Master of Science in Biomedical Image Computing (BIC)

Biomedical image computing is an interdisciplinary field that influences the formation and analysis of biomedical images, as well as the design, optimization and characterization of imaging systems, using computational- and data-driven techniques. Advances in artificial intelligence (AI) and computing are revolutionizing the field of biomedical imaging. This transformation calls for a new generation of talents with proficiency in biomedical imaging, AI and high-performance computing. Offered through the world-renowned University of Illinois Urbana-Champaign, our MS in BIC degree addresses the need for efficient, rigorous training at this exciting and rapidly evolving intersection.

Degree can also be completed fully online!

What Sets This Degree Apart

### Coursework for Core Skills in Imaging and AI
Students will be instantly and completely immersed in the field of imaging science at the confluence of biomedical imaging and machine learning. Graduates from this degree program will be prepared for careers as engineers who are developing, translating, and evaluating biomedical imaging technologies that leverage machine learning methods.

Practical and Experiential Training
Students will gain hands-on experiences with computational imaging and machine learning — throughout the duration of the program and a capstone project — that involve real-world data and problems. They will also receive training in critical aspects of high-performance computing that provide immediate value to students and employers.

World-class Faculty and Industrial Connections
The students will have the opportunities to work with leading imaging researchers, clinicians and industry partners who are actively working with a wide range of modern biomedical imaging modalities and applications.
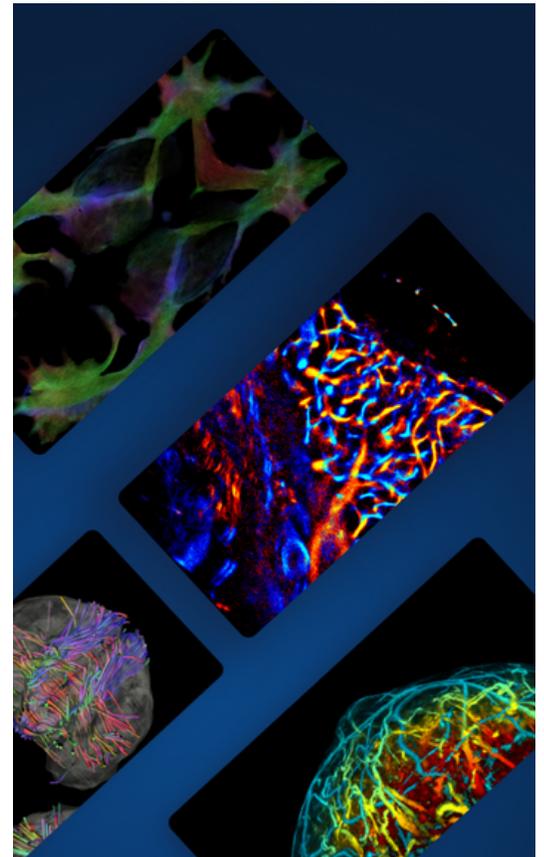
Are You...

- An early career engineering professional looking for advanced training in imaging and machine learning?
- A recent graduate looking to enter the AI and imaging industry with more technical know-how than a traditional entry-level professional?
- A student looking to differentiate yourself with an advanced degree from a top engineering school?
- Interested in building a career in the medical and health care field?

Then Illinois' Master of Science in Biomedical Image Computing (MS in BIC) program is for you!

Rolling admission — apply anytime!

bioengineering.illinois.edu

Degree Requirements

The MS in Biomedical Image Computing (MS in BIC) program can be completed in three semesters while on-campus or through a flexible, fully remote online program. Students must complete 36 credit hours of approved coursework, consisting of core and elective classes.

Curriculum - Core Courses

BIOE 483 Biomedical Computed Imaging Systems
BIOE 484 Statistical Analysis of Biomedical Images
BIOE 485 Computational Mathematics for Machine Learning and Imaging
BIOE 486 Applied Deep Learning for Biomedical Imaging
BIOE 488 Applied High-Performance Computing for Imaging Science
BIOE 489 Regulations, Ethics and Logistics in Biomedical Applications of Machine Learning
BIOE 580 Foundations of Imaging Science
BIOE 586 Deep Generative Models in Bioimaging
BIOE 588 Biomedical Image Computing Capstone Project Literature Review
BIOE 589 Biomedical Image Computing Capstone Project

In addition, students are able to choose from a wide selection of technical electives that cover topics relevant to the field of imaging science and computing.

Industrial Connections:

Siemens Healthineers   Subtle Medical
Whiterabbit.ai   Mayo Clinic
Microsoft   Carle Foundation Hospital