
Dr. Bernhard Kainz

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Areas of expertise

human-in-the-loop computing, decision support in healthcare, machine learning, 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)	

Academic achievement summary

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| • 41 peer reviewed articles in scientific journals | • 2 patents |
| • 46 peer reviewed full papers at leading international conferences | • 13 grants, > €1.3M (as PI), > €5.5M (total) |
| • 16 peer reviewed publications at international conferences (short papers, extended abstracts, etc.) | • 15 awards, prizes, and honours |
| • 10 popular science contributions | • 3 books |
| | • full list: http://wp.doc.ic.ac.uk/bkainz/publications/ |

Current teaching

Computer Graphics (~130 students),	since 2014
Medical Image Computing (CDT course) (~20 students)	since 2015
Computer Hardware (~160 students)	since 2018

Past teaching

Computer Architecture (~130 students), Matlab 101, Computing Topics, (lecture and lab), ICL	2015 – 2017
Computer Graphics at Peking University Summer School International (~40 students)	07.2016
Real-time Graphics 2, Medical Image Analysis, Augmented Reality (~60 students) and various other courses, co-delivered lectures and labs, TUG	2007 – 2013

Professional Activities

Guest Editor Computers & Graphics, Visual Computing for Biology and Medicine	2019
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

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- **2018** S.M. Perren research award (for Verbruggen et al. 2018, J Biomechanics)

- **2017** Winning team of the Multimodal Brain Tumor Segmentation Challenge (BraTS'17) (Kamnitsas et al.).
- **2017** IEEE Senior Membership.
- **2017** IEEE PacivcVIS'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** 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.
- **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** "Forum Technology and Society" research/dissertation prize, Graz University of Technology.
- **2011** *Ing. F. Schmiedl research prize*, Research price for the best dissertation
- **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

funded research projects	MM/YY	funder	total/employer	type	role
EP/S013687/1	04/19 – 03/22	UK EPSRC	£852k/770k	Research	PI
Imaging & AI (19923)	12/18 – 11/21	Innovate UK	£10M/1.7M	Research	Col
Intel	08/18 – 08/19	Intel	\$20k	Research	PI
IAA	07/18 – 08/19	UK EPSRC	£12k	Impact grant	PI
EP/N024494/1	09/16 – 08/17	UK EPSRC	£120k	Research	PI
Wellcome/EPSRC (102431)	01/16 – 02/21	UK EPSRC	£5M/800k	Research (IEH)	Col
Nvidia HW donations	03/16 – 06/18	Nvidia	€10k	Equipment	PI
ClinicImpact (610886)	02/14 – 01/15	EU FP7	€3M/400k	ICT@TUG	Co-Appl.
F.A.U.S.T. - (325661)	05/13 – 04/15	EU FP7	€230k	Fellowship	PI
Schrödinger Scholarship	resigned for ↑	Austrian FWF	€150k	Fellowship	PI
GOSMART (600641)	04/13 – 03/16	EU FP7	€4M/600k	ICT@TUG	Co-Appl.
MVP (P23329)	09/11 – 08/14	FWF	€350k	Research	Col
FutureLab	01/08	TU-Graz	€30k	Equipment	Co-Appl.

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 18/01/2018
- **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:** media interviews, <http://goo.gl/vuUStN>, <http://goo.gl/yaHEt1>.
- **since 2013:** six outreach lectures at UK secondary schools and Silver Crest Award preparation.
- **2009 – 2012:** Project days in the high voltage engineering lab with primary schools, TUG, Austria.
- **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