

# EMERGE

WP8 Communication and Dissemination

## D8.3 Intermediate report on communication and dissemination activities

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DA VINCI LABS

## Document control

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<sup>1</sup>R: Document, report (excluding the periodic and final reports); DEM: Demonstrator, pilot, prototype, plan designs; DEC: Websites, patents filing, press & media actions, videos, etc.; DATA: Data sets, microdata, etc.; DMP: Data management plan; ETHICS: Deliverables related to ethics issues.; SECURITY: Deliverables related to security issues; OTHER: Software, technical diagram, algorithms, models, etc.

<sup>2</sup>PU – Public, fully open, e.g. web (Deliverables flagged as public will be automatically published in CORDIS project's page); SEN – Sensitive, limited under the conditions of the Grant Agreement; Classified R-UE/EU-R – EU RESTRICTED under the Commission Decision No2015/444; Classified C-UE/EU-C – EU CONFIDENTIAL under the Commission Decision No2015/444; Classified S-UE/EU-S – EU SECRET under the Commission Decision No2015/444

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## Abstract

Awareness in biological agents has converging definitions when considering local states describing content-related consciousness from an agent-specific perspective. However, it becomes highly debated when it comes to global states. The issue magnifies when considering collectives of artificial agents. Several frameworks exist, all unsatisfactory in the limitations posed to agents' heterogeneity and disappearance of the local self into an integrated state.

Ultimately, existing frameworks are ineffective in explaining, facilitating, and supporting cooperative behaviours in artificial agents. The lack of a compelling theory of global awareness in AI is currently a significant barrier to the effective deployment of artificial agents in the real world.

EMERGE tackles this grand challenge by introducing the novel concept of collaborative awareness for collectives of minimal artificial beings. We will investigate how simple agents can develop a representation of their mutual existence, environment, and cooperative behaviour towards the realisation of tasks and goals.

EMERGE builds on a scenario of artificial beings with no shared language and constrained individual capabilities, which nevertheless leads to high-complexity behaviours at the collective level. Collaborative awareness becomes an emergent process supporting complex, distributed, and loosely coupled systems capable of high degrees of collaboration, self-regulation, and interoperability without predefined protocols.

EMERGE delivers a philosophical, mathematical, and technological framework that enables us to know how and where to allocate awareness to optimally achieve a goal through the collective. We will demonstrate EMERGE concepts on robotic use cases, with hints of the broader applicability of the framework to the Internet of Things, pervasive computing, and nanotechnologies. We will also investigate the ethical implications of collaborative awareness, focusing on moral responsibility, vulnerabilities, and trust.

## Consortium

The EMERGE consortium members are listed below.

Organization	Short name	Country
Università di Pisa	UNIFI	IT
TU Delft	TUD	NL
University of Bristol	UOB	UK
Ludwig Maximilian University of Munich	LMU	DE
Da Vinci Labs	DVL	FR

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## 1. Executive Summary

This document is a deliverable of the EMERGE project under grant agreement number 101070918.

This deliverable, “D8.3 Intermediate report on communication and dissemination activities”, is part of work package 8 (WP8) “Communication and Dissemination” which “ensures communication and dissemination of EMERGE activities to different publics towards improving impact, public acceptance, and translation.”

This deliverable reports on the communication and dissemination activities executed during the first 30 months of the EMERGE project, including website and social media presence, scientific publications, press releases, organisation of and participation in events, and networking activities with other projects and initiatives. It also evaluates the accomplishment of the key performance indicators (KPIs) defined in D8.2.

A final report on WP8 will be made available at M48 with deliverable “D8.4 Final report on communication and dissemination activities”.

## 2. Communication and Dissemination Report

EMERGE’s communication is implemented through several activities, channels, and tools detailed in deliverable D8.2, alongside a timeline for execution and key performance indicators (KPIs). In the next sections, we present results from the following activities executed up to M30 of the EMERGE project:

- Website containing public domain information about the project aimed at different stakeholders and target audiences;
- Social media channels to engage and build relationships with different stakeholders and target audiences;
- Scientific publications for dissemination of key results produced during the project, accompanied by layperson summaries published on the project’s website and social media channels;
- Press releases to maximise the dissemination of project’s results and important milestones on the media;
- Promotional materials composing a communication kit with clear and simple language aiming to reach a variety of target audiences;
- Events organisation and participation to raise awareness around the project, its activities and expected results, and disseminate the relevant developments;

These activities are detailed in the following sections alongside a timeline for execution and key performance indicators (KPIs).

## 2.1. Website

The EMERGE project website – <https://eic-emerge.eu/> – contains public domain information about the project aimed at different stakeholders and target audiences.

Consortium partner DVL is responsible for keeping the website always up-to-date and functioning properly, solving any issues in a timely manner. The schedule for these updates depends on the specific needs of the website. Relevant website updates are communicated to consortium partners through internal channels and to target audiences through EMERGE's social media channels.

Google Analytics is used to monitor the performance of the website such as users (unique visitors), number of sessions, engagement time, etc. Table 1 shows selected website statistics collected as of the delivery date of this document.

*Table 1: Website, selected statistics*

Website statistics	Year 1	Year 2	Year 3 (M30)	Year 4	Total
Users (Visitors)	800	1,400	1,000	-	3,200
Sessions	1,400	2,000	1,400	-	4,800
Pageviews	3,900	3,500	2,300	-	9,700
Avg. engagement time	00:01:11	00:00:43	00:00:36	-	00:00:48

## 2.2. Social Media

Social media are important communication tools to engage and build relationships with different stakeholders, and to increase brand awareness for the project. Social media profiles were set up by M1:

- Twitter: [https://x.com/eic\\_emerge](https://x.com/eic_emerge)
- LinkedIn: <https://www.linkedin.com/company/eic-emerge/>
- Instagram: [https://www.instagram.com/eic\\_emerge/](https://www.instagram.com/eic_emerge/)

Table 2 shows the social media KPIs for the project. To assess their effectiveness, the project's social media accounts are monitored using the analytics provided by each platform. Tables 3 and 4 show the social media statistics collected as of M30 of the project.

As it can be seen, on LinkedIn and Twitter/X EMERGE has already surpassed its final KPIs at 859 and 764 followers respectively.

The Instagram profile was created on M1, but not initially updated. With the currently deteriorating situation of Twitter/X, we started to update this social network with the videos produced for the communication kit (see below), and plan other updates in alignment with the more visual nature of this social media channel. This account currently has 47 followers.

Collectively, EMERGE's PIs and co-investigators have over 10,800 followers (8,600 followers at M6) on Twitter/X, over 19,400 on LinkedIn (10,000 at M6), and over 2,000 on Instagram, amplifying the reach of EMERGE's publications.

*Table 2: Social media timeline and KPIs.*

Activity	KPI	Year 1	Year 2	Year 3 (M30)	Year 4	Total
Social Media Channels	Twitter Followers	228 / 100	712 / 200	764 / 300	- / 400	764 / 400
	LinkedIn Followers	219 / 100	705 / 200	859 / 300	- / 400	859 / 400

*Table 3: Twitter/X, selected statistics.*

Twitter/X statistics	Year 1	Year 2	Year 3 (M30)	Year 4	Total
Followers	228	712	764	-	764
Average new followers per month	19	40	7	-	25
Total number of posts	114	339	148	-	588
Total impressions	25,300	80,400	16,900	-	122,600
Total engagement*	570	1210	690	-	2,469

*\*Sum of likes, clicks, comments and shares.*

*Table 4: LinkedIn, selected statistics.*

LinkedIn statistics	Year 1	Year 2	Year 3 (M30)	Year 4	Total
Followers	219	705	859	-	859
Average new followers per month	18	40	26	-	29
Total number of posts*	66	120	81	-	267
Total impressions	25,500	67,500 (Org.) 32,700 (Paid)	43,800 (Org.) 65,000 (Paid)	-	93,000 (Org.) 32,700 (Paid)
Total engagement**	1500	3,500 (Org.) 470 (Paid)	2,800 (Org.) 60 (Paid)	-	5,000 (Org.) 470 (Paid)

*\*Includes reposts. \*\*Sum of likes, clicks, comments and shares.*

## 2.3. Press Releases

To maximise the project's dissemination to the media, the consortium prepares press releases to promote EMERGE's results and important milestones. Table 5 shows the press release and media coverage KPIs for the project.

As of the submission of this deliverable, EMERGE has been mentioned in the media over 500 times, including paid (press release distribution service), earned (regular media coverage of the project and its partners), and owned (by partners themselves) media.

The first press release "EMERGE Consortium secures grant awarded by European Innovation Council for the investigation of a new framework for AI collective awareness" reports the project start, with information of the project's goals, partners, funding, etc.

The second press release "Designing Aware and Trustworthy Robots" reports on the workshop event organised by METATOOL and EMERGE projects in Rimini, Italy, on 13-15 March, 2024, during the 2024 edition of European Robotics Forum (ERF). It brought together international professionals, from academia and industry, to explore the multifaceted concept of awareness in the context of robotics, going beyond traditional discussions of navigation and adaptability, and delving deeper into the core questions and challenges surrounding awareness in robotics.

The third press release "Shared awareness could lead to greener, more ethical, and useful smart machines" reports on the paper titled "Shared Awareness Across Domain-Specific Artificial Intelligence: An Alternative to Domain-General Intelligence and Artificial Consciousness" published on the journal Advanced Intelligent Systems. It proposes a collaborative shared awareness as a more reliable, energy-efficient, and ethically tractable framework for the coordination between artificial systems and humans than an artificial general intelligence.

This press release got highlighted by CORDIS on the article "Dear AI, collaborative shared awareness is the way to go" available [here](#).

The fourth press release "Exploring the Ethical Frontiers of Aware Artificial Intelligence: EU Researchers Convene in Uppsala" reports on the 2nd Workshop "Inside the Ethics of AI Awareness," held at Uppsala University on November 11, 2024. Organised by the SymAware consortium alongside other EIC-funded projects in the "Awareness Inside" portfolio, the workshop addressed topics such as the governance of AI ethics, ethical dimensions of multi-agent systems, and the implications of designing value-aware and metacognitive AI systems.

Highlights on media coverage are presented on Tables 9–11 and Figures 12–16 in Appendix 3.1.

Table 5: Press releases timeline and KPIs.

Activity	KPI	Year 1	Year 2	Year 3 (M30)	Year 4	Total
Press Releases	Number of Press Releases	1 / 1	2 / 3	1 / 1	- / 2	4 / 7
	Total Media Coverage	268 / 50	245* / 150	3* / 100	- / 200	516 / 500
Mainstream Publications	Number of Publications	6 / 2	8 / 2	3 / 4	- / 4	17 / 12

*\*PR Mass distribution service was not used for PRs 3 and 4, the EurekAlert service was used instead to reach a more qualified audience.*



Figure 1: Screen captures of the EMERGE press releases.



## 2.4. Scientific Publications

Key results produced throughout the project duration are disseminated in the form of article pre-prints, peer-reviewed articles in scholarly journals, articles in conference proceedings, monographs, patents, and research data (data underlying publications, curated data and/or raw data). Table 6 shows the scientific publication KPIs for the project.

EMERGE's peer-reviewed journal publications are presented on Tables 12–48 in Appendix 3.2. Additionally, EMERGE partners have also produced over 50 other scientific publications which were either presented in events or presented and published in conference proceedings.

Scientific publications are continually made available on the project website and on the project's Zenodo community (<https://zenodo.org/communities/eic-emerge>).

Table 6: Scientific publications timeline and KPIs.

Activity	KPI	Year 1	Year 2	Year 3 (M30)	Year 4	Total
Scientific Publications	Number of Publications	10 / 4	17 / 8	10 / 10	- / 12	37 / 34

## 2.5. Communication Kit

A communication kit containing several resources are being developed as promotional material for the project, aiming to reach a variety of target audiences with clear and simple language, avoiding technical content as much as possible.

During Y1, a video abstract to promote the project was produced with subtitles in all partners languages (Dutch, English, French, German and Italian). Next, a first series of 6 interviews were published with the consortium principal investigators.

A Y2 project video was published at the beginning of Y3 showcasing EMERGE's potential to benefit several industries, also with subtitles in all partners languages. Finally, a second series of 8 interviews with consortium members was produced and, as of the delivery of this document, is being published on the project's social media profiles.

The videos can be found on EMERGE's Youtube channel (<https://www.youtube.com/@EIC-EMERGE>) and on the project website (<https://eic-emerge.eu/outreach/media-center>).

Screen captures of EMERGE's videos are shown on Figures 2–5.

Table 7: Communication kit timeline and KPIs.

Activity	KPI	Year 1	Year 2	Year 3 (M30)	Year 4	Total
Project Videos	Number of Videos	1 / -	6 / 1	9 / 1	- / 1	16 / 3
	Total Viewership	2,500 / -	13,500 / 2,500	26,500 / 7,500	- / 10,000	42,500 / 20,000







Figure 4: Screen captures of [EMERGE's first batch of interviews](#).

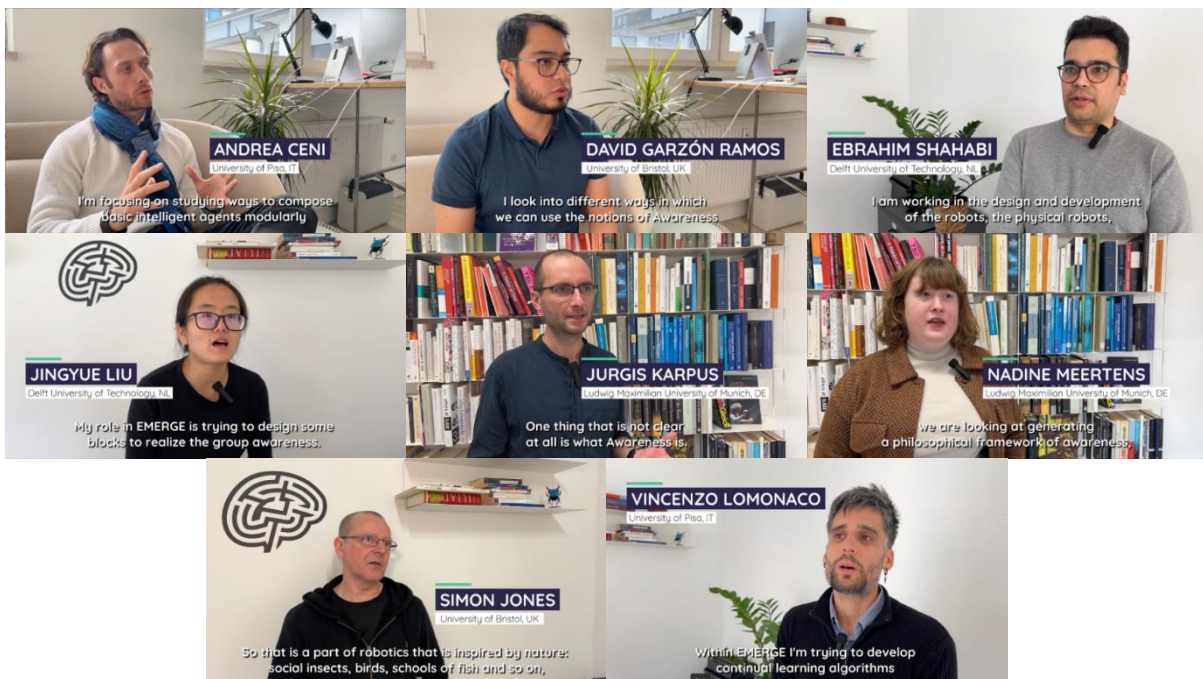


Figure 5: Screen captures of [EMERGE's second batch of interviews](#).

The following materials are still under development: a leaflet communicating a general overview of the project, its challenges and expected impacts for distribution during events; a poster which can be used by each partner at their own institutions and/or at events to capture the attention of passers-by; a slide deck introducing the project to be used by itself or included in more general presentations as needed by the partners.

All material is made available on the partners on a shared storage and to the public on the project website. Additional resources may be developed throughout the project as deemed necessary.



## 2.6. Events

Events, including scientific and industry conferences, trade shows, workshops, and seminars, both virtual and physical, related to the partners' or the project's field of expertise, are prime opportunities to raise awareness around the project, its activities and expected results, and disseminate the relevant developments. Additionally, they provide partners with networking opportunities with researchers and stakeholders and establish and deepen ties with other EU-funded projects and initiatives and other groups in the scientific and industrial community.

During its first 30 months, EMERGE partners have attended over 50 at the local, national, EU and international levels. They are presented on Tables 49–98 in Appendix 3.3. EMERGE partners also attended several workshops, meetings and other kinds of events. Key performance indicators are shown in Table 8.

EMERGE partners also attended and organised events for general public, industry, and other stakeholders.

UOB partners organised outreach events include introducing 120 children (6-7 year olds) to swarm robotics and its potential in real-world applications, and training of industry on the DOTS swarm robotics testbed (10 participants). Also worth of note is the public lecture presented by Sabine Hauert in The Royal Institute, UK, on how recent developments in robotics and AI can revolutionise our lives, and why swarm systems can be trusted. The talk was published on [RI's Youtube channel](#) where it gathered more than 13 thousand views in the first week.



Figure 6: UOB's Sabine Hauert's public lecture in The Royal Institute, UK.

On March and October, 2023, LMU partners engaged industry stakeholders at the Amsterdam Drone Week Annual Meeting Trade Show, in Amsterdam, the Netherlands, the “premier gathering of key players from commercial and non-commercial sectors, knowledge institutes, and authorities.” During the event, partners "Jurgis Karpus (LMU) and Bahador Bahrami (LMU) discussed "Algorithm exploitation: keep air traffic free of human pilots" and "The role of AI in UAVs: Potential Opportunities and Challenges".

Also, on November 2023, LMU partner engaged with Policy Makers in the European Parliament during the Workshop Neurotechnology and Neurorights, where she presented the seminar “Where sub-personal and personal identity meet: anticipating the future of biometric technologies”.

On May 2024, UNIPi partners participate in the Festival della Robotica (Robotics Festival), an Italian series of events of scientific dissemination, talks and round tables aimed at a general audience about technology and innovation and their recent applications in the present and future of our daily life. Partner Andrea Cossu presented the talk titled “Unity is strength: how to build ‘digital’ awareness” (Translated from Italian).

Table 8: Events timeline and KPIs.

Activity	KPI	Year 1	Year 2	Year 3 (M30)	Year 4	Total
Event Participation	Number of Conferences	17 / 2	26 / 2	8 / 4	- / 6	51 / 14
Online Workshops	Number of Workshops	2 / 1	1 / -	0 / 1	- / 1	3 / 3
	Number of Attendees	60 / 80	60 / -	- / 160	- / 240	120 / 480

## 2.7. Policy Activities

EMERGE partners have been engaged in policy activities. UOB partner Sabine Hauert is engaged in policy work in the UK through the Robotics Growth Partnership, which has just released a [Smart Machines 2035 strategy](#). TUD partner Cosimo Della Santina is engaged in drafting the EU Robotics Roadmap, as part of the [Mechatronics Topic Group](#). UNIPi partner Davide Bacciu is engaged in the drafting of the Italian National AI strategy through the Italian Association for AI (AIxIA).

## 2.8. Art Installation: The Aware Forest

The Aware Forest is an interactive art installation exploring collaborative awareness in human-AI interactions, inspired by EMERGE.

Led by partners from UOB, a team of artists and researchers has woven the project’s concepts into The Aware Forest, blending scientific discovery with artistic expression. Visitors experience emergence firsthand, contributing insights into human-AI interaction that will shape future research.

Inspired by natural ecosystems, the installation highlights parallels between biological and technological swarms, inviting visitors to reconsider the boundaries between the natural and artificial.

Ten artificial trees, interconnected through a dynamic canopy, generate music and light in response to touch and movement. Using evolutionary algorithms, the system creates an immersive, evolving experience shaped by visitor interactions. Each artificial entity is aware of its own state, the collective, and human engagement—working together to build harmony within the ecosystem.

By merging science, art, and technology, The Aware Forest offers a glimpse into a future where AI and biological systems co-evolve—a responsive, evolving digital ecosystem.

The installation has been tested at the Bristol Robotics Laboratory and was submitted to the [Ars Electronica](#) festival. If not selected for the festival, the installation can be co-located with the Biennale. This activity will be further reported in deliverable D8.4.



*Figure 7: Photos of the prototype of “The Aware Forest” art installation.*

## 2.9. Communication and Dissemination Crash Course

A 1-hour crash course, led by project partner Prof. Sabine Hauert from UOB was delivered as part of an in-person consortium meeting and served as a basis to brainstorm public outreach events for EMERGE and to empower its researchers to communicate their work to a wider audience through social media (blogs, twitter, video, etc). Content covered included: Why to communicate; How to get started with social media; Building your story; Creative outreach.

The aim of this crash course is to scale-up the type of content produced about EMERGE, by having individual researchers drive their own communications, and also amplifying their content through the EMERGE channels.

## 2.10. Portfolio Activities

Portfolio activities aim at developing synergies and collaborations among the projects in the portfolio of the 2021 EIC Pathfinder challenge call Awareness Inside and strengthen the prospects for a successful project completion and transition towards the market. As part of these, EMERGE consortium members have organized and/or attended several events organised alongside its sister projects, as summarised below. These and other activities are reported in full on deliverables D10.1–3.

Firstly, on 20 September 2023, the EMERGE consortium organised the first edition of the workshop “Inside the Ethics of AI Awareness”, in Brussels, Belgium. The event gathered over 20 participants, including representatives of the various sister projects and presented an opportunity for philosophers, computer scientists, roboticists and other experts to contribute to a nuanced understanding of ethical concerns surrounding artificial systems.



Figure 8: First edition of the workshop “Inside the Ethics of AI Awareness”.

Next, the workshop “Awareness Inside: Open Meeting of the EIC Pathfinder Challenge” was organised during the 26th European Conference on Artificial Intelligence (ECAI 2023) on 1 October 2023, in Kraków, Poland. The event gathered around 40 participants, including representatives of the various sister projects and was intended for dissemination of the research activities and results being developed in the Portfolio by all the involved projects.

Next, projects METATOOL and EMERGE organised the workshop “Designing Aware Robots – The EIC Pathfinder Challenge: Awareness Inside” held in Rimini, Italy, on 13-15 March, 2024, during the 2024 edition of European Robotics Forum (ERF), the most influential meeting of the robotics community in Europe. The workshop brought together over 60 international professionals, from academia and industry, to explore the multifaceted concept of awareness in the context of robotics, going beyond traditional discussions of navigation and adaptability, and delving deeper into the core questions and challenges surrounding awareness in robotics.



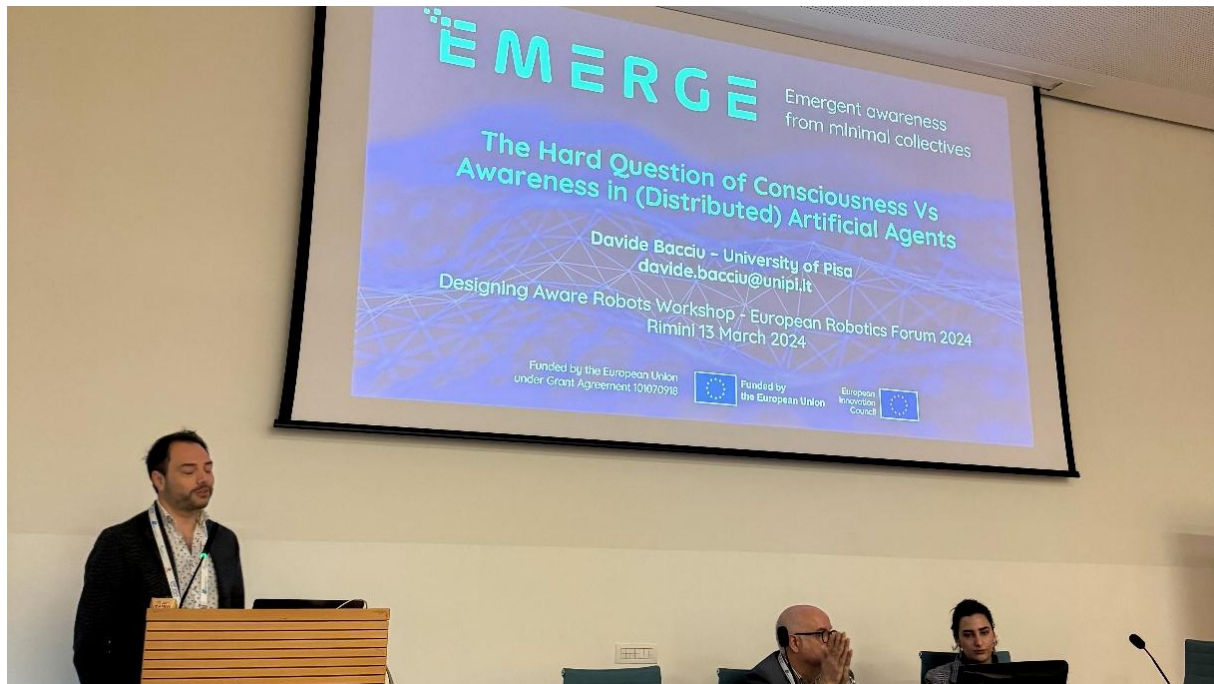


Figure 9: Photo of the workshop “Designing Aware Robots – The EIC Pathfinder Challenge: Awareness Inside”.

Later, on 11 November 2024, EMERGE consortium members attended the 2nd edition of the workshop on 'Inside the Ethics of AI Awareness', in Uppsala, Sweden, organised by the SymAware consortium. The workshop discussed the ethical implications of designing aware artificial multi-agent systems and sparked insightful discussions and set the stage for future cross-project collaboration on these crucial ethical questions.

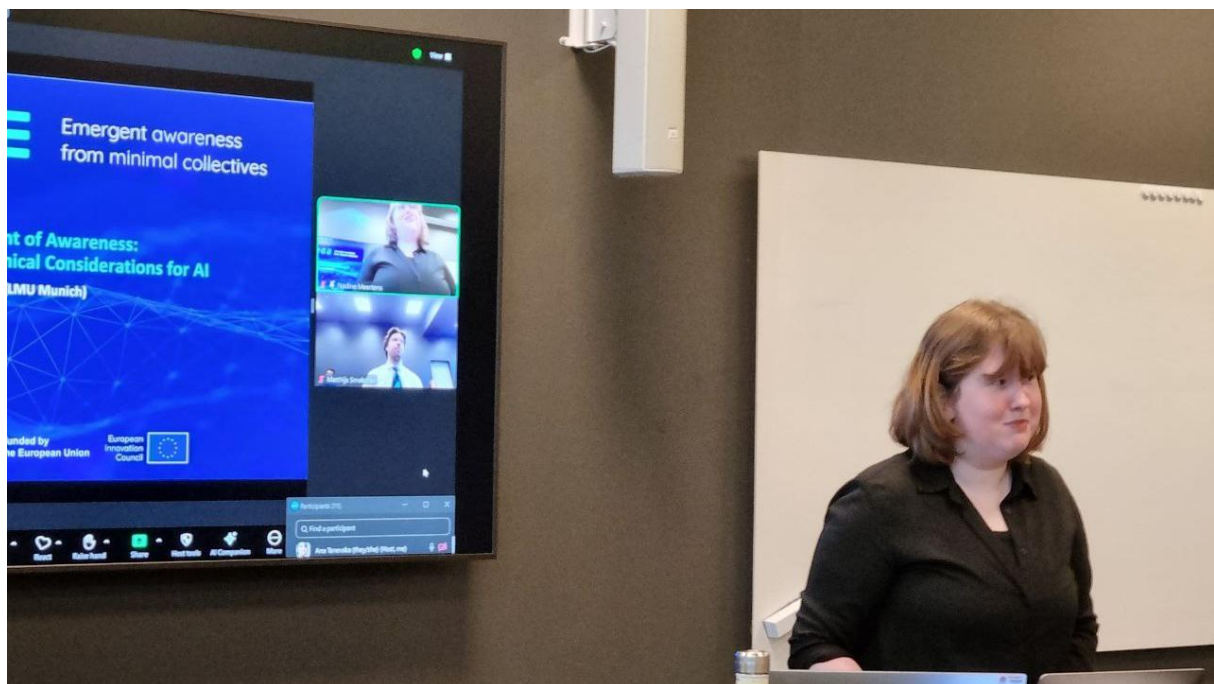


Figure 10: Second edition of the workshop “Inside the Ethics of AI Awareness”.

Finally, on 6 February 2025, EMERGE’s coordinator Davide Bacciu participated in a workshop on Aware AI technologies organized by the Portfolio Manager at the AI Everything 2025 in Dubai. He joined the EIC delegation together with the SymAware project coordinator, as well as three EIC Accelerator companies. The workshop served as a platform to discuss advancements in AI-driven awareness solutions, fostering collaboration between pathfinder initiatives and industry leaders. As part of this event, Davide Bacciu delivered a talk on EMERGE innovations related to Aware AI, and participated to the panel discussion concluding the workshop.



*Figure 11 The EIC delegation at the AI Everything Global 2025, including the Portfolio Programme Manager, and the Coordinators of EMERGE and SymAware projects.*

Most recently, another portfolio workshop titled “Awareness in Learning Agents (ALA)” is being organised and will be held during the 28th European Conference on Artificial Intelligence (ECAI 2025), taking place in Bologna, Italy, on October 25-30, 2025.

The workshop focuses on the transformative potential of Awareness as a conceptual and methodological tool in the design of learning-based systems and synthetic agents. This workshop will explore how integrating awareness into learning agents can fundamentally reshape their capabilities, enabling them to operate with greater efficacy, efficiency, reliability, and trustworthiness.

The workshop will explore both the technical advancements provided by awareness and the philosophical, ethical, and societal impacts and implications of aware agents. It aims to provide a forum for discussion between different research communities, including artificial intelligence, robotics, philosophy, and social sciences. Through keynote talks, contributed sessions, and an interactive panel discussion, participants will explore diverse perspectives, fostering interdisciplinary collaboration and innovation.

Further information on the workshop is available on the [dedicated webpage](#).



## 3. Annexes

### 3.1. Media Coverage

EMERGE has been mentioned in the media over 500 times, including paid (press release distribution service), earned (regular media coverage of the project and its partners), and owned (by partners themselves) media. Highlights on media coverage are presented on Tables 9–11 and Figures 12–16.

#### 3.1.1. List of Media Coverage - Year 1

Table 9: Information on media coverage for Year 1.

Vehicle and Date	Article Title	Website
<b>Il Sole 24 Ore</b> 4 Nov. 2022	University of Pisa, the European project for artificial intelligence is underway (Translated from Italian)	<a href="#">Link</a>
<b>UNIPINEWS</b> 4 Nov. 2022	The European project emerges for a more collaborative and conscious artificial intelligence (Translated from Italian)	<a href="#">Link</a>
<b>UNIPINEWS</b> 30 Jan. 2023	EMERGE Consortium secures €2.8M grant awarded by European Innovation Council	<a href="#">Link</a>
<b>BFM Business</b> 18 Mar. 2023	IA, quantum and synthetic biology develop at Da Vinci Labs (Translated from French)	<a href="#">Link 1</a> <a href="#">Link 2</a>
<b>DataScientest</b> 1 Jan. 2023	European artificial intelligence for industrial robots (Translated from French)	<a href="#">Link</a>
<b>Avvenire</b> 4 Jun. 2023	Ideas. Each intelligence (artificial and no) requires ethics (Translated from Italian)	<a href="#">Link</a>



Figure 12: Screen capture of media coverage. Excerpt (Translated from Italian): “[About EMERGE] We are talking about artificial intelligence but to manage groups of robots, because in factories, in defence, and in other areas, we now need to manage a distributed community of robotised equipment, and that requires a new approach in terms of software development.”



Figure 13: Screen capture of media coverage. Excerpt (Translated from Italian): “One of these relates to the Emerge project, led by Davide Bacciu of the Department of Computer Science at the University of Pisa, which aims to study how consciousness spontaneously emerges in a group of artificial entities working together to achieve certain goals.”

### 3.1.2. List of Media Coverage - Year 2

Table 10: Information on media coverage for Year 2.

Vehicle and Date	Article Title	Website
<b>AI News</b> 3 Jan. 2024	“We need a national strategy for AI”, interview with Davide Bacciu   AI Talks #9 (Translated from Italian)	<a href="#">Link</a>
<b>Agenda Digitale</b> 28 Feb. 2024	AGI (artificial general intelligence): where it comes from and where it goes (Translated from Italian)	<a href="#">Link</a>
<b>Agenda Digitale</b> 11 Jul. 2024	Emerging skills in Large Language Models: scientific truths or mirages? (Translated from Italian)	<a href="#">Link</a>
<b>EurekAlert</b> 31 Jul. 2024	Shared awareness could lead to greener, more ethical, and useful smart machines	<a href="#">Link</a>
<b>Scien Mag / Morning News</b> 31 Jul. 2024	Shared awareness could lead to greener, more ethical, and useful smart machines	<a href="#">Link</a>
<b>Tech Xplore</b> 31 Jul. 2024	Shared awareness could lead to greener, more ethical, and useful smart machines	<a href="#">Link</a>
<b>Enerzine.com</b> 11 Aug. 2024	Specialised AI: The solution to energy and ethical challenges? (Translated from French)	<a href="#">Link</a>
<b>CORDIS</b> 11 Aug. 2024	Dear AI, collaborative shared awareness is the way to go	<a href="#">Link</a>





Figure 14: Screen capture of media coverage. Excerpt (translated from Italian): “We define artificial intelligence for comparison with the human intelligence, because the most difficult thing is to define what intelligence is. We can describe artificial intelligence as that area of computer science that develops models whose behaviours are, from a decision-making point of view and with reference to the tasks they are able to solve, indistinguishable from the functions performed by a human.”

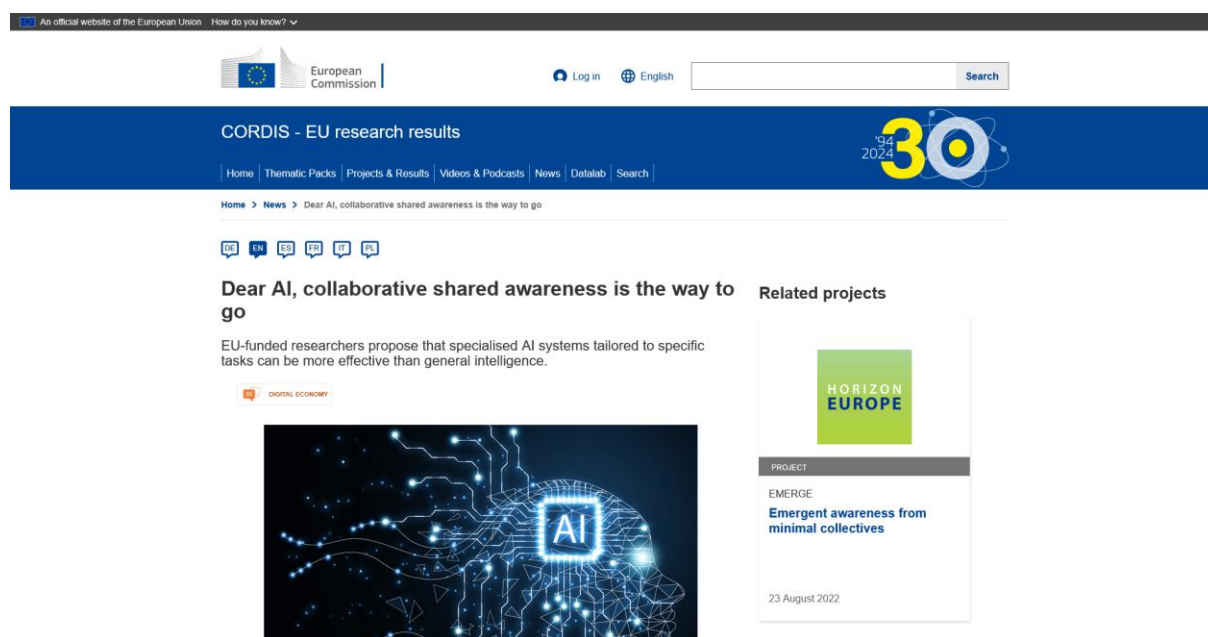


Figure 15: Screen capture of media coverage. Excerpt: “As artificial general intelligence gains more ground, so does our fear of machines gaining human-like consciousness. A more reliable, energy efficient and ethically manageable alternative is the development of domain-specific AI. A new study supported by the EU-funded EMERGE project explains that this alternative does not require machines to be conscious.”

### 3.1.3. List of Media Coverage - Year 3

Table 11: Information on media coverage for Year 3.

Vehicle and Date	Article Title	Website
<b>EurekAlert!</b> 20 Jan. 2025	Exploring the ethical frontiers of aware artificial intelligence: EU researchers convene in Uppsala	<a href="#">Link</a>
<b>Tech Xplore</b> 26 Mar. 2025	Study shows people in Japan treat robots and AI agents more respectfully than people in Western societies	<a href="#">Link</a>
<b>Tech Xplore</b> 31 Mar. 2025	PAWS: Four-legged robot can reproduce animal movement with fewer actuators	<a href="#">Link</a>

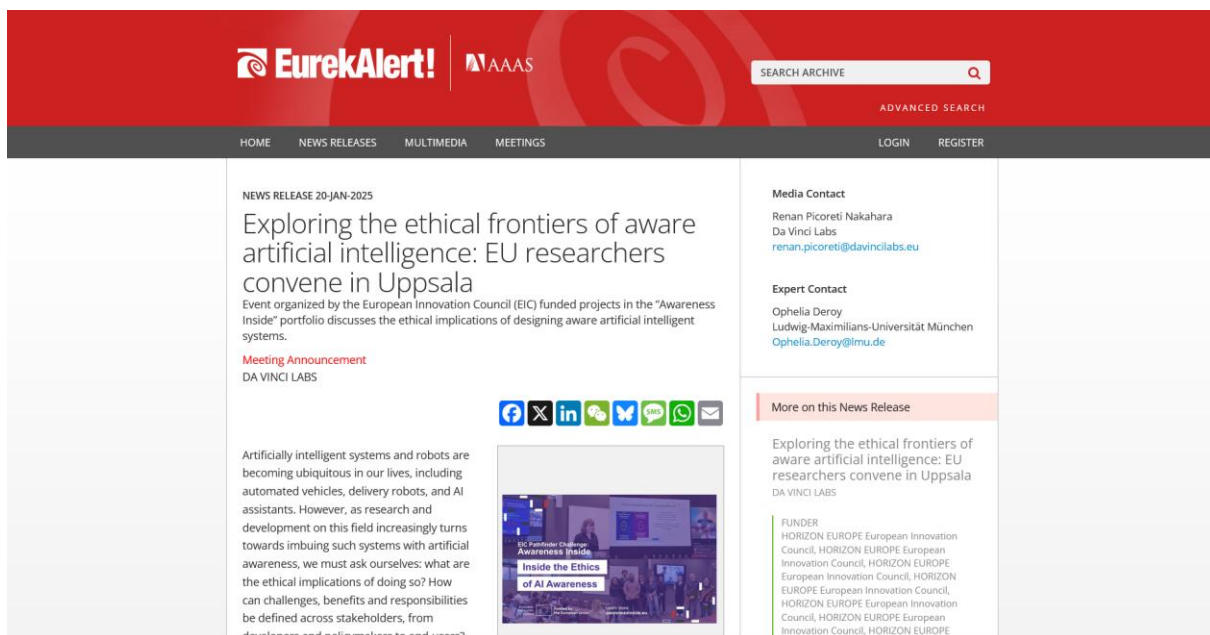


Figure 16: Screen capture of media coverage. Excerpt: “Participants engaged in an interactive workshop on ethical considerations, exploring how these technologies can be responsibly integrated into society. Discussions focused on key stakeholders, such as policymakers, developers, and the public, as well as the potential risks and benefits associated with aware AI, including transparency, accountability, and human-AI collaboration.”

## 3.2. Scientific Publications

EMERGE's peer-reviewed journal publications are presented on Tables 12–48 below. Additionally, EMERGE partners have also produced over 50 other scientific publications which were presented in events. Scientific publications are continually made available on the project website and on the project's [Zenodo community](#).

### 3.2.1. List of Scientific Publications - Year 1

Table 12: Information on scientific publication #1.

Publication #1	Learning 3D shape proprioception for continuum soft robots with multiple magnetic sensors
Lead partner	Delft University of Technology
Reference	Soft Matter, vol. 19, pp. 44-56, 2023
DOI	<a href="https://doi.org/10.1039/D2SM00914E">10.1039/D2SM00914E</a>
Publication Date	Nov. 2022

Table 13: Information on scientific publication #2.

Publication #2	Touching with the eyes: Oculomotor self-touch induces illusory body ownership
Lead partner	Ludwig Maximilian University of Munich
Reference	iScience, vol. 26, no. 3, p. 106180, 2023
DOI	<a href="https://doi.org/10.1016/j.isci.2023.106180">10.1016/j.isci.2023.106180</a>
Publication Date	Mar. 2023

Table 14: Information on scientific publication #3.

Publication #3	Model-Based Control of Soft Robots: A Survey of the State of the Art and Open Challenges
Lead partner	Delft University of Technology
Reference	IEEE Control Systems Magazine, vol. 43, no. 3, pp. 30-65, 2023
DOI	<a href="https://doi.org/10.1109/MCS.2023.3253419">10.1109/MCS.2023.3253419</a>
Publication Date	May 2023

Table 15: Information on scientific publication #4.

Publication #4	Interacting with agents without a mind: the case for artificial agents.
Lead partner	Ludwig Maximilian University of Munich
Reference	Current Opinion in Behavioral Sciences, vol. 51, p. 101282, 2023
DOI	<a href="https://doi.org/10.1016/j.cobeha.2023.101282">10.1016/j.cobeha.2023.101282</a>
Publication Date	Jun. 2023

Table 16: Information on scientific publication #5.

Publication #5	The Ethics of Terminology: Can We Use Human Terms to Describe AI?
Lead partner	Ludwig Maximilian University of Munich
Reference	Topoi, vol. 42, pp. 881–889, 2023
DOI	<a href="https://doi.org/10.1007/s11245-023-09934-1">10.1007/s11245-023-09934-1</a>
Publication Date	Jun. 2023

Table 17: Information on scientific publication #6.

Publication #6	Evolving and generalising morphologies for locomoting micro-scale robotic agents
Lead partner	University of Bristol
Reference	J Micro-Bio Robot, vol. 18, pp. 37–47, 2022
DOI	<a href="https://doi.org/10.1007/s12213-023-00155-8">10.1007/s12213-023-00155-8</a>
Publication Date	Jul. 2023

Table 18: Information on scientific publication #7.

Publication #7	Prescribing Cartesian Stiffness of Soft Robots by Co-Optimization of Shape and Segment-Level Stiffness
Lead partner	Delft University of Technology
Reference	Soft Robotics, vol. 10, no. 4, pp. 701-712, 2023
DOI	<a href="https://doi.org/10.1089/soro.2022.0025">10.1089/soro.2022.0025</a>
Publication Date	Aug. 2023

Table 19: Information on scientific publication #8.

Publication #8	Intelligence brings responsibility - Even smart AI assistants are held responsible
Lead partner	Ludwig Maximilian University of Munich
Reference	iScience, vol. 26, no. 8, p. 107494, 2023
DOI	<a href="https://doi.org/10.1016/j.isci.2023.107494">10.1016/j.isci.2023.107494</a>
Publication Date	Aug. 2023

Table 20: Information on scientific publication #9.

Publication #9	A Provably Stable Iterative Learning Controller for Continuum Soft Robots.
Lead partner	Delft University of Technology
Reference	IEEE Robotics and Automation Letters, vol. 8, no. 10, pp. 6427-6434, 2023
DOI	<a href="https://doi.org/10.1109/LRA.2023.3307007">10.1109/LRA.2023.3307007</a>
Publication Date	Aug. 2023

Table 21: Information on scientific publication #10.

Publication #10	Model-Based Control for Soft Robots With System Uncertainties and Input Saturation
Lead partner	Delft University of Technology
Reference	IEEE Transactions on Industrial Electronics, vol. 71, no. 7, pp. 7435-7444, 2024
DOI	<a href="https://doi.org/10.1109/TIE.2023.3303636">10.1109/TIE.2023.3303636</a>
Publication Date	Aug. 2023

### 3.2.2. List of Scientific Publications - Year 2

Table 22: Information on scientific publication #11.

Publication #11	Frappe: fast fiducial detection on low cost hardware
Lead partner	University of Bristol
Reference	J Real-Time Image Proc, vol. 20, p. 11, 2023.
DOI	<a href="https://doi.org/10.1007/s11554-023-01373-w">10.1007/s11554-023-01373-w</a>
Publication Date	Oct. 2023

Table 23: Information on scientific publication #12.

Publication #12	Trimmed helicoids: an architected soft structure yielding soft robots with high precision, large workspace, and compliant interactions
Lead partner	Delft University of Technology
Reference	npj Robot vol. 1, p. 4, 2023
DOI	<a href="https://doi.org/10.1038/s44182-023-00004-7">10.1038/s44182-023-00004-7</a>
Publication Date	Oct. 2023

Table 24: Information on scientific publication #13.

Publication #13	Soft robot shape estimation with IMUs leveraging PCC kinematics for drift filtering
Lead partner	Delft University of Technology
Reference	IEEE Robotics and Automation Letters, vol. 9, no. 2, pp. 1945-1952, 2024
DOI	<a href="https://doi.org/10.1109/LRA.2023.3339063">10.1109/LRA.2023.3339063</a>
Publication Date	Dec. 2023

Table 25: Information on scientific publication #14.

Publication #14	Neural Autoencoder-Based Structure-Preserving Model Order Reduction and Control Design for High-Dimensional Physical Systems
Lead partner	Delft University of Technology
Reference	IEEE Control Systems Letters, vol. 8, pp. 133-138, 2024
DOI	<a href="https://doi.org/10.1109/LCSYS.2023.3344286">10.1109/LCSYS.2023.3344286</a>
Publication Date	Dec. 2023

Table 26: Information on scientific publication #15.

Publication #15	Physics-informed Neural Networks to Model and Control Robots: a Theoretical and Experimental Investigation.
Lead partner	Delft University of Technology
Reference	Adv. Intell. Syst., vol. 6, p. 2300385, 2024
DOI	<a href="https://doi.org/10.1002/aisy.202300385">10.1002/aisy.202300385</a>
Publication Date	Feb. 2024

Table 27: Information on scientific publication #16.

Publication #16	Euler State Networks: Non-dissipative Reservoir Computing
Lead partner	University of Pisa
Reference	Neurocomputing, vol. 579, p. 127411, 2024
DOI	<a href="https://doi.org/10.1016/j.neucom.2024.127411">10.1016/j.neucom.2024.127411</a>
Publication Date	Feb. 2024

Table 28: Information on scientific publication #17.

Publication #17	Input Decoupling of Lagrangian Systems via Coordinate Transformation: General Characterization and Its Application to Soft Robotics
Lead partner	Delft University of Technology
Reference	IEEE Transactions on Robotics, vol. 40, pp. 2098-2110, 2024
DOI	<a href="https://doi.org/10.1109/TRO.2024.3370089">10.1109/TRO.2024.3370089</a>
Publication Date	Feb. 2024

Table 29: Information on scientific publication #18.

Publication #18	Deep Learning for Dynamic Graphs: Models and Benchmarks
Lead partner	University of Pisa
Reference	IEEE Trans. on Neural Networks and Learning Systems, vol. 35, pp. 11788-11801, 2024
DOI	<a href="https://doi.org/10.1109/TNNLS.2024.3379735">10.1109/TNNLS.2024.3379735</a>
Publication Date	Apr. 2024

Table 30: Information on scientific publication #19.

Publication #19	Quasi-Metacognitive Machines: Why We Don't Need Morally Trustworthy AI and Communicating Reliability is Enough
Lead partner	Ludwig Maximilian University of Munich
Reference	Philos. Technol., vol. 37, p. 62, 2024
DOI	<a href="https://doi.org/10.1007/s13347-024-00752-w">10.1007/s13347-024-00752-w</a>
Publication Date	May 2024

Table 31: Information on scientific publication #20.

Publication #20	Co-perceiving: Bringing the social into perception
Lead partner	Ludwig Maximilian University of Munich
Reference	WIREs Cognitive Science, vol. 15, no 5, p. e1681, 2024
DOI	<a href="https://doi.org/10.1002/wcs.1681">10.1002/wcs.1681</a>
Publication Date	May 2024

Table 32: Information on scientific publication #21.

Publication #21	Hedonic valence at the core of consciousness: A review of "A philosophy for the science of animal consciousness" by Walter Veit
Lead partner	Ludwig Maximilian University of Munich
Reference	Philosophy and the Mind Sciences, vol. 5, 2024
DOI	<a href="https://doi.org/10.33735/phimisci.2024.11472">10.33735/phimisci.2024.11472</a>
Publication Date	May 2024

Table 33: Information on scientific publication #22.

Publication #22	Edge of Stability Echo State Network
Lead partner	University of Pisa
Reference	IEEE Transactions on Neural Networks and Learning Systems (Early Access)
DOI	<a href="https://doi.org/10.1109/TNNLS.2024.3400045">10.1109/TNNLS.2024.3400045</a>
Publication Date	May 2024

Table 34: Information on scientific publication #23.

Publication #23	Residual Echo State Networks: Residual recurrent neural networks with stable dynamics and fast learning
Lead partner	University of Pisa
Reference	Neurocomputing, vol. 597, p. 127966, 2024
DOI	<a href="https://doi.org/10.1016/j.neucom.2024.127966">10.1016/j.neucom.2024.127966</a>
Publication Date	May 2024

Table 35: Information on scientific publication #24.

Publication #24	Drifting explanations in continual learning
Lead partner	University of Pisa
Reference	Neurocomputing, vol. 597, p. 127960, 2024
DOI	<a href="https://doi.org/10.1016/j.neucom.2024.127960">10.1016/j.neucom.2024.127960</a>
Publication Date	Jun. 2024



*Table 36: Information on scientific publication #25.*

Publication #25	Continual pre-training mitigates forgetting in language and vision
Lead partner	University of Pisa
Reference	Neural Networks, vol. 179, p. 106492, 2024
DOI	<a href="https://doi.org/10.1016/j.neunet.2024.106492">10.1016/j.neunet.2024.106492</a>
Publication Date	Jul. 2024

*Table 37: Information on scientific publication #26.*

Publication #26	Shared Awareness Across Domain-Specific Artificial Intelligence: An Alternative to Domain-General Intelligence and Artificial Consciousness
Lead partner	Ludwig Maximilian University of Munich
Reference	Adv. Intell. Syst., vol. 6, p. 2300740, 2024
DOI	<a href="https://doi.org/10.1002/aisy.202300740">10.1002/aisy.202300740</a>
Publication Date	Jul. 2024

*Table 38: Information on scientific publication #27.*

Publication #27	Investigating over-parameterized randomized graph networks
Lead partner	University of Pisa
Reference	Neurocomputing, vol. 606, p. 128281, 2024
DOI	<a href="https://doi.org/10.1016/j.neucom.2024.128281">10.1016/j.neucom.2024.128281</a>
Publication Date	Jul. 2024

### 3.2.3. List of Scientific Publications - Year 3 (M30)

*Table 39: Information on scientific publication #28.*

Publication #28	Berry Twist: a Twisting-Tube Soft Robotic Gripper for Blackberry Harvesting
Lead partner	Delft University of Technology
Reference	IEEE Robotics and Automation Letters, vol. 10, no. 1, pp. 429-435, 2025
DOI	<a href="https://doi.org/10.1109/LRA.2024.3505813">10.1109/LRA.2024.3505813</a>
Publication Date	Nov. 2024



Table 40: Information on scientific publication #29.

<b>Publication #29</b>	<b>Streaming Continual Learning for Unified Adaptive Intelligence in Dynamic Environments</b>
<b>Lead partner</b>	University of Pisa
<b>Reference</b>	IEEE Intelligent Systems, vol. 39, no. 6, pp. 81-85, 2024
<b>DOI</b>	<a href="https://doi.org/10.1109/MIS.2024.3479469">10.1109/MIS.2024.3479469</a>
<b>Publication Date</b>	Dec. 2024

Table 41: Information on scientific publication #30.

<b>Publication #30</b>	<b>On the ethical governance of swarm robotic systems in the real world</b>
<b>Lead partner</b>	University of Bristol
<b>Reference</b>	Phil. Trans. R. Soc. A, vol. 383, p. 20240142, 2025
<b>DOI</b>	<a href="https://doi.org/10.1098/rsta.2024.0142">10.1098/rsta.2024.0142</a>
<b>Publication Date</b>	Jan. 2025

Table 42: Information on scientific publication #31.

<b>Publication #31</b>	<b>The impact of labeling automotive AI as trustworthy or reliable on user evaluation and technology acceptance.</b>
<b>Lead partner</b>	Ludwig Maximilian University of Munich
<b>Reference</b>	Sci. Rep., vol. 15, p. 1481, 2025
<b>DOI</b>	<a href="https://doi.org/10.1038/s41598-025-85558-2">10.1038/s41598-025-85558-2</a>
<b>Publication Date</b>	Jan. 2025

Table 43: Information on scientific publication #32.

<b>Publication #32</b>	<b>Random Orthogonal Additive Filters: A Solution to the Vanishing/Exploding Gradient of Deep Neural Networks</b>
<b>Lead partner</b>	University of Pisa
<b>Reference</b>	IEEE Transactions on Neural Networks and Learning Systems (Early Access)
<b>DOI</b>	<a href="https://doi.org/10.1109/TNNLS.2025.3538924">10.1109/TNNLS.2025.3538924</a>
<b>Publication Date</b>	Feb. 2025

Table 44: Information on scientific publication #33.

<b>Publication #33</b>	<b>NiSNN-A: Noniterative Spiking Neural Network With Attention With Application to Motor Imagery EEG Classification</b>
<b>Lead partner</b>	Delft University of Technology
<b>Reference</b>	IEEE Transactions on Neural Networks and Learning Systems (Early Access)
<b>DOI</b>	<a href="https://doi.org/10.1109/TNNLS.2025.3538335">10.1109/TNNLS.2025.3538335</a>
<b>Publication Date</b>	Mar. 2025

*Table 45: Information on scientific publication #34.*

Publication #34	A memristive computational neural network model for time-series processing
Lead partner	University of Pisa
Reference	APL Mach. Learn., vol. 3, p. 016117, 2025
DOI	<a href="https://doi.org/10.1063/5.0255168">10.1063/5.0255168</a>
Publication Date	Mar. 2025

*Table 46: Information on scientific publication #35.*

Publication #35	Synergy-based robotic quadruped leveraging passivity for natural intelligence and behavioural diversity
Lead partner	Delft University of Technology
Reference	Nat. Mach. Intell., 2025
DOI	<a href="https://doi.org/10.1038/s42256-025-00988-x">10.1038/s42256-025-00988-x</a>
Publication Date	Mar. 2025

*Table 47: Information on scientific publication #36.*

Publication #36	Singular-Perturbation Control of a Tendon-Driven Soft Robot: Theory and Experiments
Lead partner	Delft University of Technology
Reference	IEEE Transactions on Control Systems Technology (Early Access)
DOI	<a href="https://doi.org/10.1109/TCST.2025.3546564">10.1109/TCST.2025.3546564</a>
Publication Date	Mar. 2025

*Table 48: Information on scientific publication #37.*

Publication #36	Human cooperation with artificial agents varies across countries.
Lead partner	Ludwig Maximilian University of Munich
Reference	Sci. Rep., vol. 15, p. 10000, 2025.
DOI	<a href="https://doi.org/10.1038/s41598-025-92977-8">10.1038/s41598-025-92977-8</a>
Publication Date	Mar. 2025

### 3.3. Event Participation

Conferences attended by EMERGE partners at the local, national, EU and international levels are presented on Tables 49–98 below. In addition to the conferences listed below, EMERGE partners also attended several workshops, meetings and other kinds of events.

#### 3.3.1. List of Events - Year 1

Table 49: Information on event #1.

Event #1	IEEE/RSJ Int. Conf. on Intelligent Robots and Systems (IROS 2022)
Location, Date	Kyoto, Japan, 23-27 Oct. 2022
Description	The IROS is one of the largest and most impacting robotics research conferences worldwide. It provides an international forum for the international robotics research community to explore the frontier of science and technology in intelligent robots and smart machines.
Website	<a href="https://iros2022.org/">https://iros2022.org/</a>
Involved partners	- Sabine Hauert (UOB), Keynote speaker, "Swarms for People"

Table 50: Information on event #2.

Event #2	16th Int. Symp. on Distributed Autonomous Robotic Systems (DARS 2022)
Location, Date	Montbéliard, France, 28-30 Nov. 2022
Description	DARS provides a forum for scientific advances in the theory and practice of distributed autonomous robotic systems. It is a highly selective, single-track meeting that will be soliciting submissions presenting significant, original, and previously unpublished research.
Website	<a href="https://dars2022.org/">https://dars2022.org/</a>
Involved partners	- Sabine Hauert (UOB), Programme chair

Table 51: Information on event #3.

Event #3	AAAI Conf. on Artificial Intelligence (AAAI 2023)
Location, Date	Washington, USA, 7-14 Feb. 2023
Description	The purpose of the AAAI conference series is to promote research in Artificial Intelligence (AI) and foster scientific exchange between researchers, practitioners, scientists, students, and engineers across the entirety of AI and its affiliated disciplines.
Website	<a href="https://aaai-23.aaai.org/">https://aaai-23.aaai.org/</a>
Involved partners	<ul style="list-style-type: none"> <li>- Claudio Gallicchio, Davide Bacciu (UNIPi), Tutorial organisation, "Tutorial on Pervasive AI". Website: <a href="#">Link</a></li> <li>- Davide Bacciu (UNIPi), Contributed oral presentation, "Generalizing Downsampling from Regular Data to Graphs"</li> <li>- Alessio Gravina, Davide Bacciu, Claudio Gallicchio (UNIPi), Contributed oral presentation, Workshop on Deep Learning on Graphs: Method and Applications (DLG-AAAI'23), "Non-dissipative propagation by anti-symmetric deep graph networks" – Best paper award. Website: <a href="#">Link</a></li> </ul>

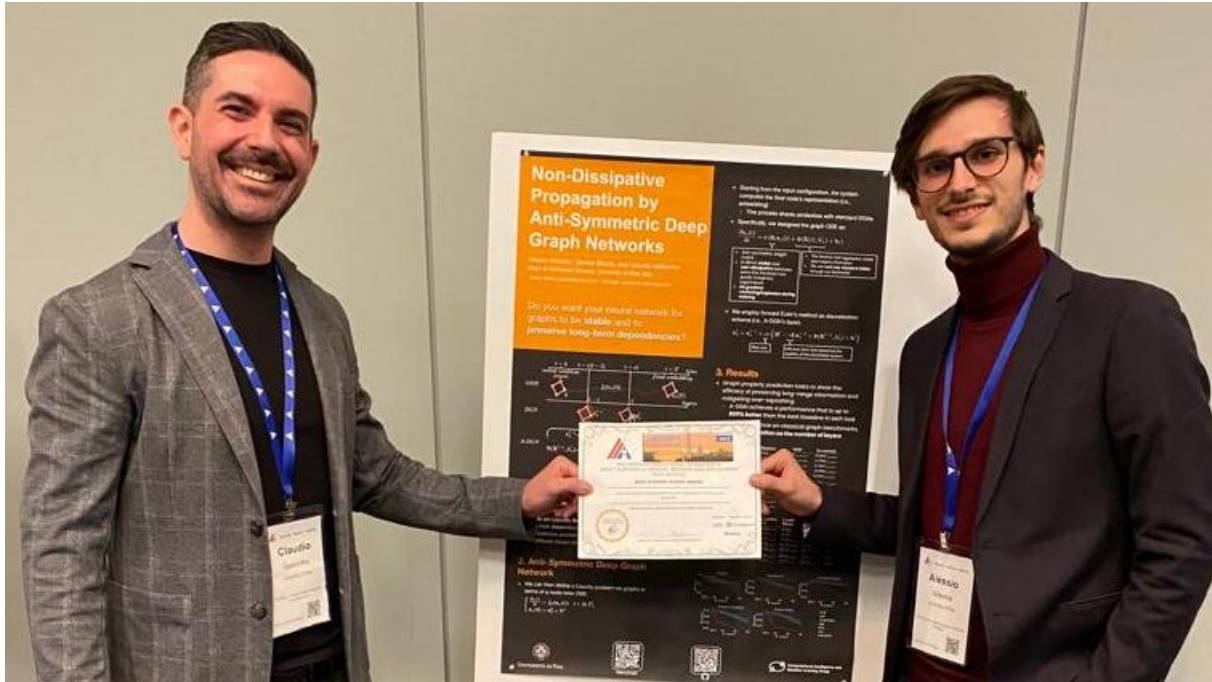


Figure 17: Event participation #3, AAAI 2023. In the picture, Alessio Gravina and Claudio Gallicchio (UNIFI) show the best paper award for their work "Non-dissipative propagation by anti-symmetric deep graph networks".

Table 52: Information on event #4.

Event #4	Int. Conf. on Embodied Intelligence (EI 2023)
Location, Date	Online, 22-23 Feb. 2023
Description	This event brings together a wide range of speakers to discuss the many challenges and opportunities in Embodied Intelligence research: What is (embodied) intelligence? How does computation come about from embodiment? What cannot be done by computation intelligence? What ethical questions arise from EI?
Website	<a href="https://embodied-intelligence.org">https://embodied-intelligence.org</a>
Involved partners	Maximilian Stölzle (TUD), Contributed oral presentation, "Learning 3D shape proprioception for continuum soft robots with multiple magnetic sensors"

Table 53: Information on event #5.

Event #5	Int. Conf. on Soft Robotics (RoboSoft 2023)
Location, Date	Singapore, 3-7 Apr. 2023
Description	The RoboSoft international conference aims at presenting recent progresses in the field, of soft robotics, which takes on the challenge of using soft materials and deformable structures for building robots, with high potential for impact in science and in applications.
Website	<a href="https://robosoft2023.org/">https://robosoft2023.org/</a>
Involved partners	<ul style="list-style-type: none"> <li>- Maximilian Stölzle, Cosimo Della Santina (TUD), "Modelling Handed Shearing Auxetics: Selective Piecewise Constant Strain Kinematics and Dynamic Simulation"</li> <li>- Cosimo Della Santina (TUD), "Proprioceptive Sensing of Soft Tentacles with Model Based Reconstruction for Controller Optimization", "FinFix: A Soft Gripper With Contact-Reactive Reflex for High-Speed Pick and Place of Fragile Objects", "Smell Driven Navigation for Soft Robotic Arms: Artificial Nose and Control", "Piecewise Affine Curvature model: a Reduced-Order Model for Soft Robot-Environment Interaction Beyond PCC"</li> </ul>

Table 54: Information on event #6.

Event #6	11th Int. Conf. on Learning Representations (ICLR 2023)
Location, Date	Kigali, Rwanda, 1-5 May 2023
Description	The International Conference on Learning Representations (ICLR) is the premier gathering of professionals dedicated to the advancement of the branch of artificial intelligence called representation learning, but generally referred to as deep learning.
Website	<a href="https://iclr.cc/Conferences/2023">https://iclr.cc/Conferences/2023</a>
Involved partners	- Davide Bacciu (UNIP), Poster presentation, "Anti-Symmetric DGN: a stable architecture for Deep Graph Networks."

Table 55: Information on event #7.

Event #7	Mechanisms of Collective Decision-making for Cooperative Actions
Location, Date	Dubrovnik, Croatia, 18-20 May 2023
Description	This conference brings together researchers from a range of disciplines including cognitive and developmental psychology, social neuroscience, and evolutionary biology who have substantially expanded our knowledge on the topic of collective decision-making.
Website	<a href="https://ducog.cecog.eu/">https://ducog.cecog.eu/</a>
Involved partners	- Ophelia Deroy (LMU), Invited oral presentation, "Human collectives vs. hybrid collective: What changes?" - Bahador Bahrami (LMU), Invited oral presentation, "What is so great about working with stupid, useless people?"

Table 56: Information on event #8.

Event #8	International Conference on Robotics and Automation (ICRA 2023)
Location, Date	London, United Kingdom, 29 May – 2 Jun. 2023
Description	The largest and most prestigious event of the year in the Robotics and Automation calendar, ICRA brings together the world's top academics, researchers, and industry representatives.
Website	<a href="https://www.icra2023.org/">https://www.icra2023.org/</a>
Involved partners	- Simon Jones (UOB), Poster presentation, Workshop: Distributed Graph Algorithms for Robotics, "Gaussian Belief Propagation for Distributed Swarm Sensing" - Sabine Hauert (UOB), Short pitch and poster presentation, Workshop on Robot Execution Failures and Failure Management Strategies, "Towards Fault Mitigation in a Robot Swarm Using Neuroevolution" - Suet Lee (UOB), Contributed oral presentations, Heterogeneity in Multi-Robot Systems Workshop, "Heterogeneity of Faults in a Robot Swarm: Identifying Discriminatory Metrics"

Table 57: Information on event #9.

Event #9	IEEE Int. Joint Conf. on Neural Networks (IJCNN2023)
Location	Queensland, Australia, 18-23 Jun. 2023
Description	IJCNN is the premier international conference in the area of neural networks theory, analysis and applications.
Website	<a href="https://2023.ijcnn.org/">https://2023.ijcnn.org/</a>
Involved partners	<ul style="list-style-type: none"> <li>- Andrea Ceni, Claudio Gallicchio (UNIP), Session organization, "Reservoir Computing: theory, models, and applications"</li> <li>- Claudio Gallicchio (UNIP), Tutorial organisation, "Randomization in Neural Networks: Feed-forward and Reservoir Computing models"</li> </ul>

Table 58: Information on event #10.

Event #10	First Int. Symp. on Trustworthy Autonomous Systems (TAS '23)
Location, Date	Edinburgh, United Kingdom, 10-12 Jul. 2023
Description	The Trustworthy Autonomous Systems 2023 symposium focuses on novel and creative multidisciplinary responsible research & innovation of trustworthy autonomous systems
Website	<a href="https://symposium.tas.ac.uk/2023/">https://symposium.tas.ac.uk/2023/</a>
Involved partners	<ul style="list-style-type: none"> <li>- Suet Lee, Sabine Hauert (UOB), Poster presentation, "Building Trustworthiness by Minimizing the Sim-to-Real Gap in Fault Detection for Robot Swarms"</li> </ul>

Table 59: Information on event #11.

Event #11	Int. Conf. on Network Science (NetSci)
Location, Date	Vienna, Austria, 10-14 Jul. 2023
Description	NetSci, the flagship conference of the Network Science Society, aims to bring together leading researchers and practitioners working in the emerging area of network science.
Website	<a href="https://netsci2023.wixsite.com/netsci2023">https://netsci2023.wixsite.com/netsci2023</a>
Involved partners	<ul style="list-style-type: none"> <li>- Claudio Gallicchio (UNIP), Invited oral presentation, "Reservoir Computing and Beyond"</li> </ul>

Table 60: Information on event #12.

Event #12	Int. Conf. on Machine Learning (ICML)
Location, Date	Honolulu, USA, 23-29 Jul. 2023
Description	The International Conference on Machine Learning (ICML) is the premier gathering of professionals dedicated to the advancement of the branch of artificial intelligence known as machine learning.
Website	<a href="https://icml.cc/">https://icml.cc/</a>
Involved partners	<ul style="list-style-type: none"> <li>- Davide Bacciu (UNIP), Workshop on New Frontiers in Learning, Control, and Dynamical Systems, Workshop paper, "Randomly Coupled Oscillators for Time Series Processing". Website: <a href="#">Link</a></li> </ul>



Table 61: Information on event #13.

Event #13	Conf. of the Consciousness Research Network
Location, Date	Taipei, Taiwan, 26-28 Aug. 2023
Description	Consciousness Research Network (CoRN) focuses on connecting researchers in the fields of philosophy, neuroscience, psychology, cognitive science, medical science, biology, robotics and related disciplines in order to deepen our understanding of the nature of consciousness.
Website	<a href="https://www.conresnet.org">https://www.conresnet.org</a>
Involved partners	- Ophelia Deroy (LMU), Invited oral presentation, "Getting real : How the sense of reality is constructed in perception"

Table 62: Information on event #14.

Event #14	European Society for Philosophy and Psychology Conference (ESPP)
Location, Date	Prague, Czech Republic, 28-31 Aug. 2023
Description	ESPP has the aim to promote interaction between philosophers and psychologists on issues of common concern.
Website	<a href="https://www.espp23.cz/homepage">https://www.espp23.cz/homepage</a>
Involved partners	<ul style="list-style-type: none"> <li>- Ophelia Deroy (LMU), Invited oral presentation, "Shared experiences and perceptual common ground"</li> <li>- Bahador Bahrami (LMU), Invited oral presentation, "Shared Responsibility in Collective Decisions"</li> <li>- Nadine Meertens (LMU), Contributed oral presentation, "A Functional Account of Awareness in Animals"</li> </ul>

Table 63: Information on event #15.

Event #15	European Conf. on Machine Learning and Principles and Practice of Knowledge Discovery in Databases (ECML-PKDD 2023)
Location, Date	Turin, Italy, 18-22 Sep. 2023
Description	ECML-PKDD is the flagship European machine learning and data mining conference, attracting a worldwide audience.
Website	<a href="https://2023.ecmlpkdd.org/">https://2023.ecmlpkdd.org/</a>
Involved partners	<ul style="list-style-type: none"> <li>- Claudio Gallicchio, Andrea Ceni (UNIP), Workshop organisation, "Deep Learning meets Neuromorphic Hardware". Website: <a href="#">Link</a></li> <li>- Claudio Gallicchio, Andrea Ceni (UNIP), Workshop organisation, "Machine Learning for Irregular Time-series". Website: <a href="#">Link</a></li> <li>- Davide Bacciu, Claudio Gallicchio (UNIP), Tutorial organisation, "Tutorial on Continual Learning in Distributed and Heterogeneous Systems - Pervasive AI". Website: <a href="#">Link</a></li> <li>- Claudio Gallicchio, Andrea Ceni (UNIP), Tutorial organisation, "Sustainable Deep Learning for Time-series: Reservoir Computing". Website: <a href="#">Link</a></li> <li>- Riccardo Guidotti (UNIP), Workshop organisation, "5th International Workshop on eXplainable Knowledge Discovery in Data Mining (XKDD 2023)". Website: <a href="#">Link</a></li> <li>- Davide Bacciu (UNIP), Workshop organisation, "2nd International Workshop on Pervasive Artificial Intelligence". Website: <a href="#">Link</a></li> <li>- Andrea Ceni (UNIP), Workshop paper, Workshop on Deep Learning meets Neuromorphic Hardware, "Continuously deep recurrent neural networks"</li> <li>- Claudio Gallicchio (UNIP), Workshop paper, 20th International Workshop on Mining and Learning with Graphs, "Over-Parameterized Neural Models based on Graph Random Features for fast and accurate graph classification"</li> </ul>

Table 64: Information on event #16.

Event #16	32nd Int. Conf. on Artificial Neural Networks (ICANN)
Location, Date	Heraklion, Crete, Greece, 26-29 Sep. 2023
Description	ICANN 2023 is a conference featuring tracks in Brain Inspired Computing, Machine Learning, and Artificial Neural Networks, with strong cross-disciplinary interactions and applications.
Website	<a href="https://e-nns.org/icann2023/">https://e-nns.org/icann2023/</a>
Involved partners	<ul style="list-style-type: none"> <li>- Claudio Gallicchio (UNIPi), Contributed oral presentation, "Diversifying Non-dissipative Reservoir Computing Dynamics"</li> <li>- Claudio Gallicchio (UNIPi), Contributed oral presentation, "An Untrained Neural Model for Fast and Accurate Graph Classification"</li> </ul>

Table 65: Information on event #17.

Event #17	26th European Conference on Artificial Intelligence (ECAI 2023)
Location, Date	Kraków, Poland, 30 Sept. - 10 Oct. 2023
Description	ECAI is the leading conference in the field of Artificial Intelligence in Europe.
Website	<a href="https://ecai2023.eu/">https://ecai2023.eu/</a>
Involved partners	Davide Bacciu (UNIPi), Workshop organisation, "Awareness Inside: Open Meeting of the EIC Pathfinder Challenge". Website: <a href="#">Link</a>

### 3.3.2. List of Events - Year 2

Table 66: Information on event #18.

Event #18	31st European Symp. on Artificial Neural Networks, Computational Intelligence and Machine Learning (ESANN)
Location, Date	Bruges, Belgium, 4-6 October 2023
Description	The European Symposium on Artificial Neural Networks is the reference for researchers on fundamentals and theoretical aspects of artificial neural networks, computational intelligence, machine learning and related topics.
Website	<a href="https://www.esann.org/">https://www.esann.org/</a>
Involved partners	<ul style="list-style-type: none"> <li>- Andrea Cossu (UNIPi), Contributed oral presentation, "A Protocol for Continual Explanation of SHAP"</li> <li>- Claudio Gallicchio (UNIPi), Contributed oral presentation, "Residual Reservoir Computing Neural Networks for Time-series Classification"</li> <li>- Andrea Ceni (UNIPi), Poster presentation, "Improving Fairness via Intrinsic Plasticity in Echo State Networks"</li> </ul>



Table 67: Information on event #19.

Event #19	Int. Conf. on Manipulation, Automation and Robotics at Small Scales (MARSS)
Location, Date	Abu Dhabi, United Arab Emirates, 9-13 Oct. 2023
Description	MARSS is the flagship forum to discuss cross-disciplinary activities on manipulation, automation, measurement, and characterization at micro/nano scales, and all kinds of small-scale robots (nm – cm) and their applications.
Website	<a href="https://marss-conference.org">https://marss-conference.org</a>
Involved partners	- Sabine Hauert (UOB), Oral presentation, "Modular Wavelength Adaptation of the Dynamic Optical MicroEnvironment"

Table 68: Information on event #20.

Event #20	Int. Conf. on Neuromorphic, Natural and Physical Computing (NNPC)
Location, Date	Hanover, Germany, 25-27 Oct. 2023
Description	The general aim of NNPC 2023 is to boost interdisciplinary transfer of ideas and networking in the wider fields of non-digital computing.
Website	<a href="https://nnpc-conference.com/">https://nnpc-conference.com/</a>
Involved partners	- Claudio Gallicchio and Andrea Ceni (UNIP), Poster presentation, "Recurrent Neural Networks with intrinsically critical dynamics"

Table 69: Information on event #21.

Event #21	22nd Int. Conf. of the Italian Association for Artificial Intelligence (AIxIA 2023)
Location, Date	Rome, Italy, 6-9 Nov. 2023
Description	AIxIA 2023 is organized by AIxIA (Associazione Italiana per l'Intelligenza Artificiale), which is a non-profit scientific society founded in 1988 and devoted to the promotion of Artificial Intelligence.
Website	<a href="https://www.aixia2023.cnr.it/">https://www.aixia2023.cnr.it/</a>
Involved partners	- Riccardo Guidotti, Anna Monreale (UNIP), Workshop organisation, "4th Italian Workshop on Explainable Artificial Intelligence (XAI.it 2023)"

Table 70: Information on event #22.

Event #22	18th Int. Symp. on Experimental Robotics (ISER 2023)
Location, Date	Chiang Mai, Thailand, 26-30 Nov. 2023
Description	The ISER symposia's goal is to provide a forum for research in robotics that focuses on the novelty of theoretical contributions validated by experimental results. This unique conference presents the latest advances across various fields of robotics, with ideas that are not only conceived conceptually but also explored experimentally.
Website	<a href="https://iser2023.org">https://iser2023.org</a>
Involved partners	- Maximilian Stolzle (TUD), Contributed oral presentation, "An Experimental Study of Model-based Control for Planar Handed Shearing Auxetics Robots"



Figure 18: Event participation #22, ISER 2023. In the picture, Maximilian Stolzle (TUD) presents his "An Experimental Study of Model-based Control for Planar Handed Shearing Auxetics Robots".

Table 71: Information on event #23.

Event #23	2024 European Robotics Forum
Location, Date	Rimini, Italy, 13-15 Mar. 2023
Description	The European Robotics Forum (ERF) is one of the most influential event for the robotics and artificial intelligence community in Europe. It is the meeting point for engineers, academics, entrepreneurs, investors, as well as end-users and policy makers in the field of robotics from all over Europe and beyond.
Website	<a href="https://aware-robots.com/">https://aware-robots.com/</a>
Involved partners	<ul style="list-style-type: none"> <li>- Cosimo Della Santina (TUD), Workshop organisation, "Designing Aware Robots: The EIC Pathfinder Challenge - Explore Awareness Inside" – Co-organisation with METATOOL project</li> <li>- Davide Bacciu (UNIFI), Keynote and panel presentation on "Aware Robots"; Poster presentation, "EMERGE – Emergent awareness from minimal collectives"</li> <li>- All partners, portfolio paper, "Awareness in robotics: An early perspective from the viewpoint of the EIC Pathfinder Challenge "Awareness Inside"</li> </ul>

Table 72: Information on event #24.

Event #24	7th IEEE-RAS Int. Conf. on Soft Robotics (RoboSoft 2024)
Location, Date	San Diego, USA, 14-17 Apr. 2024
Description	The RoboSoft international conference aims at presenting recent progresses in the field, of soft robotics, which takes on the challenge of using soft materials and deformable structures for building robots.
Website	<a href="https://softroboticsconference.org/">https://softroboticsconference.org/</a>
Involved partners	<ul style="list-style-type: none"> <li>- Maximilian Stölzle (TUD), Cosimo Della Santina (TUD); contributed paper "Guiding Soft Robots with Motor-Imagery Brain Signals and Impedance Control" – Best paper award</li> <li>- Cosimo Della Santina (TUD), "Nonlinear Modes as a Tool for Comparing the Mathematical Structure of Dynamic Models of Soft Robots"</li> </ul>



Figure 19: Event participation #24, RoboSoft 2024. In the picture, Maximilian Stölzle (TUD) receives the best paper award for his work "Guiding Soft Robots with Motor-Imagery Brain Signals and Impedance Control".

Table 73: Information on event #25.

Event #25	27th Int. Conf. on Artificial Intelligence and Statistics (AISTATS2024)
Location, Date	Valencia, Spain, 2-4 May 2024
Description	AISTATS is an interdisciplinary gathering of researchers at the intersection of computer science, artificial intelligence, machine learning, statistics, and related areas.
Website	<a href="http://aistats.org/aistats2024/">http://aistats.org/aistats2024/</a>
Involved partners	- Andrea Ceni and Andrea Cossu (UNIFI), Poster presentation, "Random Oscillators Network for Time Series Processing"



Table 74: Information on event #26.

Event #26	12th Int. Conf. on Learning Representations (ICLR)
Location, Date	Vienna, Austria, 7-11 May 2024
Description	ICLR is the premier gathering of professionals dedicated to the advancement of the branch of artificial intelligence called representation learning, but generally referred to as deep learning.
Website	<a href="https://iclr.cc/Conferences/2024">https://iclr.cc/Conferences/2024</a>
Involved partners	- Davide Bacciu, Andrea Cossu (UNIP), Poster presentation, Workshop on AI4DifferentialEquations In Science, "MultiSTOP: Solving Functional Equations with Reinforcement Learning"

Table 75: Information on event #27.

Event #27	2024 IEEE Int. Conf. on Robotics and Automation (ICRA 2024)
Location, Date	Yokohama, Japan, 13-17 May 2024
Description	The largest and most prestigious event of the year in the Robotics and Automation calendar, ICRA brings together the world's top academics, researchers, and industry representatives.
Website	<a href="https://2024.ieee-icra.org/">https://2024.ieee-icra.org/</a>
Involved partners	- Suet Lee, Sabine Hauert (UOB), Workshop organisation, "Breaking Swarm Stereotypes". Website: <a href="#">Link</a>



Figure 20: Event participation #27, ICRA 2024. Picture shows moments of the workshop "Breaking Swarm Stereotypes".

Table 76: Information on event #28.

Event #28	Dutch Soft Robotic Symposium 2024
Location, Date	Eindhoven, Netherlands, 28-29 May 2024
Description	The Dutch Soft Robotics Symposium celebrates soft robotic research from the Netherlands and its surrounding neighbours.
Website	<a href="https://dutchsoftrobotics.nl/events/dutch-soft-robotics-symposium-2024">https://dutchsoftrobotics.nl/events/dutch-soft-robotics-symposium-2024</a>
Involved partners	- Maximilian Stölzle (TUD), Contributed oral presentation, "An Experimental Study of Model-based Control for Planar Handed Shearing Auxetics Robots"

Table 77: Information on event #29.

Event #29	32nd Mediterranean Conference on Control and Automation (MED 2024)
Location, Date	Crete, Greece, 11-14 Jun. 2024
Description	MED 2024 explores advancements in robotics and unmanned systems, autonomous systems, mechatronics, cyber-physical systems, and network-controlled systems
Website	<a href="https://www.med-control.org/med2024/">https://www.med-control.org/med2024/</a>
Involved partners	- Cosimo Della Santina (TUD), Contributed oral presentation, "An Empirical Investigation on Variational Autoencoder-Based Dynamic Modeling of Deformable Objects from RGB Data"

Table 78: Information on event #30.

Event #30	IEEE/CVF Conference on Computer Vision and Pattern Recognition 2024
Location, Date	Seattle, USA, 17-21 Jun 2024
Description	CVPR is the premier annual computer vision event comprising the main conference and several co-located workshops and short courses.
Website	<a href="https://cvpr.thecvf.com/virtual/2024/index.html">https://cvpr.thecvf.com/virtual/2024/index.html</a>
Involved partners	- Andrea Cossu (UNIP), Workshop organisation, "5th Workshop on Continual Learning in Computer Vision (CLVISION)" - Andrea Cossu, Davide Bacciu, Vincenzo Lomonaco (UNIP), Poster presentation, 5th Workshop on Continual Learning in Computer Vision (CLVISION), "Calibration of Continual Learning Models"

Table 79: Information on event #31.

Event #31	Int. Conf. on Engineering Applications of Neural Networks (EANN 2024) Engineering Applications and Advances of Artificial Intelligence (EAAAI 2024)
Location, Date	Corfu, Greece, 27-30 Jun. 2024
Description	EAAAI (ex EANN) aims to provide a forum for all scientists from both academia and industry to offer a deep glimpse into the future and to examine important AI ethical aspects.
Website	<a href="https://eannconf.org/2024/">https://eannconf.org/2024/</a>
Involved partners	- Claudio Gallicchio (UNIP), Contributed oral presentation, "Deep Echo State Networks for Modelling of Industrial Systems"

Table 80: Information on event #32.

Event #32	2024 IEEE World Congress on Computational Intelligence (WCCI 2024)
Location, Date	Yokohama, Japan, 30 Jun. - 5 Jul. 2024
Description	IEEE WCCI 2024 is the world's largest technical event on computational intelligence, featuring the three flagship conferences of the IEEE Computational Intelligence Society (CIS) under one roof: The International Joint Conference on Neural Networks (IJCNN), the IEEE International Conference on Fuzzy Systems (FUZZ-IEEE) and the IEEE Congress on Evolutionary Computation (IEEE CEC).
Website	<a href="https://2024.ieeewcci.org/">https://2024.ieeewcci.org/</a>
Involved partners	<ul style="list-style-type: none"> <li>- Claudio Gallicchio, Andrea Ceni (UNIP), Organisation of special session, "Reservoir Computing: Progress in Methods, Applications, and Implementations". Website: <a href="#">Link</a></li> <li>- Claudio Gallicchio (UNIP), Contribute oral presentation, Special Session on Reservoir Computing and Representation Learning, "Decentralized Incremental Federated Learning with Echo State Networks"</li> </ul>

Table 81: Information on event #33.

Event #33	Int. Conf. on Social Dilemmas
Location, Date	Leiden, The Netherlands, 2-4 Jul 2024
Description	Social dilemmas are situations in which self-interest is at odds with collective interests. Economic crisis versus welfare, environmental risks versus opportunities, peace versus friction between nations, and others. These topics and questions are at the heart of theory and research on social dilemmas.
Website	<a href="https://socialdilemma.com/icsd2024/">https://socialdilemma.com/icsd2024/</a>
Involved partners	- Jurgis Karpus (LMU), Poster presentation, "Gender bias in human collaboration with artificial intelligent agents"

Table 82: Information on event #34.

Event #34	European Society for Philosophy and Psychology Conference (ESPP)
Location, Date	Grenoble, France, 2-5 Jul. 2024
Description	ESPP has the aim to promote interaction between philosophers and psychologists on issues of common concern.
Website	<a href="https://espp-2024.sciencesconf.org/">https://espp-2024.sciencesconf.org/</a>
Involved partners	- Nadine Meertens (LMU), Contributed oral presentation, "Collaborative awareness: A threefold perspective on group awareness in animals"

Table 83: Information on event #35.

Event #35	19th European Meeting on Game Theory (SING 19)
Location, Date	Besançon, France, 8-10 Jul 2024
Description	SING is the most important conference in Europe for theoretical and applied contributions from all areas of Game Theory.
Website	<a href="https://univcomte.wixsite.com/sing19">https://univcomte.wixsite.com/sing19</a>
Involved partners	- Jurgis Karpus (LMU), Oral presentation, "Interactive decision making for real"

Table 84: Information on event #36.

Event #36	20th Robotics: Science and Systems (RSS) Conference
Location, Date	Delft, The Netherlands, 15-20 Jul. 2024
Description	RSS has a long history of bringing together researchers in all areas of robotics from around the world for an engaging and focused week of single-track presentations, workshops, poster sessions, and tutorials.
Website	<a href="https://roboticsconference.org/2024/">https://roboticsconference.org/2024/</a>
Involved partners	- Maximilian Stölzle, Cosimo Della Santina(TUD), Workshop organisation, "Workshop on Structural Priors as Inductive Biases for Learning Robot Dynamics". Website: <a href="#">Link</a>

Table 85: Information on event #37.

Event #37	40th Conf. on Uncertainty in Artificial Intelligence (UAI '24)
Location, Date	Barcelona, Spain, 16-18 Jul. 2024
Description	UAI is one of the premier international conferences on research related to knowledge representation, learning, and reasoning in the presence of uncertainty.
Website	<a href="https://www.auai.org/uai2024/">https://www.auai.org/uai2024/</a>
Involved partners	- Davide Bacciu (UNIFI), Poster presentation, "Learning Causal Abstractions of Linear Structural Causal Models"

Table 86: Information on event #38.

Event #38	The British Society for the Philosophy of Science Annual Conference
Location, Date	York, United Kingdom, 17-19 Jul 2024
Description	BSPS is a professional society that furthers the study of the logic, the methods, and the philosophy of science, as well as those of the various special sciences, including the social sciences.
Website	<a href="https://www.thebsps.org/news/bsps-2024-annual-conference-17-19-july/">https://www.thebsps.org/news/bsps-2024-annual-conference-17-19-july/</a>
Involved partners	- Jurgis Karpus (LMU), Contribute oral presentation, "Interactive decision making for real"

Table 87: Information on event #39.

Event #39	33rd International Joint Conference on Artificial Intelligence (IJCAI 2024)
Location, Date	Jeju, South Korea, 3-9 Aug. 2024
Description	IJCAI is a conference in the field of artificial intelligence. The conference series has been organized by the nonprofit IJCAI Organization since 1969.
Website	<a href="https://ijcai24.org">https://ijcai24.org</a>
Involved partners	- Davide Bacciu (UNIFI), Contributed oral presentation "Temporal Graph ODEs for Irregularly-Sampled Time Series"

Table 88: Information on event #40.

Event #40	IEEE Conference on Games (CoG 2024)
Location, Date	Milan, Italy, 5-8 Aug. 2024
Description	CoG aims to be a leading venue for researchers and practitioners to exchange ideas and novel approaches to bring innovation in and through games. Games are a great domain to study and develop novel ideas in design, artificial intelligence, human-computer interaction, psychology, education, sociology, and creativity, as well as their applications in real-world problems.
Website	<a href="https://2024.ieee-cog.org/">https://2024.ieee-cog.org/</a>
Involved partners	- Vincenzo Lomonaco, Davide Bacciu (UNIFI), Contributed oral presentation, "I Know How: Combining Prior Policies to Solve New Tasks"

Table 89: Information on event #41.

Event #41	European Conf. on Machine Learning and Principles and Practice of Knowledge Discovery in Databases (ECML-PKDD 2024)
Location, Date	Vilnius, Lithuania, 9-13 Sep. 2024
Description	ECML-PKDD is the flagship European machine learning and data mining conference, attracting a worldwide audience. The conference program includes presentations of peer-reviewed novel research, invited talks by leaders in the field, a wide program of workshops and tutorials, poster sessions, and more.
Website	<a href="https://ecmlpkdd.org/2024/">https://ecmlpkdd.org/2024/</a>
Involved partners	- Riccardo Guidotti, Anna Monreale (UNIFI), Workshop organisation, "6th International Workshop on eXplainable Knowledge Discovery in Data Mining (XKDD 2024)". Website: <a href="#">Link</a> - Andrea Ceni, Claudio Gallicchio (UNIFI), Workshop organisation, "2nd Deep Learning meets Neuromorphic Hardware Workshop". Website: <a href="#">Link</a>

Table 90: Information on event #42.

Event #42	33rd Int. Conf. on Artificial Neural Networks (ICANN)
Location, Date	Lugano, Switzerland, 17-20 Sep. 2024
Description	ICANN is a unique forum to bring together researchers across a wide range of disciplines related to AI and Neural Networks.
Website	<a href="https://e-nns.org/icann2024/">https://e-nns.org/icann2024/</a>
Involved partners	- Claudio Gallicchio (UNIFI), Workshop organisation, "Workshop Reservoir Computing" - Claudio Gallicchio, Andrea Ceni (UNIFI), Contributed oral presentation, Workshop Reservoir Computing, "Non-dissipative Reservoir Computing Approaches for Time-Series Classification"





Figure 21: Event participation #43, ICRA 40th Anniversary. Picture shows, from left to right, Mariano Ramírez Montero (TUD), Ebrahim Shahabi (TUD), and David Garzon Ramos (TUD).

### 3.3.3. List of Events - Year 3 (M30)

Table 91: Information on event #44.

Event #44	4th AI-ML Systems Conference
Location, Date	Baton Rouge, USA, 8-11 Oct. 2024
Description	This conference examines how immense strides in AI/ML techniques are made possible through advances in the computational systems and how the use of AI/ML can help in the data-driven explorations of the design space of the computational systems.
Website	<a href="https://www.aimlsystems.org/2024/">https://www.aimlsystems.org/2024/</a>
Involved partners	<ul style="list-style-type: none"> <li>- Andrea Cossu, Andrea Ceni, Davide Bacciu, Claudio Gallicchio (UNIFI), Contributed oral presentation, "Sparse reservoir Topologies for Physical Implementations of Random Oscillators Networks"</li> <li>- Davide Bacciu (UNIFI), Tutorial organisation, "Deep Learning for Graphs"</li> </ul>

Table 92: Information on event #45.

Event #45	32nd European Symp. on Artificial Neural Networks, Computational Intelligence and Machine Learning (ESANN 2024)
Location, Date	Bruges, Belgium, 9-11 Oct. 2024
Description	The European Symposium on Artificial Neural Networks is the reference for researchers on fundamentals and theoretical aspects of artificial neural networks, computational intelligence, machine learning and related topics.
Website	<a href="https://www.esann.org/">https://www.esann.org/</a>
Involved partners	<ul style="list-style-type: none"> <li>- Andrea Cossu, Vincenzo Lomonaco (UNIFI), "Towards Deep Continual Workspace Monitoring: Performance Evaluation of CL Strategies for Object Detection in Working Sites"</li> <li>- Claudio Gallicchio, Andrea Ceni (UNIFI), "Reservoir Memory Networks"</li> <li>- Claudio Gallicchio, Davide Bacciu (UNIFI), "Informed Machine Learning for Complex Data"</li> <li>- Andrea Cossu, Riccardo Guidotti, Andrea Ceni, Claudio Gallicchio, Davide Bacciu (UNIFI), "Enhancing Echo State Networks with Gradient-based Explainability Methods"</li> </ul>



Figure 22: Event participation #46, ANST 2024. In the picture, Suet Lee (UOB), on the right, receives the best poster award for her work "A Data-Driven Method to Identify Fault Mitigation Strategies in Robot Swarms".

Table 93: Information on event #46.

Event #46	Int. Conf. on Swarm Intelligence (ANTS 2024)
Location, Date	Konstanz, Germany, 9-11 Oct. 2024
Description	ANTS 2024 gives researchers in swarm intelligence the opportunity to meet, to present their latest research, and to discuss current developments and applications.
Website	<a href="https://www.uni-konstanz.de/ants-2024/">https://www.uni-konstanz.de/ants-2024/</a>
Involved partners	- Suet Lee (UOB), Poster/Oral presentation, "A Data-Driven Method to Identify Fault Mitigation Strategies in Robot Swarms" – Best poster award

Table 94: Information on event #47.

Event #47	27th Int. Conf. on Discovery Science
Location, Date	Pisa, Italy, 14-16 Oct. 2024
Description	Discovery Science 2024 conference provides an open forum for intensive discussions and exchange of new ideas among researchers working in the area of Discovery Science.
Website	<a href="http://ds2024.isti.cnr.it/index.html">http://ds2024.isti.cnr.it/index.html</a>
Involved partners	- Anna Monreale, Riccardo Guidotti (UNIFI), General & Program Chairs

Table 95: Information on event #48.

Event #48	IEEE/RSJ Int. Conf. on Intelligent Robots and Systems (IROS 2024)
Location, Date	Abu Dhabi, UAE, 14-18 Oct. 2024
Description	IROS is one of the largest and most important robotics research conferences in the world, attracting researchers, academics, and industry professionals from around the globe.
Website	<a href="http://iros2024-abudhabi.org/">http://iros2024-abudhabi.org/</a>
Involved partners	- Mariano Ramirez Montero, Cosimo Della Santina (TUD), "Learning Multi-Reference Frame Skills from Demonstration with Task-Parameterized Gaussian Processes"



Figure 23: Event participation #49, DARS'24. In the picture, Simon Jones and Sabine Hauert (UOB) receive the best paper award for their work "Distributed Spatial Awareness for Swarms".

Table 96: Information on event #49.

Event #49	Int. Symp. on Distributed Autonomous Robotic Systems (DARS'24)
Location, Date	New York City, USA, 28-30 Oct. 2024
Description	The International Symposium on Distributed Autonomous Robotic Systems (DARS) provides a forum for scientific advances in the theory and practice of distributed autonomous robotic systems.
Website	<a href="https://dars2024.engineering.cornell.edu/">https://dars2024.engineering.cornell.edu/</a>
Involved partners	<ul style="list-style-type: none"> <li>- Sabine Hauert (UOB), Invited oral presentation, "Breaking swarm stereotypes to deliver on real-world applications"</li> <li>- Simon Jones, Sabine Hauert (UOB), Contributed oral presentation, "Distributed Spatial Awareness for Swarms" – Best paper award</li> </ul>

Table 97: Information on event #50.

Event #50	38th Annual Conf. on Neural Information Processing (NeurIPS 2024)
Location, Date	Vancouver, Canada, 10-15 Dec. 2024
Description	NeurIPS is a machine learning and computational neuroscience conference held every December by the Neural Information Processing Systems Foundation.
Website	<a href="https://neurips.cc/">https://neurips.cc/</a>
Involved partners	<ul style="list-style-type: none"> <li>- Maximilian Stölzle, Cosimo Della Santina (TUD), Poster presentation, "Input-to-State Stable Coupled Oscillator Networks for Closed-form Model-based Control in Latent Space" – Spotlight Poster</li> <li>- Andrea Ceni, Claudio Gallicchio (UNIFI), Poster presentation, Second Workshop on Machine Learning with New Compute Paradigms (MLNCP 2024), "Nanowire Neural Networks for time-series processing"</li> </ul>

Table 98: Information on event #51.

Event #51	AI Everything Global 2025
Location, Date	Dubai, AUE, 6 Feb. 2025
Description	The Ai Everything GLOBAL Summit examines the most compelling AI-powered applications driving transformative outcomes & impacts across critical sectors.
Website	<a href="https://aieverythingglobal.com/">https://aieverythingglobal.com/</a>
Involved partners	- Davide Bacciu (UNIFI), Oral presentation on EMERGE exploitation directions (startups) and panel participation to Awareness panel