Course : AI and robotics for healthcare

concrete applications

Seminar - 2d - 14h00 - Ref. IAZ

Price : 1850 € E.T.

4,6 / 5

New technologies are improving and offering new tools to medicine, with artificial intelligence and robotics at their core, and constantly evolving to adapt to the healthcare field. Between algorithms, machine learning, deep learning, robotics, IoT and implants, this seminar will enable you to grasp all the issues at stake in the world of MedTech and the technologies used to treat, save or improve patients' lives.

Teaching objectives

At the end of the training, the participant will be able to:

- Have a better definition of the possibilities of AI and robotics in the world of medicine/health.
- Discover the ecosystem, architectures, possibilities and limits of medical technology
- Identify current and future uses: augmented human beings, IoT, IoB
- Define the resources required for your MedTech project
- Better identify markets, challenges and future developments in digital health (e-health)

Intended audience

Business decision-makers looking for an overview of new technologies and project opportunities linked to healthcare, medicine, AI and robotics.

Prerequisites

No special knowledge required.

PARTICIPANTS

Business decision-makers looking for an overview of new technologies and project opportunities linked to healthcare, medicine, AI and robotics.

PREREQUISITES

No special knowledge required.

TRAINER QUALIFICATIONS

The experts leading the training are specialists in the covered subjects. They have been approved by our instructional teams for both their professional knowledge and their teaching ability, for each course they teach. They have at least five to ten years of experience in their field and hold (or have held) decision-making positions in companies.

ASSESSMENT TERMS

The trainer evaluates each participant’s academic progress throughout the training using multiple choice, scenarios, hands-on work and more.
Participants also complete a placement test before and after the course to measure the skills they’ve developed.

Practical details

Storyboarding workshops

Discussions, experience-sharing, case studies.

Teaching methods

Active pedagogy based on examples, demonstrations, experience sharing and case studies.

Course schedule

1 Introduction, definitions, background

- Software and hardware developments in the medical world.
- Algorithms and expert systems in healthcare.
- Artificial intelligence (AI) and robotics, synergy between man and machine.
- Supervised and unsupervised learning.
- Key historical milestones.
- Machine learning, deep learning, genetic algorithms.
- Semantic analysis, NLP, NLU, NLG.
- Mapping useful definitions.

2 Markets, jobs and uses in medicine

- Impact on healthcare and digital professions.
- The supply and relationship of care linked to new technologies.
- BioTech, MedTech and e-health.
- Key players and markets: France, Europe, worldwide.
- Reception, patient management.
- AI and medical emergency management.
- Evolution and typology of uses.
- Strategic direction.

3 Medical algorithms and artificial intelligence

- Big data, databases and data warehouses.
- Knowledge coding.
- Algorithms and medical decision support systems.
- Binary trees, GAN, BIG-GAN.
- From theory to practice.
- 3D simulations and digital twins.
- AI and health in the general population.
- Collect, filter and train a data set.
- Statistics, mathematics and 2D/3D geometry applied to medical data.

4 Medical digital imaging

- Formats, software, frameworks and digital processing tools.
- Optimization, detection of anomalies, shapes and objects.
- Optical character recognition (OCR).
- X-rays, CT scans and optimization.
- MRI, angiography, neuroimaging.
- Photographs, videos, 2D/3D/360, sections, fibroscopies, colonoscopies.
- False colors, data visualization/DataViz.
- Automated creation of medical datasets.

TEACHING AIDS AND TECHNICAL RESOURCES

• The main teaching aids and instructional methods used in the training are audiovisual aids, documentation and course material, hands-on application exercises and corrected exercises for practical training courses, case studies and coverage of real cases for training seminars.
• At the end of each course or seminar, ORSYS provides participants with a course evaluation questionnaire that is analysed by our instructional teams.
• A check-in sheet for each half-day of attendance is provided at the end of the training, along with a course completion certificate if the trainee attended the entire session.

TERMS AND DEADLINES

Registration must be completed 24 hours before the start of the training.

ACCESSIBILITY FOR PEOPLE WITH DISABILITIES

Do you need special accessibility accommodations? Contact Mrs. Fosse, Disability Manager, at psh-accueil@orsys.fr to review your request and its feasibility.

5 Risk prevention, prediction and estimation

- Epidemiological surveillance.
- Medical research, predictive medicine.
- Psychology, psychiatry, chatbots and IoB (Internet of Behavior).
- Monitoring, physical conditions.
- Cardiology, stroke prevention.
- Cancer prediction.
- Quality of life, hygiene and traceability.
- Virtual, augmented and mixed reality in healthcare.

6 Robotics, IoT (Internet of Things), sensors and implants

- Telemedicine, computer-assisted surgery, surgical robots.
- Companion and assistance robot.
- Deafness, cochlear implant, cranial implant.
- Blindness, ocular and retinal implants.
- Diabetes, implants, glycemic control.
- Brain-machine interface (BMI), IoT and IoB.
- Exoskeletons and prostheses for mobility.
- Laboratory equipment.

7 Legislation, standards, ethics and safety

- Individual and collective ethical choices.
- Paradoxes and ethical dilemmas.
- Privacy, ransomware, cybersecurity and operational security.
- Health Data Warehouse (HDW).
- Insurance, mutuals, liability and e-health.
- Health data host (HDS).
- Data privacy, sensitive data, RGPD.
- Technical and technological constraints.
- Regulator, government, senate, bioethics committees.

8 Future trends, the future of healthcare

- Quantum computers and simulations.
- Augmented man and transhumanism.
- New bio-organic components.
- Neuromorphic processors.
- Invasive and non-invasive medical nanorobotics.
- 100% connected, predictive medicine.
- The end of diagnostic wandering.
- Care for rare and orphan diseases.

Dates and locations

REMOTE CLASS
2026 : 24 Mar., 2 July, 15 Oct., 8 Dec.

PARIS LA DÉFENSE
2026 : 1 Apr., 25 June, 8 Oct., 1 Dec.