Dr. Bernhard Kainz

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Areas of expertise

decision support, machine learning, real-time and high-performance computing, medical image analysis

Employment history

Lecturer (eq. US/EU Ass. Prof.), Dept. Computing, Imperial College London, UK	since 10/2015
Honorary Research Fellow, ISBE, King's College London, UK	since 10/2015
Senior Research Fellow, ISBE, King's College London, UK	05/2015 – 10/2015
Marie-Curie Fellow, Department of Computing, Imperial College London, UK	03/2013 – 04/2015
Senior Research Fellow, ICG, Graz University of Technology, Austria	05/2011 – 02/2013
Research Associate, ICG, Graz University of Technology, Austria	01/2008 – 04/2011
Research Associate, Dept. Urology, Medical University of Innsbruck, Austria	06/2007 – 12/2007
Research Engineer, Test-lab for High-Voltage Engineering, Graz, Austria	06/2006 – 02/2013
part-time Research Engineer, Siemens Healthcare, Graz Austria/Erlangen, Germany	2004 – 2007

Academic history

Ph.D. Graz University of Technology	10/2007 – 05/2011
Dissertation: "Ray-Based Image Generation For Advanced Medical Applications" (Advisor: Prof. Dieter Schmalstieg) (summa cum laude). Viva date: 05/25/2011	
M.Sc. Graz University of Technology (summa cum laude)	10/2005 – 10/2007
Specialization in Biomedical Engineering and Computer Science	
B.Sc. Graz University of Technology	10/2001 – 06/2005
Course: Telematics (Informatics and Electrical Engineering)	

Track record of research funding

award title	start/end date	funding body	value	type	role
IAA	07/2018 – 08/2019	UK EPSRC	15k €	Impact grant	PI
EP/N024494/1	09/2016 – 08/2017	UK EPSRC	150k €	std. grant	PI
Wellcome/EPSRC 102431	01/2016 – 02/2021	UK EPSRC	5M €	IEH	CoI
Nvidia HW donations	03/2016 – 06/2018	Nvidia	6k €	Equipment	PI
ClinicImppact (610886)	02/2014 – 01/2015	EU FP7	3M/400k €	ICT@TUG	Co-Appl.
F.A.U.S.T. - (325661)	05/2013 – 04/2015	EU FP7	230k €	Fellowship	PI
Schrödinger Scholarship	resigned for above.	Austrian FWF	150k €	Fellowship	PI
GOSMART (223877)	04/2013 – 03/2016	EU FP7	4M/600k €	ICT@TUG	Co-Appl.
MVP (P23329)	09/2011 – 08/2014	FWF	350k €	Research	CoI
FutureLab	01/2008	TU-Graz	30k €	Equipment	Co-Appl.

Academic achievement summary

- 35 peer reviewed articles in scientific journals
- 35 peer reviewed full papers at leading international conferences
- 16 peer reviewed publications at international conferences (short papers, extended abstracts, etc.)
- 10 popular science contributions
- 3 patents
- 7 grants, approx. £1.6M acquired funds
- 15 awards, prizes, and honours
- 2 books
- full list: http://wp.doc.ic.ac.uk/bkainz/publications/

Current teaching

Computer Graphics, Computer Architecture, Medical Image Computing	since 2016

Past teaching

Computer Graphics at Peking University Summer School International	07.2016
Matlab, lecture and lab, Imperial College London	2013 – 2017
Real-time Graphics 2, Medical Image Analysis, Augmented Reality and various other courses, co-delivered lectures and labs, TUG	2007 – 2013

Professional Activities

EPSRC Centre for Doctoral Training in Medical Imaging, Stream 3 lead	2018
Area Chair/PC member 21st MICCAI 2018	2018
IPC OAGM/AAPR Medical Image Analysis 2018	2018

General Chair RAMBO Intl. Workshop at MICCAI	2016 – 2018
IPC: International Joint Conference on Artificial Intelligence 2017	2017
Paper Chair Visual Computing for Biology and Medicine (EG VCBM)	2017
IPC: biovis 2016 at IEEE VIS 2016	2016
IPC: Eurographics Intl. Workshop on Visual Computing for Biology and Medicine	2013 – 2016
IPC: AE-CAI Intl. Workshop at MICCAI	2012 – 2015
IPC: German CURAC	2012 – 2015

Awards and Prizes

- **2017** Winner of the Multimodal Brain Tumor Segmentation Challenge (BraTS'17) (Kamnitsas et al.).
- **2017** IEEE Senior Membership.
- **2017** IEEE PacivicVIS'17 best paper honourable mention award.
- **2017/18** Runner up prize, Google poster competition (PhD student Benjamin Hou).
- **2016** Insight-Award for the most aesthetic Visualization 2016: "Smoky hurricane" led by R. Khlebnikov.
- **2015** Short-listed for the Nurturing Research Talents Marie Skłodowska-Curie actions prize 2014.
- **2014** Best paper honorable mention award EuroGraphics 2014.
- **2014** Corporate Partnership Programme Award: award with my M.Eng. student at Imperial College.
- **2013** Short-listed for the OCG Heinz Zemanek Price 2012.
- **2013** *Best poster* honorable mention for IEEE SciVis 2013.
- **2012** VCBM Karl-Heinz-Höhne 3rd award for "Crepuscular Rays for Tumor Accessibility Planning".
- **2012** Short-listed for the GI-dissertation price 2011.
- **2011** *"Forum Technology and Society"* research/dissertation prize, Graz University of Technology.
- **2011** *Ing. F. Schmiedl research prize*, Research price for the best dissertation in human technology and communication technology in 2011, granted by the Ing. F. Schmiedl foundation.
- **2011** *Best paper award*, International Symposium on Non-Photorealistic Animation and Rendering.
- **2008** *ACM Honorable Mention*, CGEMS SIGGRAPH Educational Committee.
- **2007** *Award for excellent performance as a student*, Graz University of Technology.

Keynote talk: *Visualization for Medical AR*. A 'Look Into' Medical Augmented Reality Tutorial, International Symposium on Mixed and Augmented Reality, September 2014

Memberships of professional bodies

Academic Fellow at the Data Science Institute at Imperial College London	since 2017
Austrian Computer Society - OCG	since 2011
Institute of Electrical and Electronics Engineers - IEEE	since 2009
Association for Computing Machinery - ACM	2009-2013
Medical Image Computing and Computer Assisted Intervention (MICCAI) Society	since 2008
Eurographics Association - EG	since 2007

Selected Outreach activities/developing others

- **2018**: Imperial Fringe: Intelligence Redesigned
- **2017**: http://corticalexplorer.com, medical data visualisation for the general public
- **2015 – 2018**: Imperial Festival, (coordinated a team of 4-9; >15,000 audience each year; 3 days).
- **since 2012**: two media interviews, http://goo.gl/vuUStN , http://goo.gl/yaHEtl.
- **since 2013**: six outreach lectures at UK secondary schools and Silver Crest Award.
- **2009 – 2012**: Project days in the high voltage engineering lab with primary schools, TUG, Austria.
- **2010**: Graz:CSI VITAL 2010 exhibition, Austria, (2010)
- **2008**: ECR 2008, European Society of Radiology, Vienna (2008)

Consulting

- **since 2017**: ThinkSONO Ltd. (diagnostic technology) – Algorithm design
- **2014 – 2017**: Exscitec (provider of STEM outreach activities) – Outreach for secondary schools
- **2013 – 2016**: Graz University of Technology, Graz, Austria – EU project management
- **2011 – 2013**: Perception Park Graz GmbH (hyperspectral imaging), Graz, Austria – HPC methods