Dr. rer. nat. Ben Glocker

Senior Lecturer in Machine Learning for Imaging

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RESEARCH POSITIONS

University Senior Lecturer since 2013
Department of Computing Senior since 2017
Imperial College London, UK

Postdoctoral Researcher 2010 – 2013
Machine Learning and Perception Group
Microsoft Research, Cambridge, UK

Research Assistant 2006 – 2010
Computer Aided Medical Procedures
Technische Universitaet Muenchen, Germany

Visiting Researcher May – Oct 2006
Laboratoire MAS
Ecole Centrale Paris, France

EDUCATION

Doctoral Degree in Computer Science with High Distinction 2011
Computer Aided Medical Procedures
Technische Universitaet Muenchen, Germany

Diploma in Computer Science with High Distinction 2006
Technische Universitaet Muenchen, Germany
Minor Subject: Theoretical Medicine

FELLOWSHIPS

Microsoft Research Fellow 2010 – 2012
Darwin College
University of Cambridge, UK

AWARDS / HONOURS

Philips Impact Award – MIDL 2018 2018
Member of the World Economic Forum's Young Scientists Community 2016
NVIDIA Global Impact Award – Honorable Mention 2016
ERCIM Cor Baayen Award – Honorable Mention 2013
Medical Image Analysis – MICCAI Best Paper Award 2013
Werner von Siemens Excellence Award 2007
Francois Erbsmann Prize 2007

EXECUTIVE SUMMARY

Ben Glocker is Senior Lecturer in Machine Learning for Imaging at the Department of Computing at Imperial College London, and one of three academics leading the Biomedical Image Analysis Group. He also leads the HeartFlow-Imperial Research Team and is scientific advisor for Kheiron Medical Technologies. He holds a PhD from TU Munich and was a post-doc at Microsoft and a Research Fellow at the University of Cambridge. His research is at the intersection of medical image analysis and artificial intelligence aiming to build computational tools for improving image-based detection and diagnosis of disease. He has published over 100 peer-reviewed conference papers and journal articles and holds 5 international patents. He has received several awards including a Philips Impact Award, a Medical Image Analysis – MICCAI Best Paper Award, and the Francois Erbsmann Prize. He is a member of the Young Scientists Community of the World Economic Forum. His ERC Starting Grant MIRA is devoted to developing the next generation machine intelligence for medical image representation and analysis.

PROFESSIONAL ACTIVITIES

Editorial Board
Elsevier's Journal on Medical Image Analysis, Elsevier's Journal on Image and Vision Computing

Steering Committee
EPSRC-NIHR HTC Partnership Award: Medical Image Analysis
WEF Young Scientists' Code of Ethics

Scientific Lead
HeartFlow-Imperial Research Team

Scientific Advisor
Kheiron Medical Technologies
Definiens

Conference Chair
International Conference on Medical Imaging with Deep Learning (MIDL) 2019

Program Committee & Area Chair
ECR 2020 Imaging Informatics Scientific Subcommittee
MICCAI 2013/15/16, SPIE Medical Imaging 2015/16/17/18, WBIR 2014, ISVC Special Track 2009

Co-Organizer
IPAM Workshop on Deep Learning and Medical Applications 2020
{U|I}CL Bio-Imaging Symposia (UIBIS)
MICCAI 2018 Tutorial on Deep Learning for Medical Imaging (Deep-A2Z)
NIPS Workshop Medical Imaging meets NIPS (MED-NIPS) 2017/2018
British Machine Vision Conference (BMVC) 2017
1st MedIAN CodeFest 2017 – Medical Imaging Hackathon
International Workshop on Biomedical Image Registration (WBIR) 2016
BIH 2015 Symposium on clinical applications of machine learning in neuroimaging
MICCAI Workshop & Challenge CSI 2014/2015/2016, mTOP 2016, MSKI 2017
ISBI Special Session on Graphical Models for Biomedical Image Analysis 2015
MICCAI Tutorial on Intensity-based Deformable Registration 2010
1st Russian-Bavarian Conference on Biomedical Engineering 2005

Departmental and College Activities
Champion for Public Engagement
Church of England Symposium on Social and Ethical Implications of AI, March 2018

Affiliations
World Economic Forum's Young Scientists Community
Imperial Neurotrauma Centre
EPSRC Centre for Doctoral Training in Medical Imaging
EPSRC Centre for Doctoral Training in High Performance Embedded and Distributed Systems
Science and Solutions for a Changing Planet DTP

Centre for Doctoral Training in Neurotechnology
CRUK Imperial Centre Development Fund Committee

Guest Editor
Medical Image Analysis Special Issue on Discrete Graphical Models in Biomedical Image Analysis
International Journal of Computer Vision Special Issue BMVC 2017

Society Memberships
MICCAI Society, European Society of Medical Imaging Informatics (EuSoMII), British Machine Vision Association (BMVA), European Society of Radiology (ESR)

Co-Founder
SpineWeb - Collaborative Platform for Research on Spine Imaging and Image Analysis

Journal & Conference Reviewer
IEEE T-PAMI, TMI, TIP, TBME, Springer Nature, IJCV, Elsevier MEDIA, CVIU, IMAVIS, Annals of Biomedical Engineering, MICCAI, IPMI, NIPS, CVPR, ICCV, ECCV, ISBI, SPIE

Funding Body Reviewer
European Research Council, Research Council UK, The Wellcome Trust (UK), Technology Foundation STW (NL), Action Medical Research (UK)

PhD Examiner
Dr Bo Xiang (Ecole CentraleSupelec, N. Paragios), 28 Nov 2013; Dr Meelis Lootus (University of Oxford, A. Zisserman), 02 July 2015; Dr Monica Enescu (University of Oxford, J. Schnabel), 28 Sep 2015; Dr Vivien Fecamp (Ecole CentraleSupelec, N. Paragios), 12 Jan 2016; Dr Malte Hoffmann (University of Cambridge, G. Williams), 30 Jan 2017; Dr Martin Kochan (University College London, D. Stoyanov), 27 Oct 2017; Dr Jianyu Lin (Imperial College London, D. Elson), 21 Feb 2018; Dr Amir Jamaludin, (Oxford, A. Zisserman, T. Kadir), 25 April 2018; Dr Guotai Wang, (University College London, S. Ourselin, T. Vercauteren), 17 May 2018; Dr Annegreet van Opbroek (Rotterdam MC, W. Niessen), 06 June 2018; Dr Raghav Selvan (DIKU, M. de Bruijne), 16 Nov 2018

PUBLICATIONS

List of publications: http://wp.doc.ic.ac.uk/bglocker/publications/
Google Scholar: https://scholar.google.co.uk/citations?user=g_HtjLIAAAAJ
dblp: https://dblp.uni-trier.de/pers/hd/g/Glocker:Ben
Citations: >5,000; h-index: 35 (last accessed 01 Nov 2018)

TEACHING

CO202 – Algorithms, 2014 - 2018
CO407H – Medical Image Computing, 2014 – 2017
CO416 – Machine Learning for Imaging, starting 2019

PATENTS

Modelling a Three-Dimensional Space
Pub. No. WO2016189274

Tracking using Sensor Data
Pub. No. US2015347846

Camera/Object Pose from Predicted Coordinates
Pub. No. US2014241617

Method for Combining Images and Magnetic Resonance Scanner
Pub. No. US2010067762

System and Method for Dense Image Registration using Markov Random Fields and Efficient Linear Programming
Pub. No. US2009046951

INVITED TALKS, KEYNOTES & LECTURES

European Commission Expert Group on Liability and New Technologies 2018
Artificial Intelligence in Clinical Imaging
European Commission, Brussels, Belgium, November 27

Artificial Intelligence and Machine Learning in Clinical Imaging Research 2018
Machine Intelligence in Clinical Imaging
Alan Turing Institute, London, UK, November 6th

BIR Annual Congress 2018
Machine learning in medical imaging
ETC Venues St. Paul's, London, UK, November 2nd

Imperial Global Science Policy Forum 2018
AI in Medical Imaging
Imperial College London, UK, October 30

Deep Learning in Healthcare Summit 2018
Deep Learning in Medical Imaging: Beyond Human-level Performance
ETC Venues 155 Bishopsgate London, UK, September 21

ISMRM 2018: Machine Learning for Magnetic Resonance in Medicine 2018
Deep Learning for MR Image Analysis
Paris expo Porte de Versailles, Paris, June 20

ECR 2018: Artificial intelligence and radiology: a perfect match? 2018
Deep learning for fully automatic segmentation of normal and pathological structures in medical images
Austria Center Vienna, Austria, March 1

ECR 2018: Artificial intelligence: a strategic view 2018
Machine learning for analysing medical images
Austria Center Vienna, Austria, March 1

Emerging Technologies in Medicine: Artificial Intelligence and Robotics 2018
Can we build a machine capable of interpreting medical scans with super-human performance?
Universitaets-Klinik Essen, Germany, February 16

EuSoMII Academy 2017: Game Changers in Radiology 2017
Unlocking patterns in medical images with AI
Erasmus MC, Rotterdam, Netherlands, November 18

BMVA Symposium: Computer Vision in Cancer 2017
Brain Tumour Segmentation with Deep Neural Nets
British Computer Society, London, UK, October 11

Deep Learning in Healthcare Summit 2017
Deep Learning in Medical Imaging – Successes and Challenges
LSO St Luke's, London, UK, February 28

Medical Computer Vision: Algorithms for Big Data 2016
Deep Learning for Brain Lesion Segmentation
MICCAI Workshop Invited Talk, Athens, Greece, October 21

Bayesian and Graphical Models for Biomedical Imaging – BAMBI 2016
Solving Continuous Problems with Discrete Optimization
MICCAI Workshop Keynote, Athens, Greece, October 21

Medical Imaging Summer School – MISS 2016
Medical Imaging meets Machine Learning
Favignana, Sicily, Italy, July 31 – August 6

UCL Medical Image Computing Summer School 2016
CMIC, London, UK, July 22

Girls' Engineering Summer School 2016
London, UK, July 19/20

World Economic Forum IdeasLab 2016
Unlocking Patterns in Medical Images with Artificial Intelligence
WEF Annual Meeting of the New Champions, Tianjin, China, June 26

Deep Learning in Healthcare Summit 2016
Deep Learning for Semantic Understanding of Medical Images
LSO St Luke's, London, UK, April 7

Academy of Medical Sciences 2016
Machine Learning for Complex Data Analyses
London, UK, March 14

Big Data, Multimodality & Dynamic Models in Biomedical Imaging 2016
Machine Learning for Medical Image Analysis
Isaac Newton Institute, Cambridge, UK, March 9

Royal College of Radiologists 2016
Machine Learning Event
London, UK, January 7

Alan Turing Institute: Scientific Scoping Workshop 2015
Big data in medical imaging: passing fad or paradigm shift
British Library, London, UK, December 7

UCL Medical Image Computing Summer School 2015
London, UK, August 10

Girls' Engineering Summer School 2015
London, UK, July 23

Launch Event: Imperial's Clinical Imaging Facility and the Biological Imaging Centre 2015
Semantic Imaging: Machine Learning in Medical Image Analysis
Wolfson Education Centre, Hammersmith Campus, London, UK, July 16

1st ICML Workshop on Machine Learning meets Medical Imaging 2015
Lille, France, July 11

3rd Biomedical Image Analysis Summer School 2015
Institut Henri Poincare, Paris, France, July 10

CSAIL Biomedical Imaging and Analysis Seminar Series 2014
Learning to Understand Medical Images
MIT, Boston, USA, September 12

London Critical Care Data Marathon 2014
Semantic Imaging – Learning to Understand Medical Images
IDEALondon, London, UK, September 6

Symposium of the Rank Prize Funds 2013
Medical Imaging meets Computer Vision
Grasmere, Lake District, UK, March 18

Darwin College Sciences Group 2010
Medical Image Computing – The role of computer science in clinical routine
University of Cambridge, UK, November 11

PhD Students

Zeju Li, 1st Supervisor, since Oct 2018
Miguel Monteiro, 1st Supervisor, since Oct 2018
Daniel Coelho De Castro, 1st Supervisor**,** since Oct 2016
Robert Robinson, 1st Supervisor**,** since Oct 2016
Nick Pawlowski, 1st Supervisor**,** since Oct 2016
Ian Walker, 1st Supervisor**,** since Oct 2016
Konstantinos Kamnitsas, 1st Supervisor**,** since Oct 2014
Matthew Lee, 1st Supervisor**,** since Oct 2014
Karl Hahn, 2nd Supervisor, since Oct 2018
Sebastian Popescu, 2nd Supervisor**,** since Oct 2017
Vanya Valindria, 2nd Supervisor, since Apr 2015
Amir Alansary, 2nd Supervisor**,** since Oct 2014
Fahdi Kanavati, 2nd Supervisor, since Oct 2013 (graduated Dec 2017)

Research Grants

Innovate UK - AI Centre Grant
London Medical Imaging & Artificial Intelligence Centre for Value-Based Healthcare
Start 01/01/2019 End 31/12/21
PI: Prof Reza Razavi Co-I: Dr Ben Glocker (5% 2h/w)
Total value: ~£10,000,000

ERC Starting Grant, ERC-2017-STG-757173-MIRA
Next Generation Machine Intelligence for Medical Image Representation and Analysis
Start 01/02/2018 End 31/01/23
PI: Dr Ben Glocker (60% 22.5h/w)
Total value: €1,499,292

HeartFlow-Imperial Research Collaboration
Start 01/12/2018 End 30/11/22
PI: Dr Ben Glocker (10% 4h/w)
Total value: -confidential-

MRC/NIHR Efficacy and Mechanism Evaluation, 16/68/34
MAchine Learning In MyelomA Response (MALIMAR study)
Start 01/07/2018 End 30/09/2021
PI: Prof Andrea Rockall, Co-I: Dr Ben Glocker (4% 1.5h/w)
Total value: £646,787

EPSRC, EP/R005982/1, EP/R005516/1
Efficient and Robust Assessment of Cardiovascular Disease Using Machine Learning and Ultrasound Imaging
Start 01/02/2018 End 31/01/2021
PI: Prof Daniel Rueckert, Dr Andy King, Co-I: Dr Ben Glocker (10% 4h/w)
Total value: £707,983

EPSRC Healthcare Impact Partnerships, EP/P023509/1
Intelligent and Personalised Risk Stratification and Early Diagnosis of Lung Cancer
Start 01/10/2017 End 30/09/2020
PI: Prof Julia Schnabel, Co-I: Dr Ben Glocker (5% 2h/w)
Total value: £947,232

EPSRC First Grant, EP/N023668/1
QuantifyTBI: A Machine Learning Approach to Automatic Segmentation and Quantification of TBI Lesions
Start 01/06/2016 End 31/05/2017
PI: Dr Ben Glocker (8% 3h/w)
Total value: £97,534

EPSRC NetworksPlus, EP/N026993/1

EPSRC-NIHR HTC Partnership Award 'Plus': Medical Image Analysis Network (MedIAN)
Start 01/10/2016 End 30/09/2019
PI: Prof Alison Noble, Co-I: Dr Ben Glocker (4% 1.5h/w)
Total value: £507,583

Dunhill Medical Trust, R401/0215
Optimising diagnosis and prediction of outcome of spinal decompression surgery in older people
Start 01/10/2015 End 30/09/2017
PI: Dr Paul Strutton, Co-I: Dr Ben Glocker (1% 0.5h/w)
Total value: £176,510

MRC Developmental Pathway Funding Scheme, MR/M025004/1
Repurposing Low-Cost Consumer Technology for Motion Correction in Dementia Neuroimaging
Start 01/07/2015 End 31/12/2016
PI: Prof Roger Gunn, Co-I: Dr Ben Glocker (3% 1h/w)
Total value: £255,501

MRC/NIHR Efficacy and Mechanism Evaluation, 13/122/01
MALIBO – Machine Learning in Whole Body Oncology
Start 01/02/2015 End 31/07/2018
PI: Prof Andrea Rockall, Co-I: Dr Ben Glocker (5% 2h/w)
Total value: £578,090

AMR Paediatric
Network Dysfunction following Paediatric Traumatic Brain Injury
Start 01/02/16 End 31/01/19
PI: Prof David Sharp, Co-I: Dr Ben Glocker (1% 0.5h/w)
Total value: £200,000

EPSRC Pathways to Impact
Fast and fully automatic segmentation of magnetic resonance images for computer-aided diagnosis
Start 01/09/2014 End 31/08/2015
PI: Prof Daniel Rueckert, Co-I: Dr Ben Glocker (3% 1h/w)
Total value: £53,770

Wellcome Trust ISSF Networks of Excellence
Augmented Reality and Advanced Visualization of Medical Images for Education, Training and Interventional Planning
Start 01/11/2014 End 31/10/2015
PI: Dr Ben Glocker (10% 4h/w)
Total value: £53,667

Wellcome Trust ISSF Networks of Excellence
Optimising diagnosis and prediction of outcome of spinal surgery using DTI and machine learning
Start 01/10/2014 End 30/09/2015
PI: Dr Paul Strutton, Co-I: Dr Ben Glocker (1% 0.5h/w)
Total value: £100,000