
Dr. Bernhard Kainz

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

Areas of expertise

human-in-the-loop computing, machine learning, medical image analysis, GPU accelerated algorithms

Employment history

Assoc. Prof. (UK Senior Lecturer), Dept. Computing, Imperial College London, UK	since 09/2019
Asst. Prof. (UK Lecturer), Dept. Computing, Imperial College London, UK	10/2015 – 08/2019
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
Post-doctoral researcher, 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
part-time Research Engineer, Test-lab for High-Voltage Engineering, Graz, Austria	06/2006 – 02/2013
part-time Research Engineer, Siemens Healthcare, Graz Austria	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 Vision/Graphics	
B.Sc. Graz University of Technology	10/2001 – 06/2005
Course: Telematics (Computer Science plus Electrical Engineering)	

Academic achievement summary

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- 45 peer reviewed articles in scientific journals
 - 50 peer reviewed full papers at leading international conferences
 - 16 peer reviewed publications at international conferences (short papers, extended abstracts, etc.)
 - 10 popular science contributions
 - 2 patents
 - 14 grants, > €1.5M (as PI), > €22.7M (total)
 - 15 awards, prizes, and honours
 - 3 books edited
 - full list: <http://wp.doc.ic.ac.uk/bkainz/publications/>
 - supervised 10 PhD students and 100+ project students

Awards and Prizes

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- **2019** Imperial President's award (team award for BioMedIA with D. Rueckert, B. Glocker, W. Bai)
 - **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 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** 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.

Professional Activities

Area Chair/PC member 22nd MICCAI 2019	2019
Guest Editor Computers & Graphics, Visual Computing for Biology and Medicine	2019
Deputy director UKRI Centre for Doctoral Training in Artificial Intelligence for Healthcare	2019
Affordable imaging stream lead EPSRC CDT in Smart Medical Imaging	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
Senior IPC: International Joint Conference on Artificial Intelligence	2017 – 2019
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

Current teaching

Computer Graphics (~130 students),	since 2014
Medical Image Computing (CDT course inc. Machine Learning) (~20 students)	since 2015
Introduction to Computer Architecture (~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

Funded research projects	MM/YY	funder	total/employer	type	role
Imperial-TUM Collab.	01/20 – 01/21	Imperial-TUM	£7k	Research	PI
AI4Health EP/S011579/1	04/19 – 10/27	UK UKRI	£15M	CDT	Col
joint venture with JKU	10/18 – 10/21	Upper Austria	£200k	Research	PI
Imaging & AI (19923)	12/18 – 11/21	Innovate UK	£10M/1.7M	Research	Col
EP/S013687/1	04/19 – 03/22	UK EPSRC	£852k/770k	Research	PI
Intel AI DevCloud	08/18 – 08/19	Intel	\$20k	Research	PI
Impact acceleration grant	07/18 – 08/19	UK EPSRC	£12k	Impact grant	PI
EP/N024494/1	09/16 – 08/17	UK EPSRC	£120k	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 (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.
PhD student funding	2015–2023	various	~£1M	7×studentships	PI

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) - Senior Member since 2017	since 2009
Association for Computing Machinery - ACM	2009-2013
Medical Image Computing and Computer Assisted Intervention (MICCAI) Society	since 2008

Selected public engagement 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.

Consulting and advising

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