Laboratory for Imaging Science and Technology (LIST)

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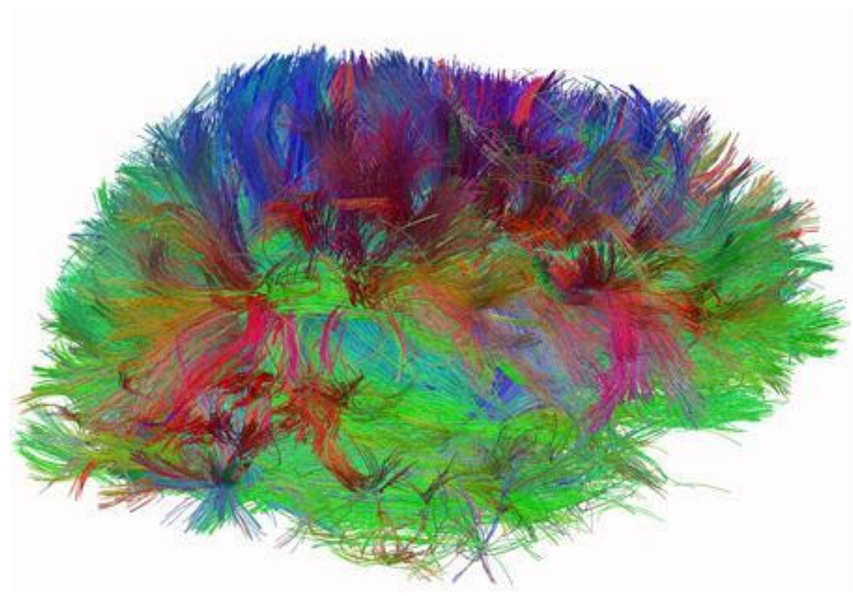
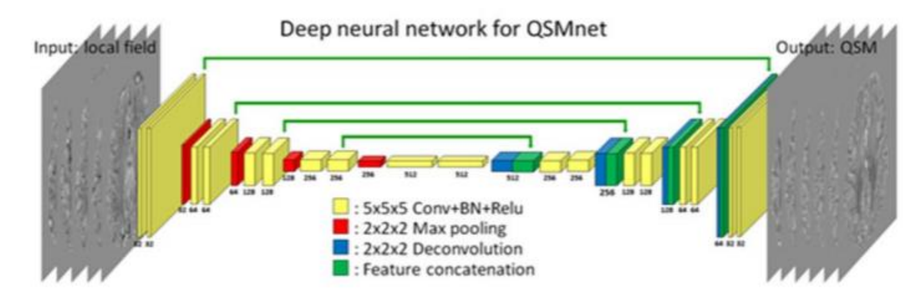
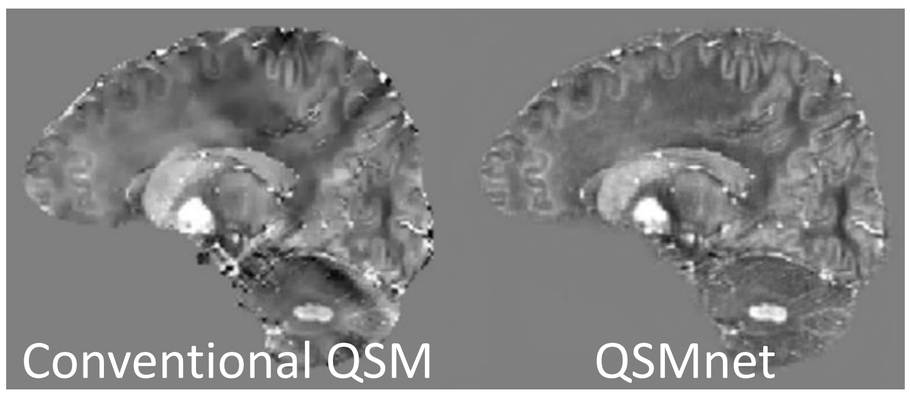
M.S candidate
Jae Yeon Yoon, Chungseok Oh, Hwihun Jeong, Juhyung Park, Jiye Kim



Who are we?

- We are a biomedical imaging research group (LIST) at EECS, SNU
- Primary imaging modality is MRI
- Primary research focuses are:
  1) New imaging methods and systems
  2) "Physics" powered machine learning for biomedical imaging
  3) Biophysical characteristics of the brain
- Visit our webpage (http://list.snu.ac.kr)





Magnetic Resonance Imaging

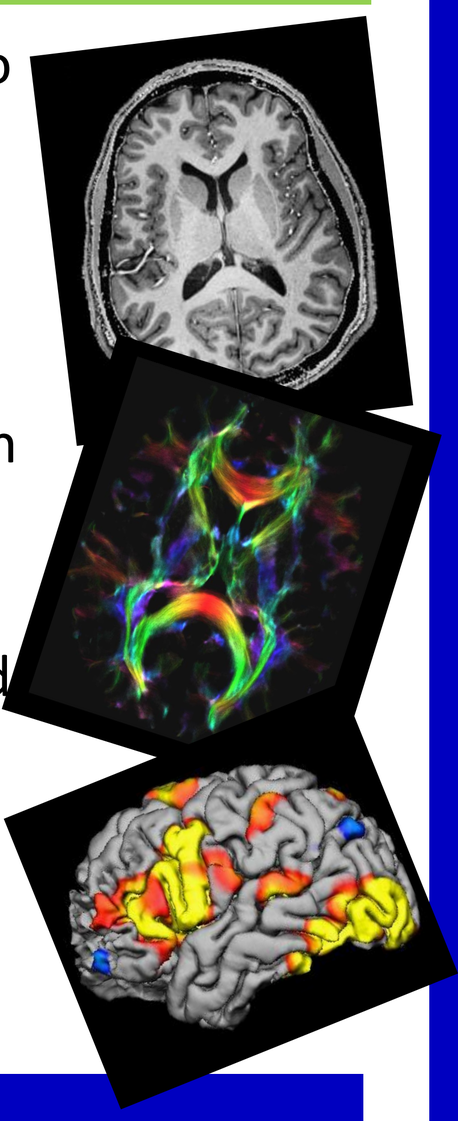
- MRI utilizes magnetic fields to visualize cross sectional images of the body

- Important device for the diagnosis and prognosis of various diseases or injuries
- In LIST, we develop a new imaging methods and imaging systems using signal processing and machine learning

Neuroimaging & Brain research

BRAIN FACTS:
Weight: 1.4 kg
Surface: 3000 cm^2
Neurons: $3x10^{10}$
Axon Length:
1.6×10^{10} cm
Oxygen Comp: 20%

- MRI is a widely used tool to explore the mysteries of the brain
- MRI visualizes details of brain structures and microstructural information (e.g. fiber orientation)
- Functional MRI (fMRI) measures brain activity and dynamics of brain states
- In LIST, we explore biophysical properties of brain and brain function



Related courses

Undergraduate courses:
- Signals and Systems
- Linear Algebra
- Digital Signal Processing
- Probability and Random variable

Graduate courses:
- Medical Imaging (undergrads are welcomed)
- Special topics in signal processing: MRI physics and image reconstruction

Internship?

Please contact Prof. Lee (jonghoyi@snu.ac.kr)