
Dr. Bernhard Kainz

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<http://bernhard-kainz.com/>

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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| <ul style="list-style-type: none">• 41 peer reviewed articles in scientific journals• 46 peer reviewed full papers at leading international conferences• 16 peer reviewed publications at international conferences (short papers, extended abstracts, etc.)• 10 popular science contributions | <ul style="list-style-type: none">• 2 patents• 12 grants, > €500k (as PI), > €4.7M (total)• 15 awards, prizes, and honours• 3 books• full list: http://wp.doc.ic.ac.uk/bkainz/publications/ |
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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 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

funded research projects	MM/YY	funder	total/employer	type	role
Imaging & AI (19923)	10/18 – 09/21	Innovate UK	10M/1.7M €	Research	Col
Intel	08/18 – 08/19	Intel	17k €	Research	PI
IAA	07/18 – 08/19	UK EPSRC	15k €	Impact grant	PI
EP/N024494/1	09/16 – 08/17	UK EPSRC	150k €	Research	PI
Wellcome/EPSC (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 (223877)	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