TEL AVIV UNIVERSITY

Molecular MRI
& Translational
Machine Intelligence Lab

MSc Positions: AI Boosted Molecular MRI

The Molecular MRI and Translational Machine Intelligence (MOMENTUM) lab at the Department of Biomedical Engineering at Tel Aviv University invites applications for graduate student positions in the field of AI boosted molecular MRI.

Our lab explores the molecular mechanisms underlying brain disease and develops methods for early diagnosis and therapy optimization, with potential applications in cancer, stroke, and neurodegenerative disorders. We design and implement machine-learning-based strategies for early interventions along the imaging pipeline, enabling automatic MRI acquisition protocol discovery and quantitative molecular parameters reconstruction. For more details about our research efforts, please see our lab website at https://mri-ai.github.io and recent publications:

- Perlman O, Ito H, Herz K, Shono N, Nakashima H, Zaiss M, Chiocca EA, Cohen O, Rosen MS, Farrar CT. "Quantitative imaging of apoptosis following oncolytic virotherapy by magnetic resonance fingerprinting aided by deep learning," *Nature Biomedical Engineering*. 2021. https://doi.org/10.1038/s41551-021-00809-7

- Perlman O, Zhu B, Zaiss M, Rosen MS, Farrar CT. "An end-to-end AI-based framework for automated discovery of rapid CEST/MT MRI acquisition protocols and molecular parameter quantification (AutoCEST)," *Magnetic Resonance in Medicine*. 2022 https://doi.org/10.1002/mrm.29173

Required qualifications: An undergraduate degree in biomedical engineering, electrical engineering, physics, computer science, neuroscience, medical imaging, or related fields; strong programming skills (Python and/or Matlab); strong written and oral English communication skills.

Preferred qualifications: Previous experience in machine learning with TensorFlow and/or PyTorch, preclinical and/or clinical MRI experience, signal and image processing experience.

Interested applicants are welcome to send an up-to-date curriculum vitae and contact information for two/three references to Dr. Or Perlman: operlman@mgh.harvard.edu.

We are committed to providing a professional, friendly, safe and welcoming environment for all lab members, regardless of gender, sexual orientation, disability, race, ethnicity, religion, national origin or other protected class.