

Dr. IBTISAM ASLAM

MR SCIENTIST | MR PHYSICIST | ELECTRICAL ENGINEER

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PROFILE SUMMARY

- 5+ years of experience in advanced MR image acquisition, reconstruction, and analysis across cardiac, renal, and neuro imaging domains.
- Extensive hands-on expertise with Siemens 1.5T, 3T & 7T MR scanners including Prisma (VE11), Vida (XA50), and Terra.X (XA60).
- Proficient in advanced imaging and analysis software: CVI42, 3D Slicer, ANTs, FSL, and MRtrix3
- 10+ peer-reviewed journal articles and presented at 30+ high-impact conferences including ISMRM, ESMRMB, Elsevier, Springer, and PLOS ONE.
- Supervised and assisted multiple research projects in MR image reconstruction and analysis using both conventional and AI-based methods.
- Proficient in programming languages including MATLAB, Python (TensorFlow, keras etc), R, and Bash

EXPERTISE

MRI Protocol optimization | MR Safety | Cardiac MRI | Renal MRI | Neuro Imaging | Diffusion Imaging | MR Image Reconstruction | Deep Learning | Radiomics | Computer Vision | Digital Image Processing | Project management

TECHNICAL SKILLS

- **Programming:** MATLAB Programming, Python, R, Bash
- **Simulation Tools:** MATLAB, Anaconda, RStudio, Linux, High Frequency Structure Simulator (HFSS)
- **Clinical Tools:** Cardiovascular Imaging (CVI42), HOROS, FMRIB Software Library (FSL), MRtrix3, Advanced Normalization Tools (ANTs), 3D Slicer, ITK-Snap
- **Microsoft Office:** MS Word, Excel, PowerPoint, Publisher

PROFESSIONAL EXPERIENCE

Post-Doctoral Researcher | Radiology, CHUV (UNIL), Lausanne, CH | Memory Center, HUG (UNIGE), Geneva, CH |

Led advanced Diffusion Weighted Imaging (DWI) project at 7T MR to measure glymphatic flow in the human brain, including image acquisition, processing, and microstructural analysis. Also, responsible for volunteers' recruitment, scheduling for MRI, MR safety & Data acquisition (**May 2024 – present**) – **1.5years**

Research Scientist | Radiology, HUG (UNIGE), Geneva, CH |

Led & Developed novel MR Image Acquisition optimized protocol and Reconstruction methods for Cardiac & Renal MRI; Develop novel methods to streamline and automate the analysis of allograft renal chronic kidney disease (CKD) patients. Also, I was responsible for CKD patients scheduling and scanning at 3T MR (both Cardiac & Renal), Data analysis and statistics (**March 2019 – April 2024**) – **5years**

EDUCATION

Ph.D. in Life Sciences, Specialization in Physics of Biology

Mar. 2019 – Feb. 2024

University of Geneva, Geneva, Switzerland

MS Electrical Engineering (Electronics) -- 3.58/4.00

Feb. 2014 – Feb. 2016

COMSATS Institute of Information Technology, Islamabad

BS Electrical Engineering (Electronics) -- 3.23/4.00

Sept. 2008 – Sept. 2012

The University of Faisalabad, Faisalabad

REFERENCES

Prof. Dr. Ileana Jelescu (PhD)

(Head of Microstructure Mapping Lab)

Dept. of Radiology, Lausanne University Hospital (CHUV),
Lausanne, Switzerland

Email: ileana.jelescu@chuv.ch

Prof. Dr. Jean-Paul VALLÉE (MD, PhD)

(Head of Functional Cardiac Imaging)

Dept. of Radiology and Medical Informatics, HUG/UNIGE,
Geneva, Switzerland

Email: Jean-Paul.Vallee@hcuge.ch

SELECTED PUBLICATIONS

Journals (10+):

1. A. Huber, I. Aslam, L. Crowe, M. Pruijm, T. Perrot, S. Seigneux, JP. Vallée, L. Berchtold, **"T1 mapping magnetic resonance imaging predicts decline of kidney function"**, *Clinical Kidney Journal*, Volume 18, Issue 3, March 2025, sfaf032,
2. Y. Bilal, I. Aslam, M. F. Siddiqui, O. Inam, K. Amjad, J. H. Alkhateeb, and H. Omer. 2024. **"GROG Facilitated Compressed Sensing for Radial MRI."** *IEEE Access* 12: 178441–59 (2024).
3. I. Aslam, F. Aamir, M. Kassai, L. A. Crowe, P.-A. Poletti, S. De Seigneux, S. Moll, L. Berchtold, J.-P. Vallee **"Validation of automatically measured T1 map cortico-medullary difference ($\Delta T1$) for eGFR and Fibrosis assessment in allograft kidneys"**. *PLOS ONE* 18 (2023), e0277277
4. M. Pruijm, I. Aslam, B. Milani, W. Brito, M. Burnier, N. M Selby, and J-P Vallée. **"Magnetic Resonance Imaging to Diagnose and Predict the Outcome of Diabetic Kidney Disease—Where Do We Stand?"**. *Kidney and Dialysis* 2, no. 3 (2022): 407-18.
5. I. Aslam, L. A CROWE, M. KASSAI, H. Omer and JP. VALLEE, **"Real-time, Single Breath-hold, Multi-slice, 2D Cine Radial MR Image Reconstruction using sc-GROG k-t ESPIRiT"** *Biomed. Phys. Eng. Express* (2022): 8 (6), 065037
6. L. Berchtold, L. A. Crowe, C. Combescure, M. Kassai, I. Aslam, D. Legouis, S. Moll, P-Y Martin, S. De Seigneux, J.P. VALLEE, **"Diffusion-Magnetic Resonance Imaging predicts decline of kidney function in chronic kidney disease and in patients with a kidney allograft"**. *Kidney Int.* (2022). doi:10.1016/j.kint.2021.12.014
7. F. Aamir, I. Aslam, M. Irshad and H. Omer, **"Accelerated Diffusion-Weighted MR Image Reconstruction Using Deep Neural Networks"**, *Journal of Digital Imaging*, pp. 1-13, 2022.
8. F. Najeib, M. Usman, I. Aslam, S.A. Qazi and H. Omer, **"Respiratory motion-corrected, compressively sampled dynamic MR image reconstruction by exploiting multiple sparsity constraints and phase correlation-based data binning"**. *MAGMA*, Vol 33(3), pp:411-419 (2020 - Impact Factor: 1.956).
9. I. Aslam, F. Najeib, and H. Omer, **"Accelerating MRI Using GROG Gridding Followed by ESPIRiT for Non-Cartesian Trajectories,"** *Appl. Magn. Reson.*, vol. 49, no. 1, pp. 107–124, (2018 - Impact Factor: 0.77)

Conferences (30+):

1. I. Aslam, T. Pavan, F. Ribaldi, G. Quattrini, V. Garibotto, G. Frisoni, M. Pievani, I. Jelescu **"Assessing Structural and Microstructural Differences in the Hippocampal subfields and Associated White Matter Pathways in Cognitive Impairment using 7T MRI"** submitted in Swiss Dementia Forum, 6-7 Nov, 2025, Bern, Switzerland
2. I. Aslam, T. Pavan, A. Spencer, R. Martuzzi, F. Ribaldi, G. Frisoni, I. Jelescu, **"Assessing Glymphatic Dynamics in the Human Brain Using Cardiac-Gated diffusion MRI at Ultra-High Field"**, in proceedings of ISMRM & ISMRT Annual Meeting & Exhibition 2025, Honolulu, Hawai'i, USA (Abstract ID: 6711 -Power Pitch)
3. A. Huber, I. Aslam, S. Seigneux, T. Perrot, JP. Vallée, M. Pruijm, L. Berchtold, **#2484 Diffusion magnetic resonance imaging, a noninvasive tool to assess fibrosis level in both native and allograft kidneys**, *Nephrology Dialysis Transplantation*, Volume 39, Issue Supplement_1, May 2024, gfae069–0697–2484, <https://doi.org/10.1093/ndt/gfae069.697>
4. A. Huber, S. Seigneux, I. Aslam, T. Perrot, JP Vallée, M. Pruijm, L. Berchtold, **#2478 Multiparametric magnetic resonance imaging predicts decline of kidney function but does not perform better than diffusion-weighted MRI alone**, *Nephrology Dialysis Transplantation*, Volume 39, Issue Supplement_1, May 2024, gfae069–1431–2478, <https://doi.org/10.1093/ndt/gfae069.1431>
5. D. Wenz, T. Perrot, I. Aslam, G. F. Piredda, et.al. **"Prostate MRI at 7T using high-performance gradients and an 8Tx/16Rx RF array: a clinical feasibility study"**, in proceedings of 33rd ISMRM Annual Meeting & Exhibition, 04-09 May 2024, Singapore (Abstract #3517)
6. P. Calarnou, A.C. Ogier, J.B. Ledoux, I. Aslam, J.P. Vallée, J. Yerly, and R. B. V. Heeswijk, **"Navigator-gated 2D radial MR fingerprinting of the kidney at 3T"**, in proceedings of 33rd ISMRM Annual Meeting & Exhibition, 04-09 May 2024, Singapore, (Abstract #2753)
7. I. Aslam, F. Aamir, M. Kassai, L. A. Crowe, S. De Seigneux, S. Moll, L. Berchtold, J.-P. Vallee **"Validation of automatically measured $\Delta T1$ values correlated with eGFR and fibrosis assessment of allograft kidneys"**, in proceedings of 31st Joint Annual Meeting ISMRM-ESMRMB London, England, United Kingdom, 07-12 May 2022 (Abstract # 0481: Power Pitch)

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