Neural Networks in Bioimage Analysis

9 – 11 May 2023, IMCF BIOCEV

Program and schedule of the course may be subjected to change.

Day 1 | Tuesday May 9th		
9:00-9:30	Introduction and welcome	AB/ZC
9:30-10:30	Lecture: Introduction to Image Analysis (part 1) + Hands-on exercises with ImageJ/FIJI	ZC
10:30-11:00	Coffee break	
11:00-12:00	Lecture: Introduction to Image Analysis (part 2) + Hands-on exercises with ImageJ/FIJI	ZC
12:00-13:00	Lunch break	
13:00-14:15	Lecture: Machine learning for Image Analysis + Hands-on exercises with google collab	AA
14:15-15:00	Lecture: Deep learning for Image Analysis	LB
15:00-15:30	Coffee break	
15:30-16:00	Guest speaker lecture: '3D blob segmentation using StarDist in Python'	JS
16:00-16:30	Lecture: Overview of freely accessible tools for AI in Image Analysis	AA
16:30	Recap and wrap-up	

Day 2 | Wednesday May 10th		
9:00-9:15	Warm-up (technical prep)	
9:15-10:00	Lecture: Overview of the features and capabilities of NIS Elements software with AI modules	LIM
10:00-10:30	Hands-on exercises: NIS Elements AI module (part 1)	LIM
10:30-11:00	Coffee break	
11:00-12:30	Hands-on exercises: NIS Elements AI module (part 2)	LIM
12:30-13:30	Lunch break	
13:30-14:15	Hands-on exercises: NIS Elements AI module (part 3)	LIM
14:15-14:45	Hands-on session: ZeroCostDL4Mic U-Net in google collab	AA
14:45-15:30	Hands-on session: AI-based Image segmentation with Cellpose	ZC
15:30-16:00	Coffee break	
16:00-16:30	Guest speaker lecture: FAIRy Deep Learning for Microscopy Image Analysis	EGM
16:30-17:00	Hands-on session: AI-based Image segmentation with deepImageJ and StarDist	ZC
17:00	Recap and wrap-up	

Day 3 | Thursday May 11th		
9:00-9:15	Warm-up (technical prep)	
9:15-10:30	Group project: AI-based Image segmentation	
10:30-11:00	Coffee break	
11:00-12:30	Group project: AI-based Image segmentation	
12:30-13:30	Pizza time	
13:30-14:30	Group project: Presentation of results and discussion	
14:30	Final remarks	

Speakers: Aleš Benda (AB); Zuzana Čočková (ZC); Anna Agafonová (AA); Lenka Backová (LB); Junel Solis (JS); Michal Kuderjavý, Martin Berger, Martin Zahálka and Martin Sajdl of Laboratory imaging (LIM); Estibaliz Gómez de Mariscal (EGM)