



ESSO Course on Artificial Intelligence in Healthcare-Interactive Workshop for Surgeons and Radiologists

22-23 May 2026

Lisbon, Portugal

In partnership with Champalimaud Foundation & Humanitas University

Chairs (physicians)

Pedro Gouveia, Champalimaud Foundation, Lisbon, PT

Giuseppe Catanuto, Humanitas University -Istituto Clinico Catanese Misterbianco, IT

Chairs (technicians)

Tiago Marques, Champalimaud Foundation, Lisbon, PT

João Santinha, Champalimaud Foundation, Lisbon, PT

Faculty members (tbc)

Maria Batrakova, Champalimaud Foundation, Lisbon, PT

Maria João Cardoso, Champalimaud Foundation, Lisbon, PT

Saverio D'Amico, Humanitas Research Hospital, Milan, IT

Yasna Forgani, Champalimaud Foundation, Lisbon, PT

Nuno Louçao, Champalimaud Foundation, Lisbon, PT

Paolo Oliva, Humanitas Research Hospital, Milan, IT

David Pinto, Champalimaud Foundation, Lisbon, PT

Francesco Pappalardo, University of Catania, Catania, IT

Rafaela Timóteo, Champalimaud Foundation, Lisbon, PT

Program

Friday 22nd May

08:40 – 09.00	Welcome and introduction <i>Andrea Decensi - Breast Unit Director at Champalimaud Foundation</i>
09.00 – 09.15	Artificial intelligence/ Generative AI Basics of machine learning and deep learning

	<i>T. Marques</i>
09:15 – 09.30	Introduction to Python, Jupyter, and Google Colab
	<i>T. Marques</i>
09.30 – 09.45	Datasets, and best practices to train AI models
	<i>S. D'Amico</i>
09.45 – 10.00	Generative AI and Agentic AI in healthcare
	<i>M. Batrakova</i>
10:00 -10:30	Coffee Break
10:30 – 11.00	Lecture: AI in Healthcare
	<i>P. Gouveia</i>
11:00 – 13.00	Workshop
	11.00 – 12.00: Elementary coding
	<i>T. Marques</i>
	12.00 – 12.15: Basics of CAD \ CAM - 3D printing
	<i>P. Oliva</i>
	12.15 – 12.30: 3D slicer + Creating 3D digital patient Specific models for surgical planning
	<i>J. Santinha, P. Oliva</i>
	12.30 – 13.00: Exercises on imaging segmentation tools using 3D slicer (II)
	<i>J. Santinha, N. Louçao, Y. Forgani</i>
13.00– 14.00	Lunch break
14.00 – 15.30	Workshop
	Exercises on imaging segmentation tools using 3D slicer (II)
	<i>J. Santinha, N. Louçao, Y. Forgani</i>
15.30-16.00	Coffee Break
16.00 – 16.20	Avatars and Digital twins
	<i>T. Marques</i>
16.20 – 16.40	Extended reality and breast cancer
	<i>R. Timóteo</i>
16.40 – 17.30	Workshop
	Digital Surgery LAB and XR headsets

Saturday 23rd May

Workshop

08.30 – 09.30	AI Agents (I) <i>M. Batrakova, P. Gouveia</i>
09.30 – 09.45	Emulation of historical trials about breast conserving surgery vs. mastectomy with synthetic cohorts trained on contemporary SEER database <i>G. Catanuto</i>
09.45 – 10.00	In silico simulation of immune response to pembrolizumab in TNBC breast cancer with a mechanistic model <i>G. Catanuto</i>
10.00 – 10.30	Exercises on imaging segmentation tools using 3D slicer (III) <i>J. Santinha, N. Louçao, Y. Forganí</i>
10.30 – 11.00	Coffee break
11.00 – 12.00	AI Agents (II) <i>M. Batrakova, P. Gouveia</i>
12.00 – 12.15	Immersive environments for surgical patients <i>D. Pinto</i>
12.15 – 12.30	The Cinderella Project <i>M J. Cardoso</i>
12.30 – 12.50	The surgeon in research: what makes the difference in a scientific career <i>M J. Cardoso</i>
12.50 – 13.05	Model Credibility and Regulation in Healthcare: Mechanistic Modeling, Simulation, and AI-Based Systems <i>F. Pappalardo</i>
13.05 – 13.15	Final remarks, future projects <i>All course Chairs</i>