Prof. Dr.-Ing. habil.

Lena Maier-Hein

CURRICULUM VITAE

* January 10th, 1980
🌐 German
🔗 Married, two children
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Academic Focus

Current:	**Medical imaging AI**, **Surgical data science, AI validation**
Ph.D./Habilitation:	Multi-modal data fusion in interventional healthcare
Diploma/Master's:	Machine learning, Signal processing

Professional Experience (Selection)

Since 04 / 2024	**Head of "Surgical Artificial Intelligence" group, University Clinic Heidelberg, Germany**
Since 01 / 2022	**Managing director of the National Center for Tumor Diseases (NCT) Heidelberg (Germany)**
Since 07 / 2021	**Managing director of the German Cancer Research Center (DKFZ) Data Science and Digital Oncology cross-topic (Heidelberg, Germany)**
Since 01 / 2017	Professor at the University of Heidelberg (Germany); Faculty of Medicine (since 2017) and Faculty of Mathematics and Computer Sciences (since 2020)
Since 12 / 2016	**Head of Div. Intelligent Medical Systems (IMSY), DKFZ**
07 / 2012 – 11 / 2016	Head of Junior group Computer-assisted Interventions, DKFZ
04 / 2012 – 06 / 2012	Visiting researcher at Imperial College London (UK)
05 / 2009 – 06 / 2012	Postdoctoral fellow at the Div. Medical and Biological Informatics (Prof. Dr. Hans-Peter Meinzer), DKFZ

Education

09 / 2013	**Habilitation at the University of Heidelberg**
04 / 2009	**Dr.-Ing. with distinction (summa cum laude) awarded by KIT**
10 / 2005 – 12 / 2008	Ph.D. scholarship holder within Research Training Group 1126: Intelligent Surgery, Div. Medical and Biological Informatics, DKFZ, Heidelberg
10 / 1999 – 08 / 2005	**Diploma (Dipl.-Inform.) in Computer Science at KIT mark 1.0 (with distinction),**
09 / 2002 – 06 / 2003	Study abroad at Imperial College, London (Great Britain); degree: International diploma
09 / 1990 – 06 / 1999	Abitur **(A-level equiv.) at the Albert-Schweitzer-Gymnasium, Hamburg; mark: 1.0**
09 / 1996 – 06 / 1997	School abroad at Hallandale High School, Florida (USA); GPA: 4.6

10 / 2024	**Baden-Württemberg State Award 2024**
10 / 2024	**Winner of Critical View of Safety Challenge 2024 (Robustness)**
10 / 2024	Winner of Phakir Keypoint Tracking Challenges 2024
06 / 2024	**German Cancer Award 2024**
12 / 2023	Best Digital Resource Award (Helmholtz AI)
10 / 2023	Winner of the PitVis Surgical Instrument Detection challenge at the Medical Image Computing and Computer Assisted Intervention (MICCAI) conference
10 / 2023	MICCAI Young Investigator Award (Supervisor)
09 / 2022	**Winner of the MICCAI Surgical Action Triplet Challenge 2022**
03 / 2022	Winner of the IEEE International Symposium for Biomedical Imaging (ISBI) EndoCV Polyp Detection Challenge
10 / 2021	Winner of the GIANA polyp classification challenge at MICCAI 2021
06 / 2021	Best innovation award, runner-up at IPCAI 2021
10 / 2019	**Elected Fellow of the International MICCAI Society**
10 / 2019	Bench-to-bedside best paper award of the MICCAI OR 2.0 workshop
10 / 2019	Best paper at the 31st Meeting of the Society for Medical Innovation and Technology (SMIT)
08 / 2019	**European Laboratory for Learning and Intelligent Systems (ELLIS) AI Fellow (Health)**
09 / 2018	**Medical Image Analysis/ MICCAI best paper award 2018**
06 / 2018	Best paper at the conference Information Processing in Computer-assisted Interventions (IPCAI) 2018, runner-up
12 / 2017	**Berlin-Brandenburg Academy Prize 2017**
12 / 2017	Best pitch at Science Sparks Startup Event 2017
06 / 2017	**IPCAI Bench-to-Bedside Award 2017**
06 / 2017	Best paper award at the conference of the International Society for Computer Assisted Surgery (ISCAS) 2017
12 / 2016	Emil Salzer Prize 2016, awarded for outstanding scientific work by the DKFZ
06 / 2016	Best paper at the conference IPCAI 2016
06 / 2016	Best poster at the conference Medizin 4.0 (Hanns-Martin Schleyer Stiftung) 2016
06 / 2015	**Best paper at the conference IPCAI 2015**
10 / 2015	Best paper at the conference "Computer- und Roboterassistierte Chirurgie" (CURAC) 2015
06 / 2015	Kikuchi Frugal Technology Award 2015 (as supervisor) awarded by ISCAS
09 / 2014	Best paper, runner up, at the MICCAI workshop CARE
07 / 2014	Among "Top 40 under 40" in Science in/from Germany, selected by the business journal Capital
05 / 2013	**Heinz Maier-Leibnitz Prize, awarded by the German Research Foundation (DFG)**
03 / 2013	Best scientific contribution at the conference Bildverarbeitung für die Medizin (BVM) 2013
09 / 2011	Best scientific talk, 2nd prize, at the 23rd Meeting of the SMIT 2011, Tel Aviv, Israel
04 / 2010	**Ingrid-zu-Solms Prize for Natural Sciences 2009 / 2010, awarded by the Ingrid-zu-Solms Stiftung**
07 / 2009	Waltraud-Lewenz-Prize 2008 for outstanding scientific work awarded by the DKFZ

03 / 2009	Innovation award (material expenses) granted by the B. Braun-Stiftung
04 / 2008	Best scientific talk at BVM 2008
12 / 2007	Best Graduate Award 2007, awarded by Research Training Group 1126: Intelligent Surgery
03 / 2007	Best scientific poster at BVM 2007
07 / 2006	Award for an outstanding diploma thesis, granted by the Förderverein des Forschungszentrums Informatik, Karlsruhe
Since 2013	> 30 awards to students of the division (e.g. best thesis awards)

Scholarships

10 / 2005 – 09 / 2008	Ph.D. scholarship within Research Training Group 1126: Intelligent Surgery funded by the DFG
05 / 2002 – 07 / 2005	**Merit scholarship for outstanding achievements, German Academic Scholarship Foundation (Studienstiftung des Deutschen Volkes)**
09 / 2002 – 06 / 2003	Scholarship in support of studies abroad, German Academic Exchange Service (DAAD)
10 / 2001 – 09 / 2004	Full graduate study grant for outstanding achievements, Agilent Technologies (Waldbronn, Germany)
01 / 2000 – 03 / 2009	Online scholarship, E-fellows.net

Research Grants (Selection)

04 / 2022 – 03 / 2028	Carl Zeiss Stiftung: "Model-Based AI: Physical Models and Deep Learning for Imaging and Cancer Treatment" (co-principal investigator (PI))
04 / 2021 – 03 / 2026	**European Research Council (ERC) Consolidator Grant: "Neural Spectral Image Decoding" (principal investigator (PI))**
11 / 2020 – 10 / 2022	BMBF project pAItient: Protected Artificial Intelligence Innovation Environment for Patient-Oriented Digital Health Solutions for Developing, Testing and Evidence-Based Evaluation of Clinical Value (co-PI)
07 / 2017 – 03 / 2021	Federal Ministry of Education and Research (BMBF) VIP+ grant: "EchoTrack" (PI)
08 / 2017 – 02 / 2020	Federal Ministry for Economic Affairs and Energy (BMWi) grant: "OP 4.1" (co-PI)
06 / 2016 – 05 / 2018	Intuitive Inc. grant: "Targeted fluorescence-guided surgery with the da Vinci Si" (PI)
07 / 2015 – 06 / 2020	**ERC Starting Grant: "Computational biophotonics in endoscopic cancer diagnosis and therapy" (PI)**
06 / 2014 – 05 / 2016	Klaus Tschira Stiftung: "Endoscopy meets computer science: Precise navigation for minimally-invasive surgery" (co-PI)
07 / 2012 – 06 / 2015	**DFG Collaborative Research Project (SFB) 125: Cognition-guided surgery: "Knowledge-based navigated liver surgery" (co-PI)**
06 / 2012 – 03 / 2014	DFG Research Training Group 1126: Intelligent Surgery: "Planning and navigation in ablation therapy" (PI)
06 / 2012 – 03 / 2014	DFG Research Training Group 1126: Intelligent Surgery: "Navigated liver resection" (PI)
05 / 2012 – 04 / 2013	Intramural funding program of the DKFZ: "Radiofrequency identification (RFID) technique for tracking of medical instruments" (PI)

08 / 2010 – 07 / 2013	DFG project: "Time-of-Flight camera technique for navigated visceral surgery" (PI)

Keynotes (Selection since 2020)

10 / 2024	**Breakthrough talk at the Falling Walls 2024 Summit (Berlin, Germany)**
04 / 2024	Annual Conference of the German Society of Surgery (Leipzig, Germany)
02 / 2024	**SPIE Medical Imaging Conference (San Diego, USA)**
12 / 2023	I-X Breaking Topics in AI Conference (London, UK)
09 / 2023	German Conference on Pattern Recognition (Heidelberg, Germany)
05 / 2023	Workshop on Trustworthy Machine Learning for Healthcare (ICLR) (virtual)
04 / 2023	**IEEE ISBI (Cartagena, Colombia)**
04 / 2023	Annual Symposium of the Imaging Network Ontario (Ontario, Canada)
12 / 2022	Asian Conference of Machine Learning (ACML) Medical Imaging Workshop (virtual)
10 / 2021	International Conference on Computer Vision (ICCV) Medical Computer Vision Workshop (virtual)
04 / 2021	3rd International Workshop on Endoscopy Computer Vision (EndoCV2021, IEEE ISBI) (virtual)
12 / 2020	Neural Information Processing Systems (NeurIPS) Medical Imaging Workshop (virtual)
02 / 2020	18th Tripartite Meeting in Minimal Invasive Surgery (Genf, Austria)
Since 2019	Keynotes at MICCAI satellite events, including Women in MICCAI 2019, DALI 2023, SASHIMI 2024, DEMI 2024

Academic Services (Selection)

Since 2021	Contribution in mentorship for women programs
Since 2021	**President of the MICCAI special interest group on challenges**
Since 2021	**Editor for IEEE Transaction of Pattern Analysis and Machine Intelligence (TPAMI)**
2020 – 2026	Co-option, Faculty for Mathematics and Informatics, Heidelberg University
2020 – 2024	**Editor for Medical Image Analysis**
2020 – 2022	Editor for Nature Scientific Data
2020	Challenges chair of MICCAI 2020
2019	General (co-) chair of SMIT
2018 – 2022	**Board member of the MICCAI Society**
2018 – 2021	**General chair of the international conference IPCAI**
2017	Program co-chair for the international conference MICCAI 2017
2016	**General chair of the Surgical Data Science Initiative** and corresponding workshops in 2016 and 2019
Since 2015	General (co-) chair of the Endoscopic Vision Challenge as part of the conference MICCAI
2016 – 2018	Program co-chair for MICCAI LABELS workshop
2015	Program chair for the international conference IPCAI 2015
Since 2014	Board member of ISCAS
Since 2014	Head of the ISCAS Open Science working group

06 / 2013	General chair of the international workshop "5th ISCAS surgical workshop on computer-assisted liver surgery" at the conference Computer-assisted Radiology and Surgery (CARS) 2013
Since 2009	Member of program committee of international and national conferences including Medical Imaging with Deep Learning (MIDL), MICCAI, SPIE Medical Imaging, IPCAI, Bildverarbeitung für die Medizin (BVM), Computer- und Roboterassistierte Chirurgie (CURAC)
Since 2008	Reviewer / Associate editor for international journals including IEEE TPAMI, Medical Image Analysis, IEEE Transactions on Medical Imaging, Nature Biomedical Engineering, Nature Methods, Scientific reports
Since 2008	Reviewer for international conferences including Neurips, MICCAI, IPCAI, CURAC, BVM, MIDL

Teaching (Selection)

Since 2014	Lecturer at several summer and winter schools (e.g. at Cambridge University, Imperial College London, ETH Zürich)
12 / 2011	**Baden-Württemberg Certificate for University Didactics**
09 / 2011	Organization of the tutorial "3D surface reconstruction for laparoscopic surgery" at the conference MICCAI 2011
Since 2009	Graduate courses as lecturer for Heilbronn University / University of Heidelberg
10 / 2000 – 04 / 2001	Tutorial Computing I as student lecturer for KIT

Other activities

2023	3rd place at German Championships for basketball age 35+
2009	Winner of the German Championships in beach basketball 2009
2001 – 2005	Voluntary service as student head of the department of basketball at the Institute of Sports and Sports Science, KIT
Since 1986	Hobbies: Basketball, piano, traveling