

# Computational Biomedical Imaging Group

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The **Computational Biomedical Imaging Group** (CBIG) develops novel machine learning and artificial intelligence algorithms for a variety of imaging problems in medicine and biology. Active research areas include image reconstruction, image analysis, and quantification. Research efforts are taking place at two complementary levels: the development of mathematical tools for imaging, and applied projects in collaboration with clinical researchers.

The main application areas include MRI and microscopy. The group uses the state-of-the-art MRI facilities at the Magnetic Resonance Research Facility.

## Who We Work With

- Canon Medical Research
- Iowa Institute for Artificial Intelligence
- Iowa Institute for Biomedical Imaging
- Iowa Neuroscience Institute
- National Institute on Aging
- National Institute of Biomedical Imaging and Bioengineering
- National Science Foundation

## Lab Director: Mathews Jacob



- Professor of Electrical and Computer Engineering, University of Iowa
- PhD: Biomedical Imaging, Swiss Federal Institute of Technology
- MS: Signal Processing, Indian Institute of Science
- BSE: Electrical & Communication Engineering, National Institute of Technology

**IOWA**

Technology  
Institute

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# RESEARCH FOCUS & HIGHLIGHTS

- Rapid acquisition and reconstruction of ultra-high-resolution images
- Image reconstruction using model-based deep learning
- Free breathing and un-gated cardiac and lung MRI
- Manifold based recovery of image time series
- Deep structured low-rank algorithms for uncalibrated imaging
- Continuous domain compressed sensing

## LEARN MORE



### SCHEDULE A VISIT

by contacting Mathews Jacob at [mathews-jacob@uiowa.edu](mailto:mathews-jacob@uiowa.edu) or 319-335-6420



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on our website [cbig.iibi.uiowa.edu](http://cbig.iibi.uiowa.edu)

