

# Hongwei (Bran) Li

DoB: 26.02.1993

Dept. of Computer Science,  
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<http://campar.in.tum.de/Main/HongweiLi>  
Google Scholar citations: ~1500

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## RESEARCH INTERESTS

Medical Image Analysis: neuroimaging, segmentation/classification/radiomics

Machine Learning: domain adaptation, GANs, self-supervised representation learning

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## EDUCATION

Ph.D. candidate in Computer Science, **Technical University of Munich**, Germany 09.2017–present

Visiting Ph.D. student, DQBM, **University of Zurich**, Switzerland 11.2020–present

Visiting student, School of Computing, **University of Dundee**, UK 12.2016–07.2017

M.Sc. in Informatics, **Sun Yat-sen University**, China 2014–2017

B.Sc. in Electrical Engineering, **Guangdong University of Technology**, China 2009–2013

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## EMPLOYMENT

Research Assistant in University of Zurich and University Hospital Zurich, 11.2020 – present  
• Explore self-supervised deep learning for large-scale medical datasets.

Data Scientist in AI startup Orbem (part-time), 12.2019 – 12.2020  
• Developed machine learning models for 3D MR imaging.

Research Assistant in TUM University Hospital (part-time), 12.2019 – 11.2020  
• Developed generative adversarial network for MR image reconstruction.

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## FELLOWSHIPS, AWARDS AND HONORS

Individual Postdoctoral Grant (Forschungskredit from UZH, ~44k CHF) 2021

1<sup>st</sup> place of MICCAI White Matter Hyperintensities Segmentation Challenge 2017

PhD Fellowship from China Scholarship Council (~60k €) 2017

Overseas Research Fellowship from China Scholarship Council (~8k £). 2016

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## SELECTED PUBLICATIONS (15 first&co-first author, totally 40 publications with 1500+ citations)

1. **H. Li**, F. Xue, K. Chaitanya, S. Luo, I. Echov, B. Wiestler, J. Zhang, B. Menze, “Imbalance-aware Self-supervised Learning for 3D Radiomic Representation”, **MICCAI** 2021. (early accept, top 13%)
2. **H. Li\***, Johannes Paetzold\*, J. Zhang, B. Menze, *et al.*, “DiamondGAN: Unified Multi-Modal Generative Adversarial Networks for MRI Sequences Synthesis”, **MICCAI** 2019. (**25 citations**)
3. **H. Li**, G. Jiang, R. Wang, J. Zhang, W. Zheng and B. Menze, “Fully Convolutional Networks Ensembles for White Matter Hyperintensities Segmentation in MR Images”, **NeuroImage**, 2018. (**110+ citations**)
4. **H. Li**, A. Menegaux, B. Menze, D. M. Hedderich, *et al.*, “Automated Claustrum Segmentation in Human Brain MRI Using Deep Learning”, **Human Brain Mapping**, 2021. (Q1/JCR)
5. T. Finck\*, **H. Li\***, L. Grundl, P. Eichinger, M. Bussas, M. Mühlau, B. Hemmer, C. Zimmer, B. Menze, B. Wiestler, “Deep-Learning generated Synthetic Double Inversion-Recovery (DIR) Images Improve Multiple Sclerosis Lesion Detection”, **Investigative Radiology**, 2020. (Q1/JCR, top in Radiology)
6. **H. Li**, S. Gopal, A. Sekuboyina, J. Zhang, C. Niu, C. Pirkl, J. Kirschke, B. Wiestler, B. Menze, “Unpaired MR Image Homogenisation by Disentangled Representations and Its Uncertainty”. **MICCAI-UNSURE** workshop (**long oral**).

## SELECTED PUBLICATIONS (15 first&co-first author, totally 40 publications with 1500+ citations)

7. **H. Li\***, R. G. N. Prasad\*, & B. Menze, "Micro-CT Synthesis and Inner Ear Super Resolution via Generative Adversarial Networks and Bayesian Inference", International Symposium on Biomedical Imaging (**ISBI**) 2021.
  8. X. Dong\*, **H. Li\***, Z. Jiang\*, & A. W. Koch, "3D Deep Learning Enables Accurate Layer Mapping of 2D Materials", **ACS Nano**, 2021. (Q1/ JCR, top in Chemistry/Material)
  9. **H. Li** & B. Menze, K. Shi, *et al*, "Differential Diagnosis for Pancreatic Cysts in CT Scans Using Densely-Connected Convolutional Networks", 41st Annual International Conference of the IEEE Engineering in Medicine and Biology Society (**EMBC**) 2019.
  10. **H. Li**, H. Huang, W. Zheng, X. Xie, J. Zhang, "HEp-2 Specimen Classification via Deep CNNs and Pattern Histogram", International Conference on Pattern Recognition (**ICPR**), 2016.
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## ACADEMIC ACTIVITIES

Organizer committee: MICCAI Fetal Brain Tissue Annotation and Segmentation Challenge (FeTA) 2021

- Handle Docker submissions; organization

Program committee: MICCAI Perinatal, Preterm and Paediatric Image Analysis Workshop (PIPPI) 2021

Tech support: MICCAI Uncertainty Quantification in Medical Image Segmentation (QUBIQ) 2020&2021

- Handle submissions and communicate with all participants; organization

Organization support: MIDL2022

Reviewer for: MICCAI (2019-2021), MIDL (2020-2021), IEEE JBHI (2019-2021), NeuroImage, etc.

Selected Invited talks:

1. "Fully Convolutional Networks Ensembles for White Matter Hyperintensities Segmentation in MR Images", Edinburgh, SINAPSE, UK. 06.2018
  2. "Recent Machine Learning Techniques for MR Images analysis", Helmholtz Munich. 06.2019
  3. "Machine Learning in MR Image Processing", 3<sup>rd</sup> Retreat of BMMR Group. 09.2019
  4. "Towards Robust Neuroimaging Analysis: Image Synthesis and Self-Supervised Radiomics", Harvard Medical School. 08.2021.
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## MENTORING AND TEACHING

Supervision: Bachelor and master thesis; 20 student projects finished till now.

Teaching:

- Lecturer for seminar courses "Artificial Intelligence in Medical Imaging" at TUM 11/2018; 09/2020

- Teaching assistant for *Linear Algebra* at SYSU, one semester. 2015

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## HOBBIES

Volleyball, advanced level (was in China/UK Uni. league, German Bavarian Landesliga league).

Art of paper folding, geometric folding algorithms.

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## REFEREES

Bjoern Menze, Professor in University of Zurich & Technical University of Munich

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Jianguo Zhang, Professor in Southern University of Science and Technology, China

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