

Preliminary Programme

**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 Forгани, Champalimaud Foundation, Lisbon, PT

Nuno Loução, 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

Programme

Friday 22 May

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|---------------|--|
| 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 | Computer program languages and applications
<i>T. Marques</i> |

- 09:30 – 09:45 Datasets, and best practices to train AI models
S. D’Amico
- 09:45 – 10:00 Generative AI and Agentic AI in healthcare
M. Batrakova
- 10:00 -10:30** **Coffee Break**
- 10:30 – 11:00 **Lecture: AI in Healthcare**
P. Gouveia
- 11:00 – 13:00 **Workshop**
- 11:00 – 12:00: Elementary coding
T. Marques
- 12:00 – 12:15: Basics of CAD \ CAM - 3D printing
P.Oliva
- 12:15 – 12:30: 3D slicer + Creating 3D digital patient Specific models for surgical planning
J. Santinha, P.Oliva
- 12:30 – 13:00: Exercises on imaging segmentation tools using 3D slicer (II)
J. Santinha, N. Loução, Y. Forgani
- 13:00 – 14:00** **Lunch break**
- 14:00 – 15.30 **Workshop**
Exercises on imaging segmentation tools using 3D slicer (II)
J. Santinha, N. Loução, Y. Forgani
- 15.30-16:00** **Coffee Break**
- 16:00 – 16:20 Avatars and Digital twins
T. Marques
- 16:20 – 16:40 Extended reality and breast cancer
R. Timóteo
- 16:40 – 17:30 **Workshop**
Digital Surgery LAB and XR headsets

Saturday 23 May

- Workshop**
- 08.30 – 09:30 AI Agents (I)
M. Batrakova, P. Gouveia

- 09:30 – 09:45 Emulation of historical trials about breast conserving surgery vs. mastectomy with synthetic cohorts trained on contemporary SEER database
G. Catanuto
- 09:45 – 10:00 In silico simulation of immune response to humanized monoclonal antibody immunotherapy in TNBC breast cancer with a mechanistic model
G. Catanuto
- 10:00 – 10:30 Exercises on imaging segmentation tools using 3D slicer (III)
J. Santinha, N. Loução, Y. Forgani
- 10:30 – 11:00 Coffee break**
- 11:00 – 12:00 AI Agents (II)
M. Batrakova, P. Gouveia
- 12:00 – 12:15 Immersive environments for surgical patients
D. Pinto
- 12:15 – 12:30 The Cinderella Project
M.J. Cardoso
- 12:30 – 12:50 The surgeon in research: what makes the difference in a scientific career
M.J. Cardoso
- 12:50 – 13:05 Model Credibility and Regulation in Healthcare: Mechanistic Modeling, Simulation, and AI-Based Systems
F. Pappalardo
- 13:05 – 13:15 Final remarks, future projects
All course Chairs