PhD | |
| Alex Ksikes | 2007-2014 | PhD | Elasticsearch |
| David Knowles | 2008-2012 | PhD | Postdoc, Stanford |
| Sebastien Bratieres | 2009- | PhD | |
| Yue Wu | 2009-2014 | PhD | |
| Andrew Wilson | 2009-2014 | PhD | Postdoc, CMU |
| Alex Davies | 2010-2014 | PhD | |
| Neil Houlsby | 2010-2014 | PhD | Google Zürich |
| Konstantina Palla | 2010-2014 | PhD | Postdoc, Oxford |
| James Lloyd | 2011-2015 | PhD | Qleasite |
| Creighton Heaukulani | 2011-2015 | PhD | Goldman Sachs |
| Hong Ge | 2011-2015 | PhD | Postdoc, Cambridge |
| Colorado Reed | 2012-2013 | MPhil | PhD student, UC Berkeley |
| Amar Shah | 2012- | PhD | |
| Alex Matthews | 2012- | PhD | |
| Yarin Gal | 2012- | PhD | |
| Karolina Dziugaite | 2012- | PhD | |
| Maxim Rabinovich | 2013-2014 | MPhil | PhD student, UC Berkeley |
| David Lopez-Paz | 2013-2016 | PhD | Facebook AI Research |
| Nilesh Tripuraneni | 2014-2016 | MPhil | PhD student, UC Berkeley |
| Adam Ścibior | 2014- | PhD | |
| Matej Balog | 2015- | PhD | |
| Dave Janz | 2016- | PhD | |
| John Bradshaw | 2016- | PhD | |

| Secondary Supervisor | | | | |
|-----------------------------|-------|--------|------------------|----------------------------|
| Name | Dates | Degree | Department | University |
| Antonia Hamilton | 2000 | PhD | Neurophysiology | Inst of Neurology, UCL |
| Philipp Vetter | 2001 | PhD | Neurophysiology | Inst of Neurology, UCL |
| Xiaojin Zhu | 2005 | PhD | Computer Science | Carnegie Mellon University |
| Rong Jin | 2002 | MSc | Computer Science | Carnegie Mellon University |
| Yaron Rachlin | 2002 | MSc | Computer Science | Carnegie Mellon University |
| Ruslan Salakhutdinov | 2003 | MSc | Computer Science | University of Toronto |
| Andreas Argyriou | 2008 | PhD | Computer Science | UCL |
| JaeMo Sung | 2008 | PhD | Computer Science | POSTECH, Korea |

| Primary MSc Thesis Supervision | | |
|---------------------------------------|-----------|----------|
| Name | Dates | Degree |
| Adam Pitera | 2001-2002 | MSc, UCL |
| Aliya Paracha | 2002-2003 | MSc, UCL |
| Christian Fisher | 2002-2003 | MSc, UCL |
| Andreas Argyriou | 2003-2004 | MSc, UCL |
| Anthony Demco | 2003-2004 | MSc, UCL |
| Amit Jain | 2003-2004 | MSc, UCL |
| Phil Williams | 2004-2005 | MSc, UCL |
| Yuan Chen | 2004-2005 | MSc, UCL |
| Frederik Eaton | 2005-2006 | MSc, UCL |

| Thesis Examiner / PhD Committee Member | | | | |
|---|-------|--------|--------------------------|----------------------------|
| Name | Dates | Degree | Department | University |
| Yee Whye Teh | 1998 | MSc | Computer Science | Univ of Toronto |
| Amos Storkey | 1999 | PhD | Electrical Engineering | Imperial College |
| Harri Valpola | 2000 | PhD | Computer Science | Tech Univ Helsinki |
| Olivier Dupin | 2000 | MSc | Neural Computing | Aston University |
| Andrew Brown | 2001 | PhD | Computer Science | Univ of Toronto |
| Alberto Paccanaro | 2001 | PhD | Computer Science | Univ of Toronto |
| Brian Sallans | 2001 | PhD | Computer Science | Univ of Toronto |
| Lehel Csato | 2002 | PhD | Neural Computing | Aston University |
| John Winn | 2003 | PhD | Physics | Univ of Cambridge |
| Martijn Leisink | 2004 | PhD | Biophysics | Univ of Nijmegen |
| Yuan Qi | 2004 | PhD | Media Arts and Sciences | MIT |
| Iosifina Pournara | 2005 | PhD | Crystallography | Birkbeck College, London |
| Hyun-Chul Kim | 2005 | PhD | Comp. Sci. & Eng. | POSTECH, Korea |
| Xiaojin Zhu | 2005 | PhD | Computer Science | Carnegie Mellon University |
| Phil Cowans | 2006 | PhD | Physics | Univ of Cambridge |
| Jason Williams | 2006 | PhD | Engineering | Univ of Cambridge |
| Jian Zhang | 2006 | PhD | Computer Science | Carnegie Mellon University |
| Anna Goldenberg | 2007 | PhD | Computer Science | Carnegie Mellon University |
| Frank Wood | 2007 | PhD | Computer Science | Brown University |
| Imre Risi Kondor | 2007 | PhD | Computer Science | Columbia University |
| Yan Karklin | 2007 | PhD | Computer Science | Carnegie Mellon University |
| Lisa Wainer | 2007 | PhD | Computer Science | University College London |
| Tae-Kyun Kim | 2007 | PhD | Engineering | Univ of Cambridge |
| Benjamin Marlin | 2008 | PhD | Computer Science | University of Toronto |
| Julia Lasserre | 2008 | PhD | Engineering | University of Cambridge |
| Peter Orbanz | 2008 | PhD | Computational Science | ETH Zürich |
| Joris Mooij | 2008 | PhD | Dept. of Biophysics | Radboud Univ Nijmegen |
| Hanna Wallach | 2008 | PhD | Physics | University of Cambridge |
| Jason Ernst | 2008 | PhD | Computer Science | Carnegie Mellon University |
| Jim Huang | 2009 | PhD | Elect. and Computer Eng. | University of Toronto |
| Rebecca Hutchinson | 2009 | PhD | Computer Science | Carnegie Mellon University |
| Sajid Sidiqqi | 2009 | PhD | Computer Science | Carnegie Mellon University |
| Lavi Shpigelman | 2010 | PhD | Neural Computation | Hebrew Univ of Jerusalem |
| Tom Stepleton | 2010 | PhD | Robotics | Carnegie Mellon University |
| Michael Osborne | 2010 | PhD | Engineering | Oxford University |
| Indrayana Rustandi | 2010 | PhD | Computer Science | Carnegie Mellon University |
| Han Liu | 2010 | PhD | Machine Learn. and Stats | Carnegie Mellon University |
| Hui Guo | 2010 | PhD | Statistics | University of Cambridge |
| Philipp Hennig | 2011 | PhD | Physics | University of Cambridge |
| Amr Ahmed | 2011 | PhD | Computer Science | Carnegie Mellon University |
| Kyung-Ah Sohn | 2011 | PhD | Machine Learning | Carnegie Mellon University |
| Juan Carlos Martinez | 2011 | PhD | Statistics | University of Kent |
| Douglas Speed | 2011 | PhD | Applied Mathematics | University of Cambridge |
| Noel Welsh | 2011 | PhD | Computer Science | University of Birmingham |
| Ryan Turner | 2011 | PhD | Engineering | University of Cambridge |
| Yunus Saatci | 2011 | PhD | Engineering | University of Cambridge |
| Finale Doshi-Velez | 2011 | PhD | Computer Science | MIT |
| Kay Broderson | 2012 | PhD | Computer Science | ETH Zurich |
| DJ Strouse | 2012 | MPhil | Engineering | University of Cambridge |
| Khalid El-Arini | 2013 | PhD | Computer Science | Carnegie Mellon University |
| Patrick Fox-Roberts | 2013 | PhD | Engineering | University of Cambridge |
| John Reid | 2013 | PhD | Statistics | University of Cambridge |
| Yuri Perov | 2016 | MSc | Engineering Science | University of Oxford |
| Balaji Lakshminarayanan | 2016 | PhD | Gatsby Unit | UCL |
| Valentin Dalibard | 2016 | PhD | Computer Lab | University of Cambridge |
| Advait Sarkar | 2017 | PhD | Computer Lab | University of Cambridge |
| Tom Gunter | 2017 | PhD | Engineering Science | University of Oxford |
| Kirthevasan Kandasamy | 2018 | PhD | Machine Learning | CMU |

TEACHING ACTIVITY

Undergraduate Teaching

Signal and Pattern Processing (3F3) Cambridge University Engineering Department. 4 lectures. (2006-)

Photo Editing and Image Search (paper 8, part IB) Cambridge University Engineering Department. 4 lectures. (2007-)

Machine Learning (4F13) Cambridge University Engineering Department. 16 lectures (2006-). About 90 students.

MPhil and PhD Courses:

Advanced Machine Learning taught at Cambridge University (2015-).

Reinforcement Learning taught at Cambridge University (2015-2016).

Introduction to Machine Learning Speech and Language Technologies taught at Cambridge University (2015-2016).

Unsupervised Learning: taught at the Gatsby Computational Neuroscience Unit in the first terms of 1998 (when it was called Neural Computation), and 2000-2005. It is a core requirement of the Gatsby Computational Neuroscience PhD programme and of the MSc Intelligent Systems programme in the computer science department. Between 10-35 students per year.

Statistical Approaches to Learning and Discovery: taught at Carnegie Mellon University in 2002. It was a core requirement of the MSc and PhD in Knowledge Discovery and Data Mining and was cross listed between the Computer Science, Statistics, Philosophy Departments and the Center for Automated Learning and Discovery. About 30 students.

Statistical Machine Learning: co-taught at Carnegie Mellon University in 2008. Core requirement of PhD in Machine Learning and cross listed with Statistics.

Conference Tutorials:

Nonparametric Bayesian Methods (UAI Conference, 2005)

Bayesian Methods for Machine Learning (ICML Conference, 2004)

Probabilistic Models for Unsupervised Learning (ICANN Conference, 2002)

Unsupervised Learning (Technical University of Denmark, 2001)

Probabilistic Models for Unsupervised Learning (NIPS Conference, 1999)

Neural Computation (London, 1999)

Summer School Lectures:

Machine Learning Summer School (Tübingen, 2015)

Machine Learning Summer School (Tübingen, 2013)

Machine Learning Summer School (La Palma, 2012)

Machine Learning Summer School (Singapore, 2011)

CEU School: Beliefs and Decisions of Mind and Machines (Budapest, 2010)

Machine Learning Summer School (Cambridge, 2009)

EPSRC Data Modelling Winter School (Sheffield, UK, 2008)

IPAM Graduate Summer School: Probabilistic Models of Cognition (LA, USA, 2007)

Machine Learning Summer School (Tübingen, Germany, 2007)

Machine Learning Summer School (Chicago, USA, 2005)

Machine Learning Summer School (Canberra, Australia, 2003)

EU Advanced Course in Computational Neuroscience (Obidos, Portugal, 2002)

Autumn School in Cognitive Neuroscience (Oxford, UK, 2001)

EU Advanced Course in Computational Neuroscience (Trieste, Italy, 2001)

Machine Learning PhD course at Carnegie-Mellon University (USA, 2000)

EU Advanced Course in Computational Neuroscience (Trieste, Italy, 2000)

PhD Course on Computational Motor Control (Aalborg, Denmark, 1999)

Summer School on Adaptive Processing of Temporal Information (Salerno, Italy, 1997)

Teaching Assistant:

Cognitive Neuroscience, MIT (1994)

Computational Cognitive Science, MIT (1992)

Introduction to Psychology, MIT (1991)

ENABLING ACTIVITY

Executive Board, Alan Turing Institute, 2015-

Cambridge ATI Internal Steering Committee, 2016-

Science Committee, Alan Turing Institute, 2016-

Government Office of Science roundtable on Data, Computing and Sensors, 2015

Royal Society Machine Learning Science Policy Group 2015

EPSRC, Member of Peer Review College, 2013-

Selection Panel, Lectureship in Machine Learning, Oxford, 2013

EPSRC ICT Grant Review Panel, 2012

CPHC/BCS Distinguished Dissertations Panel 2009-2012

Board of Electors, Oxford Professorship in Information Engineering, 2008-2012

Selection Committee, Director of UCL Centre for Computational Statistics & Machine Learning, 2006

External Examiner, MSc Information Processing & Neural Nets, King's College London, 2005-2009

Graduate Tutor, Gatsby Computational Neuroscience Unit, 2001-2005

Selection Committee, Chair in Computational Neuroscience, UCL, 2002

Selection Committee, Lecturer in Intelligent Systems, Computer Science, UCL, 2002

PUBLICATIONS

A. BOOKS

EDITED BOOKS

- [1] Z. Ghahramani, M. Welling, C. Cortes, N. Lawrence and K. Weinberger, editors, (2014) *Advances in Neural Information Processing 27*. Curran Associates, Inc. 3000+ pages.
- [2] C.J.C. Burges, L. Bottou, M. Welling, Z. Ghahramani, and K.Q. Weinberger, editors (2013) *Advances in Neural Information Processing Systems 26*. Curran Associates, Inc. 3000+ pages.
- [3] Z. Ghahramani, editor, (2007) *Proceedings of the 24th International Conference on Machine Learning (ICML 2007)*. Omni Press. 1204 pages.
- [4] R. G. Cowell and Z. Ghahramani, editors, (2005) *Proceedings of the 10th International Workshop on Artificial Intelligence and Statistics (AISTATS 2005)*. 452 pages.
- [5] T. G. Dietterich, S. Becker, and Z. Ghahramani, editors, (2002) *Advances in Neural Information Processing Systems 14*. MIT Press, Cambridge, MA, 2002. 1594 pages.

CHAPTERS IN BOOKS

- [6] Mohamed, S., Heller, K. A., and Ghahramani, Z. (2014) A Simple and General Exponential Family Framework for Partial Membership and Factor Analysis. In Edoardo M. Airoldi, David Blei, Elena A. Erosheva, Stephen E. Fienberg (eds) *Handbook on Mixed Membership Models and Their Applications*. CRC Press.
- [7] Mohamed, S., Heller, K. A. and Ghahramani, Z. (2014) Bayesian Approaches for Sparse Latent Variable Models: Reconsidering L_1 Sparsity. In Rish, I., Cecchi, G., Lozano, A. and Niculescu-Mizil (Eds.) *Practical Applications of Sparse Modeling*. MIT Press.
- [8] Van Gael, J and Ghahramani, Z. (2011) Nonparametric Hidden Markov Models. In Barber, D., Cemgil, A.T. and Chiappa, S. (Eds.) *Bayesian Time Series Models*, Chapter 15, pages 317–340. Cambridge University Press.
- [9] Pipe, A. G., Vaidyanathan, R., Melhuish, C., Bremner, P., Robinson, P., Clark, R., Lenz, A., Eder, K., Hawes, N., Ghahramani, Z., Fraser, M., Mirmehdi, M., Healey, P., Skachek, S. (2011) Affective Robotics: Human Motion and Behavioural Inspiration for Safe Cooperation between Humans and Humanoid Assistive Robots. In Y. Bar-Cohen (Ed.) *Biomimetics: Nature-Based Innovation*, CRC Press / Taylor & Francis Group
- [10] Beal, M.J., Li, J., Ghahramani, Z. and Wild, D.L. (2007) Reconstructing Transcriptional Networks using Gene Expression Profiling and Bayesian State Space Models. In Sangdun Choi (ed.) *Introduction to Systems Biology*, Chapter 12, pages 217–241. Humana Press.
- [11] Pérez-Cruz, F., Ghahramani, Z. and Pontil, M. (2007) Conditional Graphical Models. In Bakir, F. et al. (eds) *Predicting Structured Data*. MIT Press.
- [12] Chu, W., Keerthi, S. S., Ong, C. J., Ghahramani, Z. (2006) Bayesian support vector machines for feature ranking and selection. In Guyon, I., Gunn, S., Nikravesh, M. and Zadeh, L. *Feature extraction, Foundations and Applications.*, pages 403–418. Springer-Verlag.
- [13] Zhu, X., Kandola, J., Lafferty, J. and Ghahramani, Z. (2005) Graph Kernels by Spectral Transforms. In Chapelle, O., Schölkopf, B. and Zien, A. (eds) *Semi-Supervised Learning*. MIT Press.
- [14] Wolpert, D. M. and Ghahramani, Z. (2005) Bayes rule in perception, action and cognition. Gregory, R.L. (ed) *The Oxford Companion to the Mind*.
- [15] Rangel C. , Angus J. , Ghahramani Z. and Wild, D.L., (2005) Modeling genetic regulatory networks using gene expression profiling and state space models. In Husmeier, D., Dybowski,

- R. and Roberts, S. (Eds): *Probabilistic Modelling in Bioinformatics and Medical Informatics*, pages 269–293. Springer Verlag.
- [16] Ghahramani, Z. (2004) Unsupervised Learning. In Bousquet, O., von Luxburg, U. and Raetsch, G. *Advanced Lectures in Machine Learning*. Lecture Notes in Computer Science 3176, pages 72–112. Berlin: Springer-Verlag.
- [17] Wolpert, D.M. and Ghahramani, Z. (2004) Computational Motor Control. In *The Cognitive Neurosciences, 3rd edition* Gazzaniga, M. (Ed.). Cambridge, MA: MIT Press.
- [18] Ghahramani, Z. (2002) Graphical models: parameter learning. In Arbib, M. A. (ed.) *Handbook of Brain Theory and Neural Networks, Second Edition*. MIT Press.
- [19] Ghahramani, Z. (2002) Information Theory. In *Encyclopedia of Cognitive Science*. Maxmillan Reference Ltd.
- [20] Wolpert, D.M. and Ghahramani, Z. (2002) Motor learning models. In *Encyclopedia of Cognitive Science*. Maxmillan Reference Ltd.
- [21] Roweis, S.T. and Ghahramani, Z. (2001) Learning nonlinear dynamical systems using the Expectation-Maximization algorithm. In Haykin, S. (ed.) *Kalman Filtering & Neural Networks*, 175–220. Wiley.
- [22] Ghahramani, Z. and Beal, M. J. (2001) Graphical models and variational methods. In Saad, D. and Opper, M. (ed.) *Advanced Mean Field Methods—Theory and Practice*, 161–177. MIT Press.
- [23] Wolpert, D.M. and Ghahramani, Z. (2000) Maps, modules, and internal models in human motor control. In J. Winters and P. Crago (eds.), *Biomechanics and Neural Control of Posture and Movement*, Chapter 23:317–324. Springer-Verlag.
- [24] Sallans, B., Hinton, G.E., and Ghahramani, Z. (1998) A Hierarchical Community of Experts. In Bishop, C.M. (ed.) *Neural Networks for Machine Learning*, 269–284. Springer-Verlag.
- [25] Ghahramani, Z. (1998) Learning Dynamic Bayesian Networks. In C.L. Giles and M. Gori (eds.), *Adaptive Processing of Sequences and Data Structures*. Lecture Notes in Artificial Intelligence, 168–197. Berlin: Springer.
- [26] Hinton, G.E., Sallans, B. and Ghahramani, Z. (1998) A Hierarchical Community of Experts. In M.I. Jordan (ed.), *Learning in Graphical Models*, 479–494. Dordrecht: Kluwer Academic Press.
- [27] Jordan, M.I., Ghahramani, Z., Jaakkola, T.S., Saul, L.K. (1998) An Introduction to Variational Methods in Graphical Models. In M.I. Jordan (ed.), *Learning in Graphical Models*, 105–161. Dordrecht: Kluwer Academic Press.
- [28] Ghahramani, Z., Wolpert, D.M., and Jordan, M.I. (1997) Computational Models of Sensorimotor Integration. In P.G. Morasso and V. Sanguineti (eds.), *Self-Organization, Computational Maps and Motor Control*, 117–147. Amsterdam: North-Holland
- [29] Ghahramani, Z. and Jordan, M.I. (1997) Mixture models for learning from incomplete data. In R. Greiner, T. Petsche and S.J. Hanson (eds.), *Computational Learning Theory and Natural Learning Systems, Vol. IV*, 67–85. Cambridge, MA: MIT Press.
- [30] Cohn, D.A., Ghahramani, Z. and Jordan, M.I. (1997) Active learning with mixture models. In R. Murray-Smith and T.A. Johansen (eds.), *Multiple Model Approaches to Modelling and Control*, 167–183. London: Taylor and Francis Press.

B. REFEREED ARTICLES (JOURNAL AND CONFERENCE PAPERS)

- [31] Gu, S., Lillicrap, T., Turner, R.E., Ghahramani, Z., Schoelkopf, B., Levine, S. (2017) Interpolated Policy Gradient: Merging On-Policy and Off-Policy Gradient Estimation for Deep Reinforcement Learning. NIPS 2017.

- [32] Balog, M., Tripuraneni, N., Ghahramani, Z. and Weller, A. (2017) Lost Relatives of the Gumbel Trick. ICML 2017. **ICML Best Paper Honourable Mention**
- [33] Tripuraneni, N., Rowland, M. Ghahramani, Z., and Turner, R. (2017) Magnetic Hamiltonian Monte Carlo. ICML 2017.
- [34] Valera, I. and Ghahramani, Z. (2017) Automatic Discovery of the Statistical Types of Variables in a Dataset. ICML 2017.
- [35] Lee, J., Heaukulani, C., James, L., Choi, S. and Ghahramani, Z. (2017) Bayesian inference on random simple graphs with power law degree distributions. ICML 2017.
- [36] Palla, K., Knowles, D.A., and Ghahramani, Z. (2017) A birth-death process for feature allocation. ICML 2017.
- [37] Gal, Y., Islam, R. and Ghahramani, Z. (2017) Deep Bayesian Active Learning with Image Data. ICML 2017.
- [38] Matthews, A. G de G, van der Wilk, M., Nickson, T., Fujii, K., Boukouvalas, A., Leon-Villagra, P., Ghahramani, Z., and Hensman, J. (2017) GPflow: A Gaussian process library using TensorFlow. *Journal of Machine Learning Research: Open Source Software*.
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