

RUN-EU RESEARCH CHALLENGE SAP ARTIFICIAL INTELLIGENCE 2AI

10-14.JUL.2023

SAP OVERVIEW

This SAP Research Challenge aims to promote the development of in-person R&D activities focused on the field of Artificial Intelligence (AI). The SAP program is divided into two components: training and group research. The training component will be based on short thematic workshops taught by experts. These workshops will focus on emerging AI-related topics namely, Natural Language Processing, Deep Learning for Computer Vision, Tiny AI, Collaborative Robots, Simulation and Additive Manufacturing, and training in basic research components namely, Research Methodologies, Data Analysis, Scientific Writing, Preparation of Scientific Pitches, and Funding Opportunities.

Concerning the research component (designated as Hands-On), young researchers will be incorporated into projects currently being executed at IPCA R&D units and challenged to carry out a short-term R&D project oriented towards the project's goals. In addition to research activities, young researchers will participate in scientific discussion sessions among the various members of IPCA R&D units, designated as Journal Club. Finally, all students must prepare an oral presentation of the projects developed in the scientific communication sessions of IPCA R&D units.

LEARNING OUTCOMES

- At the end of this RUN-EU SAP, participants will be able to:
- Understand the basics of research methodologies;
 - Receive advanced training in emergent technologies;
 - Improve transversal and soft skills through teamwork and cooperative project methodology;
 - Improve innovative thinking in cooperation with others to achieve a common goal;
 - Experience a multicultural international environment.

+INFO: www.run-eu.eu

Organised by: IPCA and TUS

DATE From **10 to 14 July 2023**

Face-to-Face Week: IPCA, Barcelos, Portugal 10-14 July

MODE OF DELIVERY Presential

LANGUAGE OF INSTRUCTION English

ECTS CREDITS 1

ACADEMIC RECOGNITION

To be defined by each Home Institution.

ELIGIBLE PARTICIPANTS

Students from technology fields, including engineering and sciences. No pre-skills are required, and the program is suitable also for any other student program.

HOW TO APPLY

Fill in the application form (**QR or website**)



DEADLINE FOR APPLICATIONS

20 June 2023

CONTACT DETAILS

jvilaca@ipca.pt
pmorais@ipca.pt

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SELECTION CRITERIA

The candidates will be selected according to the CV and motivation. Priority will be given to students who are developing research at a master's or PhD level and to students involved in the IPCA Summer Schools. A maximum of 35 students will be selected for this programme.

LEARNING AND TEACHING STRATEGY

The teaching strategy is based on project work, problem-based learning and have an exploratory approach. Each student will select a research theme from a set of pre-defined topics and each student will receive mentoring from senior research. The students work in multi-cultural international groups.

COURSES LEADERS | LECTURERS

Courses leaders

João Vilaça (2Ai-IPCA)
Pedro Morais (2Ai-IPCA)

Coaches

António Moreira (2Ai-IPCA)	Helena Torres (2Ai-IPCA)
Bruno Oliveira (2Ai-IPCA)	Joaquim Gonçalves (2Ai-IPCA)
Cátia Alves (2Ai-IPCA)	José Brito (2Ai-IPCA)
Daniel Miranda (2Ai-IPCA)	Luís Ferreira (2Ai-IPCA)
Duarte Duque (2Ai-IPCA)	Nuno Lopes (2Ai-IPCA)
Estela Vilhena (2Ai-IPCA)	Vitor Carvalho (2Ai-IPCA)
Fernando Veloso (2Ai-IPCA)	Shioban Moane (TUS)
	Patrick Murray (TUS)

PHYSICAL MOBILITY | SCHOLARSHIPS AVAILABLE

Flows/Institution

Flows/Institution. Applicant selection aims for wide representation of partner institutions implying a maximum of 5 students per university.

PREREQUISITES

No specific prerequisites.

MEANS AND CRITERIA FOR ASSESSMENT

All students will be organized in groups. Each group will realize a final presentation/demonstration of the developed work.

CERTIFICATION

The participants who successfully complete this RUN-EU SAP will receive a Certificate of Participation and a Transcript of Records jointly issued by the organising institutions.

SHORT
ADVANCED
PROGRAMME

RUN
REGIONAL
UNIVERSITY
NETWORK

EUROPEAN UNIVERSITY

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PROGRAMME AT A GLANCE

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GMT+2	10h00	11h00	12h00	13h00	14h00	15h00	16h00	17h00	18h00	19h00	20h00
GMT+1	9h00	10h00	11h00	12h00	13h00	14h00	15h00	16h00	17h00	18h00	19h00
GMT	8h00	9h00	10h00	11h00	12h00	13h00	14h00	15h00	16h00	17h00	18h00
MONDAY 10/07			WELCOMING CEREMONY ICE BREAKING ACTIVITY COFFEE BREAK	R&D TALKS	LUNCH	VISIT TO R&D UNITS SAP RESEARCH CHALLENGE	RESEARCH METHODOLOGIES				
TUESDAY 11/07		SCIENTIFIC WRITING COFFEE BREAK	R&D WORKSHOP1	LUNCH	INTRODUCTION TO RESEARCH INTEGRATY AND INTELLECTUAL POLICY	WORKING GROUP					
WEDNESDAY 12/07		DATA ANALYSIS COFFEE BREAK	LUNCH	R&D WORKSHOP2	WORKING GROUP						
THURSDAY 13/07		SCIENTIFIC PITCH GUIDELINES FUNDING OPPORTUNITIES COFFEE BREAK	R&D WORKSHOP3	LUNCH	R&D WORKSHOP4	CULTURAL PROGRAM ORGANIZED BY IPCA STUDENTS COUCL					
FRIDAY 14/07		R&D WORKSHOP5 COFFEE BREAK	WORKING GROUP	LUNCH	WORKING GROUP	ASSESSMENT FINAL PRESENTATION					

SHORT
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10 JUL

MONDAY 9H00-16H30 GMT

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GMT+1	9h00	10h00	11h00	12h00	13h00	14h00	15h00	16h00	17h00	18h00	19h00
GMT	8h00	9h00	10h00	11h00	12h00	13h00	14h00	15h00	16h00	17h00	18h00
MONDAY 10/07			WELCOMING CEREMONY ICE BREAKING ACTIVITY COFFEE BREAK	R&D TALKS	LUNCH	VISIT TO R&D UNITS SAP RESEARCH CHALLENGE	RESEARCH METHODOLOGIES				

Registration

🕒 09h00-09h30

R&D TALKS

Talk 1

🕒 11h00-12h00

📄 In this session, a brief presentation of ongoing projects at the Applied Artificial Intelligence Laboratory (2Ai) from School of Technology/IPCA will be realized.

Visit to R&D Units

🕒 14h00-14h30

📄 Guided tour to IPCA's research units - 2Ai, ID+ and CICF.

Welcome

🕒 09h30-10h00

R&D TALKS

Talk 2

🕒 12h00-13h00

👤 Patrick Murray
📄 In this session, a brief presentation of ongoing R&D projects at TUS will be realized.

SAP Research Challenge

🕒 14h30-15h30

Ice Breaking Activities Promoted by RSS

🕒 10h00-10h30

Lunch Break

🕒 13h00-14h00

Research Methodologies

🕒 15h30-16h30

👤 Abhishek Chatterjee and Vitor Carvalho

📄 The workshop aims to assimilate the processes, methodologies, and practices associated with scientific research, as well as to develop a critical scientific spirit and the ability to produce a scientific text and work plan.

**RUN-EU
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João Vilaça e Bruno Oliveira

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11 JUL

TUESDAY 9H00-16H30 GMT

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GMT	8h00	9h00	10h00	11h00	12h00	13h00	14h00	15h00	16h00	17h00	18h00
TUESDAY 11/07			SCIENTIFIC WRITING COFFEE BREAK	R&D WORKSHOP1	LUNCH	INTRODUCTION TO RESEARCH INTEGRITY AND INTELLECTUAL POLICY	WORKING GROUP				

Scientific Writing

- 🕒 09h00-10h30
- 👤 Pedro Morais and Helena Torres
- 📄 This training program focuses on training the participants with good practices for structuring, formatting, using appropriate language, and including relevant information in scientific writing. For that, through interactive discussions and real-life examples, participants will discuss the fundamental concepts of scientific writing and enhance their skills in producing high-quality scientific documents.

Lunch Break

- 🕒 12h00-14h00

R&D WORKSHOP

- R&D Workshop1 -
Introduction to TinyML**
- 🕒 10h30-12h00
 - 👤 António Moreira
 - 📄 This workshop aims to provide participants with a comprehensive understanding of the emerging field of TinyML, which brings the power of machine learning to resource-constrained edge devices.

**Introduction to Research
Integrity and Intellectual Policy**

- 🕒 14h00-15h00
- 👤 Patrick Murray and Siobhan Moane
- 📄 The seminar on research integrity will provide an introduction to the European code of practice and the basic principles which together with good research practices are essential for promoting and safeguarding a culture of research integrity.

Working Group

- 🕒 15h00-16h30
- 📄 The participants will be grouped and assigned a particular issue outlined at the start of the SAP. The working groups will engage in hands-on sessions guided by two experts from 2Ai. Each candidate is required to create a distinct project that will be presented during the final session.

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12 JUL

WEDNESDAY 9H00-16H30 GMT

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GMT	8h00	9h00	10h00	11h00	12h00	13h00	14h00	15h00	16h00	17h00	18h00
WEDNESDAY 12/07			DATA ANALYSIS COFFEE BREAK		LUNCH		R&D WORKSHOP2	WORKING GROUP			

Data Analysis

🕒 09h00-12h00

👤 Estela Vilhena

📄 The Data Analysis course will provide students with an in-depth overview of data analysis methods applied in a generic context as well as a solid understanding of their advantages and limitations.

Lunch Break

🕒 12h00-14h00

R&D WORKSHOP

R&D Workshop2 - Deep Learning for Computer Vision

🕒 14h00-15h30

👤 José Brito

📄 This session presents an overview of Artificial Intelligence applied to Computer Vision. Typical application examples of Computer Vision applied to different fields will be presented.

Working Group

🕒 15h30-16h30

📄 The participants will be grouped and assigned a particular issue outlined at the start of the SAP. The working groups will engage in hands-on sessions guided by two experts from 2Ai. Each candidate is required to create a distinct project that will be presented during the final session.

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13 JUL

THURSDAY 9H00-16H30 GMT

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THURSDAY 13/07			SCIENTIFIC PITCH GUIDELINES FUNDING OPPORTUNITIES COFFEE BREAK	R&D WORKSHOP3	LUNCH	R&D WORKSHOP4	CULTURAL PROGRAM ORGANIZED BY IPCA STUDENTS COUNCIL				

Scientific Pitch Guidelines

- 🕒 09h00-09h30
- 👤 João Vilaça and Patrick Murray
- 📄 This training program will provide comprehensive guidance on the format, structure, and delivery of scientific pitches. For that, through practical examples and interactive discussions, the candidates will gain the necessary expertise to create compelling and persuasive pitch presentations. The workshop will be supported by specific examples, to facilitate the understanding of the concepts.

Lunch Break

- 🕒 12h00-14h00

Funding Opportunities

- 🕒 09h30-10h00
- 👤 Pedro Morais and Siobhan Moane
- 📄 In this session, the candidate will be introduced to scientific opportunities platforms namely the Euraxess portal, and relevant guidelines for an application.

R&D WORKSHOP

R&D Workshop4 - Blockchain and Traceability

- 🕒 14h00-15h30
- 👤 Luís Ferreira
- 📄 The digitalisation of data and services is one of the great opportunities for development today. More and more information and knowledge is extracted from existing data or derived from the participation of advanced processing and analysis systems.

R&D WORKSHOP

R&D Workshop3 - Collaborative Robotics

- 🕒 11h00-12h00
- 👤 João Vilaça and Bruno Oliveira
- 📄 Collaborative robotics, frequently referred to as cobots, is an emerging field that combines human and robot collaboration in a shared workspace.

Cultural Program Organized by IPCA Students Council

- 🕒 15h30-16h30

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14 JUL

FRIDAY 9H00-16H30 GMT

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FRIDAY 14/07			R&D WORKSHOP5 COFFEE BREAK	WORKING GROUP	LUNCH	WORKING GROUP	ASSESSMENT FINAL PRESENTATION				

R&D WORKSHOP

**R&D Workshop5 - (Option 1)
Additive Manufacturing**

🕒 09h00-11h00

👤 Fernando Veloso

📄 Following, a short collaborative problem-solving activity will take place involving additive manufacturing. The participants will be divided into small groups and presented with a problem or challenge. The participants will work together to brainstorm ideas, analyse solutions, and present their findings to the larger group.

Lunch Break

🕒 12h30-14h00

R&D WORKSHOP

**R&D Workshop5 - (Option 2)
Simulation**

🕒 09h00-11h00

👤 Daniel Miranda

📄 Computer simulation is a versatile tool widely used in research fields, particularly in engineering and natural sciences, playing a crucial role in scientific and technological advancements by providing valuable insights into the understanding and improvement of real systems under study.

Working Group

🕒 14h00-15h00

📄 The participants will be grouped and assigned a particular issue outlined at the start of the SAP. The working groups will engage in hands-on sessions guided by two experts from 2Ai. Each candidate is required to create a distinct project that will be presented during the final session.

Working Group

🕒 11h00-12h30

📄 The participants will be grouped and assigned a particular issue outlined at the start of the SAP. The working groups will engage in hands-on sessions guided by two experts from 2Ai. Each candidate is required to create a distinct project that will be presented during the final session.

**Assessment
Final Presentation**

🕒 15h00-16h30