

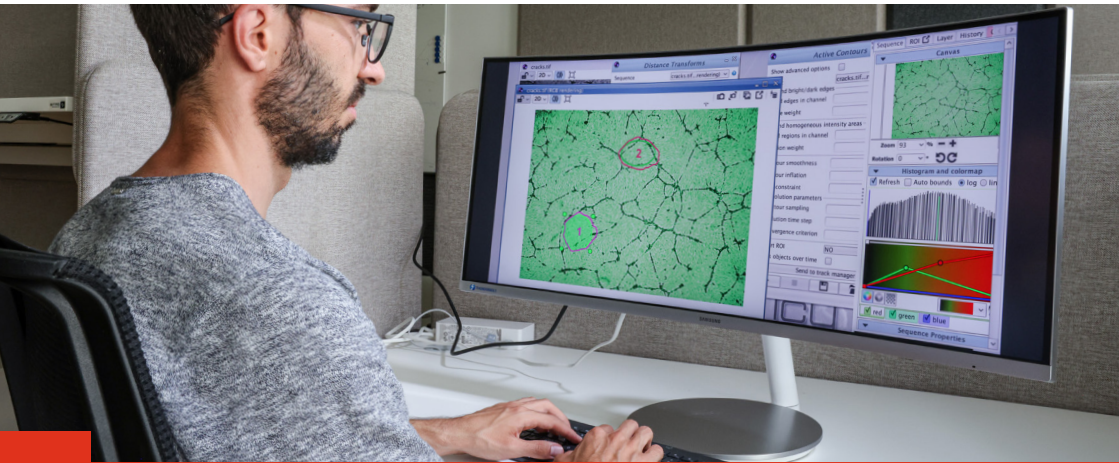
 **4-DAY COURSE – MICROCREDENTIAL (MC)**

Image Analysis in the Age of AI: Designing Efficient Imaging Workflows

TARGET AUDIENCE

Engineers, technicians, CTOs, R&D consultants, and scientists who use imaging (in engineering, life sciences, manufacturing, etc.) and are seeking to gain skills in image analysis algorithms and AI-based approaches.

Basic programming knowledge is recommended. Participants should bring their own laptop and be able to install open-source software.

ORGANIZATION

- Center for Imaging, EPFL

OVERVIEW

From real-time inspection to quantification, imaging is omnipresent in R&D, engineering, manufacturing, and life sciences — spanning scales, processes, and applications. Driven by advances in high-resolution, high-dimensional imaging technologies and by the implementation of machine learning, image data has become significantly more powerful.

Building on the core principles of image processing, how to combine imaging, engineering, and deep learning to design more efficient image analysis workflows that support higher quality control and more effective automation? How can we unlock new opportunities for AI-powered imaging, while addressing related risks and challenges?

OBJECTIVES

- Gain insights into cutting-edge imaging techniques and into the latest trends shaping the imaging industry
- Develop the visual expertise required to capture, process, enhance, and interpret image data
- Acquire hands-on skills in open-source software and AI models for effective image analysis
- Explore the opportunities and risks of AI-powered image analysis workflows in industry
- Learn the best practices in image analysis for industrial and scientific applications



4-day course:

Thursday, March 26, 2026

Friday, March 27, 2026

Wednesday, April 22, 2026

Thursday, April 23, 2026

From 9:00 a.m. - 5:00 p.m.



CHF 2'900.-

10% special discount for contributing members of EPFL Alumni and EPFL partners

LEARN MORE



EPFL, Lausanne, Switzerland



Online registration

Registration deadline : January 12, 2026

Number of participants is limited



Microcredential, 2 ECTS credits

PROGRAM

DAY 1 – Working with Image Data

- Integrative imaging, image quality, and visual expertise development
- Image processing: from operators to convolutional neural network (CNN)
- Workshop: handling and visualization of multidimensional images (3D/Time) with open-source software (e.g.: ImageJ/FIJI/Napari)
- Industry expert presentation: trends in imaging, project management, and system deployment

DAY 2 – Mastering Image Analysis

- Image quantification, extraction of visual features, and object detection
- Strategies to solve image analysis problems
- Workshop: building an image analysis pipeline
- Discussion: evaluation and critical thinking on system design and performance

DAY 3 – Shifting to AI for Image Segmentation

- Model-based and data-driven approaches
- Image segmentation and deep learning
- Workshop: applying segmentation, algorithmic, pre-trained models, customized deep learning models
- Industry expert presentation: transitioning to AI — risks, challenges, and opportunities

DAY 4 – Understanding Computational Imaging

- Cutting-edge imaging techniques and correlative imaging
- Image reconstruction, motion, 3D, and inverse problems
- Workshop: coding a complete image analysis workflow from A to Z

Assessment format:

Multiple-choice questions and short application-based questions.

PROGRAM DIRECTOR

- **Prof. Michael Unser**, *Academic Director, Center for Imaging, EPFL*

PROGRAM COMMITTEE

- **Dr. Daniel Sage**, *Head of Software Development, Biomedical Imaging Group and Center for Imaging, EPFL*
- **Dr. Edward Andò**, *Head of the Image Analysis Hub, Center for Imaging, EPFL*

INSTRUCTORS

- **Dr. Daniel Sage**, EPFL lecturer
- **Dr. Edward Andò**, EPFL lecturer

Additional experts from EPFL and industry will teach and give presentations.