

Program Overview

Fellowship in Musculoskeletal Radiology, Artificial Intelligence and Entrepreneurship

This Program Overview provides an insightful summary of the agenda designed for our comprehensive 52-week fellowship programme. We understand the importance of structure and well-planned learning experiences to maximize the educational journey of our participants. With this in mind, we have meticulously crafted a dynamic and engaging 52-week agenda that offers a diverse range of activities, enabling participants to dive deeply into various aspects of Musculoskeletal (MSK) Radiology, Artificial Intelligence and Entrepreneurship.

Weekly Schedule

Each week of the fellowship programme presents a unique opportunity for participants to immerse themselves in intensive learning, hands-on training, and interactive sessions. The weekly agenda has been thoughtfully curated to strike a balance between theoretical knowledge, practical application, and professional and scientific discussions. We aim to foster a stimulating environment where participants can expand their expertise, cultivate critical thinking skills, and develop lasting professional relationships.

Throughout the week, one can expect a blend of didactic lectures, case discussions, workshops, research opportunities, and clinical rotations. These carefully structured activities not only provide a comprehensive understanding of the subject matter but also allow participants to refine their diagnostic skills, enhance their decision-making abilities, and stay abreast of the latest advancements in their respective fields.

HORA	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
09:00-09:30	General	MSK Pathological Conditions Analysis				Self-Study
09:30 - 11:00	Training	General Training	General Training	General Training	General Training	
	Report Training	Report Training	Report Training	Report Training	Report Training	
11:00 - 11:15	Coffee Break					
11:15-12:15	General Training	General Training	MDT Discussion	General Training	Theme Presentation	
12:15 - 13:15			General Training		General Training	
	Report Training	Report Training	Report Training	Report Training	Report Training	
13:15 - 13:45	Lunch					
13:45 - 15:45	General Training	General Training	General Training	General Training	General Training	
	Report Training	Report Training	Report Training	Report Training	Report Training	
15:45 - 16:00	Coffee Break					
16:00 - 17:00	General Training	General Training	General Training	General Training	General Training	
	Report Training	Report Training	Report Training	Report Training	Report Training	
17:00 - 17:30	Discussion	Discussion	Discussion	Discussion	Discussion	
17:30 - 18:00	Assessment					
18:00	Self-Study					

Table 1 - Representative weekly agenda of the fellowship program; In blue rows are represented the non-educational hours.

a) MSK Pathological Conditions Analysis

The supervisor will address any short questions raised in the cases, as well as any persistent questions regarding anatomy, MR signal changes, pitfalls, and normal vs. abnormal findings.

In this activity, the supervisor aims to present the main imaging pitfalls in one pathological condition, not directly limited to one anatomical joint but providing a general overview of the pathology or addressing any scientific doubts raised by the learner."

b) General Training or Reporting Training

There are two options available in the mornings:

- a. **General Training:** If it is the fellow's first day or if the fellow specifically requested it, there will be a general training session covering the following topics:

- Software training set
- Data protection
- Structured reporting
- Fellowship general guidelines
- Ideas for future business or patents
- AI, labelling, and research resources
- Weekly radiology presentation methodology

- b. **Reporting Training:**

This option provides general training on reporting MR studies in Musculoskeletal Radiology. The training includes:

- 3 cases per hour/period
- Structured reporting according to predefined models
- Pre-reporting that will be extensively reviewed and discussed daily.

This activity is included in the recognized CME activity "Reading scientific and education material" as the cases are part of the educational material.

c) MDT Discussion (MDT/Radiologists/Informatics)

This weekly panel consists of at least 2 radiologists who engage in a general discussion of challenging cases. When available, clinicians are invited for clinical discussions. Additionally, other topics authorized for discussion include Artificial Intelligence challenges, labelling business plans with digital health and economics specialists, biomedical engineers, data scientists, etc. This meeting serves as a truly multidisciplinary team meeting, covering both clinical and non-clinical issues.

d) Theme Presentation and Review

These sessions serve as a platform for participants to present their in-depth exploration of the weekly themes, creating an interactive and collaborative learning environment.

Each week, participants have the opportunity to deliver 60-minute theoretical presentations that delve into critical aspects of the field. These presentations primarily focus on illuminating potential pitfalls, highlighting normal variants, and fostering insightful discussions on differential diagnoses. By delving into these nuanced topics, participants deepen their understanding of the complexities within Musculoskeletal Radiology, Artificial Intelligence, and Entrepreneurship.

To ensure thorough preparation and active engagement, a comprehensive list of presentation subjects is provided at the beginning of the fellowship. This enables participants to embark on a journey of research, analysis, and critical thinking as they delve into the specific themes related to each week's focus.

The theme presentation sessions not only enable participants to share their knowledge and expertise but also foster a vibrant learning community where ideas are exchanged, perspectives are enriched, and new insights emerge. By actively participating in these sessions, participants contribute to the collective learning experience and broaden their horizons in the topics

Weekly Presentations

Within this chapter, we present an insightful overview of the weekly themes that encompass our 52-week fellowship programme. The carefully curated topics represent a harmonious blend of MSK Radiology, AI, and Entrepreneurship, enabling you to grasp the interplay between these disciplines.

Below, you can find a table that outlines the weekly topics. This table serves as your compass, offering a clear roadmap of the thematic progression throughout the fellowship program.

Week	Topic
W1	Knee: Anatomy and Variants, Protocols
W2	Knee: Meniscal injuries, including post-op
W3	Knee: Cruciate & collateral ligaments, including post-op
W4	Knee: Posterolateral & medial corners
W5	Knee: Cartilage
W6	Shoulder: Rotator cuff
W7	Shoulder: Instability
W8	Shoulder: Impingement: extrinsic & intrinsic
W9	Shoulder: Rotator interval and biceps
W10	Shoulder: Capsulitis, degenerative shoulder arthropathy
W11	Shoulder: Postoperative shoulder
W12	Ankle: Osseous impingements; osteochondral lesions
W13	Ankle: Ankle acute to chronic ligaments injuries
W14	Ankle & Foot Tendons & Heel pathologies
W15	Fore & midfoot joint pathology
W16	Fore & midfoot: Usage of contrast
W17	Elbow Ligaments & Tendons injuries
W18	Elbow: Other conditions around the elbow
W19	Wrist: overuse
W20	Wrist: Wrist Ligaments incl. postoperative
W21	Wrist: TFCC incl. postoperative
W22	Finger: joints, tendons & pulleys.
W23	Hip: Intraarticular lesions and variants
W24	Hip: Extraarticular pathologies, except the groin
W25	Hip: Groin injuries
W26	Hip: Postoperative hip
W27	Hip: Inflammatory disease in peripheral joints
W28	Spine: Degenerative Disease
W29	Spinal Trauma
W30	Spine 3: Inflammatory spin
W31	Bone tumours & look-alikes, avoiding pitfalls
W32	Soft tissue tumours & look-alikes, avoiding pitfalls
W33	AI, clinical applications in bone tumours
W34	Metastases
W35	Bone marrow: from reconversion to infiltration

W36	Infection
W37	Muscle injuries
W38	Nerve compression syndromes – shoulder, elbow
W39	AI: How to prepare a Dataset
W40	AI: How to label/annotate MRI imaging
W41	AI: State of the art
W42	AI: Python Basics
W43	AI: How to prepare a research paper
W44	Entrepreneurship: How to prepare a pitch for investors
W45	Entrepreneurship: How to prepare a business plan
W46	Entrepreneurship: How to apply for funding
W47	Osteoarthritis and Rheumatoid arthritis
W48	Scoliosis and fractures
W49	Septic arthritis and Juvenile idiopathic arthritis
W50	Random case review and quiz
W51	Random case review and quiz
W52	Random case review and quiz

Table 2 – Weekly roadmap of 52-week Fellowship themes

We aim to cultivate a vibrant learning environment where you can acquire a deep understanding of the subject matter, cultivate innovative thinking, and explore entrepreneurial opportunities within the context of MSK Radiology and AI. Through weekly presentations, we provide a platform for intellectual growth, collaboration, and the exploration of new frontiers.

Embrace the exhilarating journey ahead as we unravel the intricate connections between MSK Radiology, AI, and Entrepreneurship. Immerse yourself in thought-provoking discussions, leverage the power of technological advancements, and discover how entrepreneurship can drive positive change in the field. Prepare to embark on an enriching voyage of knowledge, empowerment, and the limitless possibilities that await you.