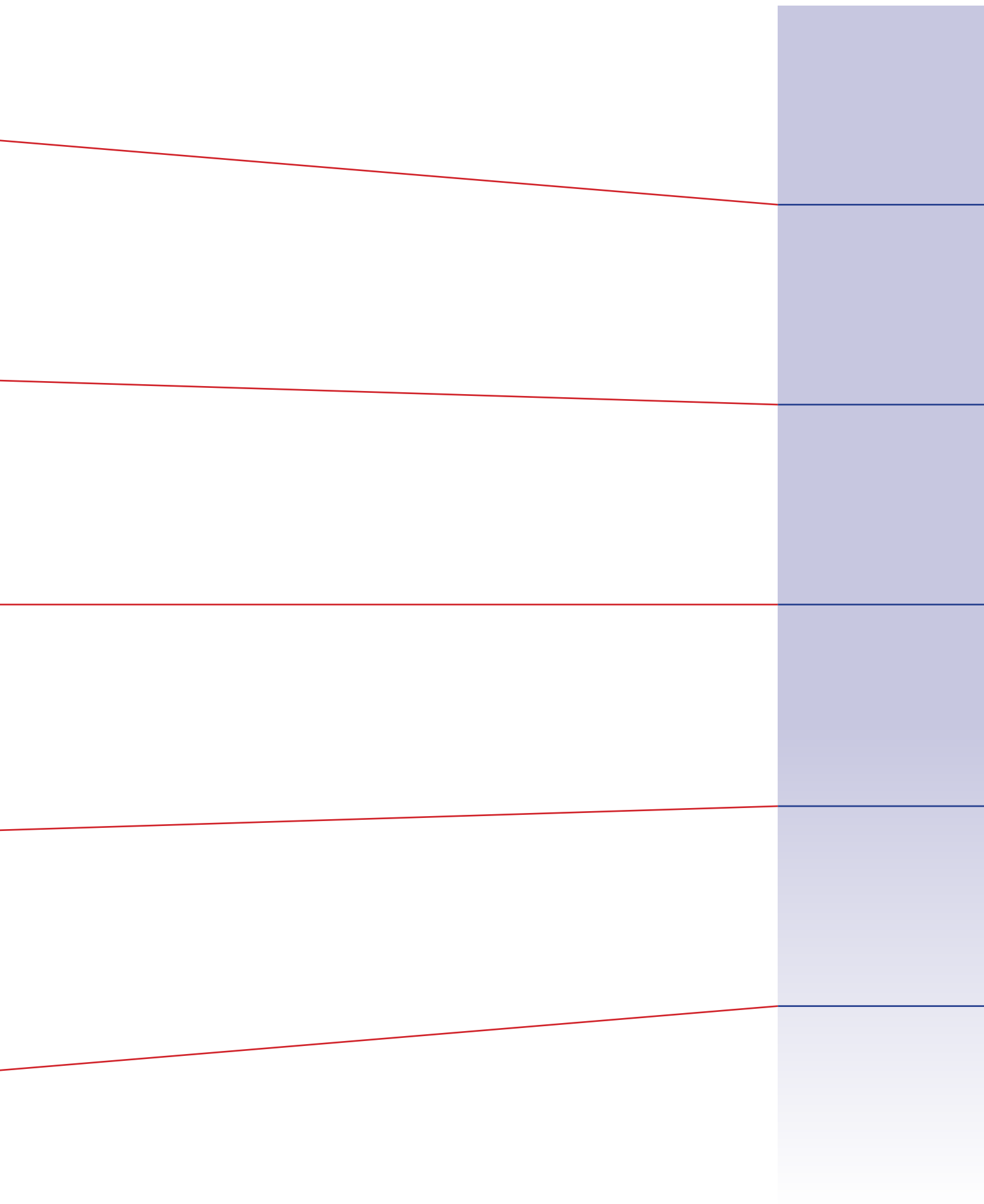






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Developing the future of artificial intelligence



Dr. Vassilis Katsouros
Director of ILSP

In 2025, the Institute for Language and Speech Processing took a decisive step forward, transforming the foundations laid in previous years into a broader vision of European leadership in language technologies and artificial intelligence. Building on the success of Meltemi, we expanded our family of open Greek Large Language Models with the launch of Krikri on February 9th, 2025, celebrating the World Greek Language Day. Designed to advance the state of the art for Greek while remaining fully open and accessible, Krikri marked another important milestone in our commitment to ensuring that the Greek language and culture have a strong presence in the rapidly evolving AI landscape.

Our efforts expanded beyond standard Modern Greek to include dialects, regional varieties, and minority languages, ensuring that linguistic diversity remains an integral part of the digital transformation. Through new speech and language resources, as well as AI models, we are preserving valuable linguistic heritage while making it accessible to future generations of researchers and citizens.

The year also marked a major milestone for Greece's participation in the European AI landscape. Through our leadership of the Common European Language Data Space, our active role in ALT-EDIC, and our participation in strategic initiatives such as LLMs4EU and ALT-EDIC4EU, ILSP contributed to building the foundations of Europe's future language technology ecosystem. At the same time, the launch of Pharos, the Greek AI Factory, positioned Greece among Europe's AI pioneers, with ILSP leading the Language and Culture domain and advancing Greek language technologies and services.

Cultural heritage remained a central pillar of our mission. In 2025, ILSP coordinated and contributed to projects that demonstrate how artificial intelligence, digital twins, spatial technologies, robotics, and immersive experiences can transform the way we document, study, preserve, and experience cultural heritage. The successful conclusion of PREMIERE, recognised by the European Commission as a Success Story, together with new initiatives under the European Collaborative Cloud for Cultural Heritage (ECCCH), highlights our growing role at the intersection of technology, humanities, and society.

ILSP also continued to demonstrate the societal value of AI through applications in education, science, public administration, and sustainability. From AI-powered educational assistants and scientific discovery platforms to trustworthy AI systems and digital transformation services for public organisations, our work translates cutting-edge research into tangible benefits for citizens, institutions, and industry.

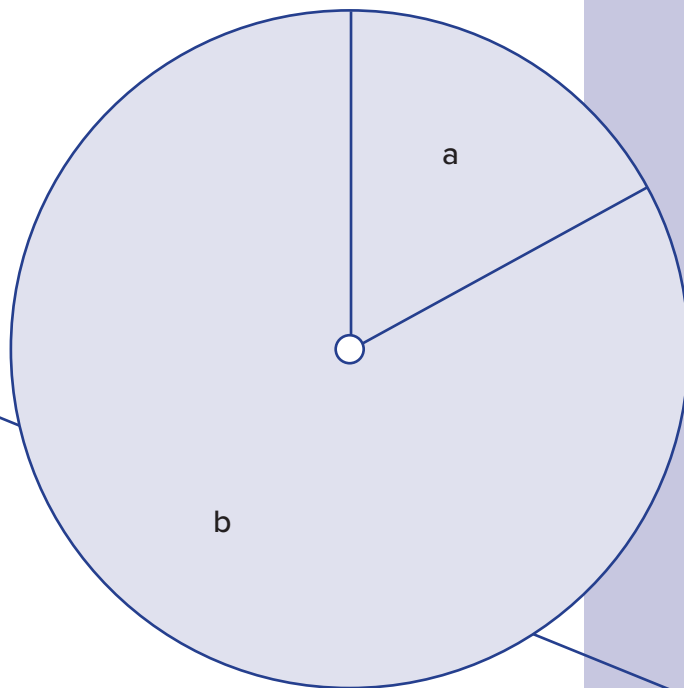
This year was also one of renewal and continuity. We welcomed a new generation of researchers while bidding farewell to several members of the Institute's founding generation. Their pioneering work laid the foundations upon which ILSP stands today.

These achievements are the result of the dedication, creativity, and perseverance of our researchers, engineers, administrative staff, and collaborators. Together, we are building technologies that strengthen Europe's digital sovereignty and create tangible benefits for society.

As we move into 2026, ILSP remains committed to developing multilingual, trustworthy, open, and human-centered AI, helping shape the future of artificial intelligence in Greece and Europe.

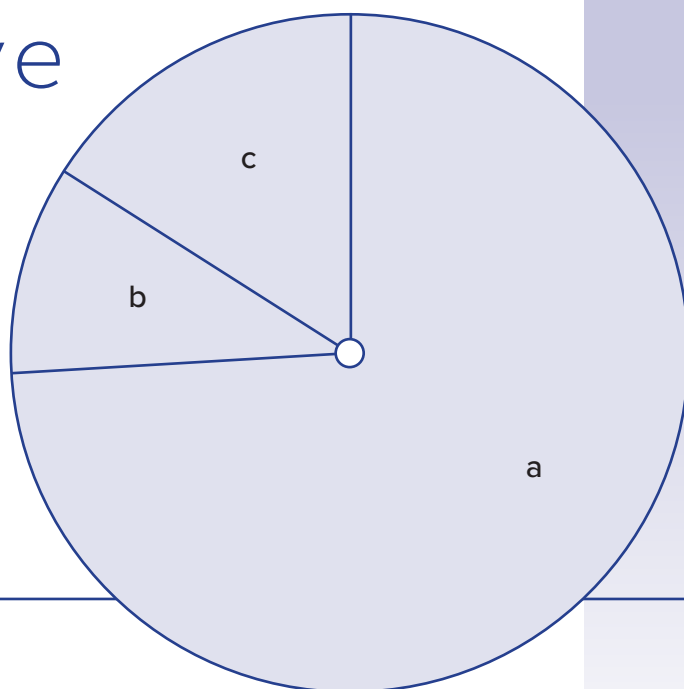
Total funding

- a. Regular Public Funding **17%**
- b. Competitive Funding **83%**



Competitive funding

- a. EU Research Grants **74%**
- b. National Research Grants **10%**
- c. Private Contracts **16%**



140 people

27 researchers

20 post-docs

16 PhD students

57 active projects

105 publications

€5.3M competitive funding

4.8 return on investment

Llama-Krikri and the Family of Greek LLMs

The story of Greek-language AI took a major step forward in 2025. Building on Meltemi, the first open LLM for Greek, released in 2024, ILSP's team developed and released Llama-Krikri on 9 February 2025, World Greek Language Day. Based on the Llama 3.1-8B architecture and fine-tuned through a multi-stage post-training process incorporating state-of-the-art data synthesis, the model achieved remarkable performance in Greek instruction-following. It is available under a permissive open-source licence.

The family of Greek LLMs expanded further with two additional variants: Krikri Chat and its Thinking Preview, which introduces chain-of-thought reasoning in Greek - a first for the language. These hybrid models can operate in both reasoning and direct-response modes, opening new possibilities for complex decision-making applications. Finally, to support multimodality, our VOX-KRIKRI LLM unified speech and language in a single model.

<https://chat.ilsp.gr>



Pharos, the Greek AI Factory

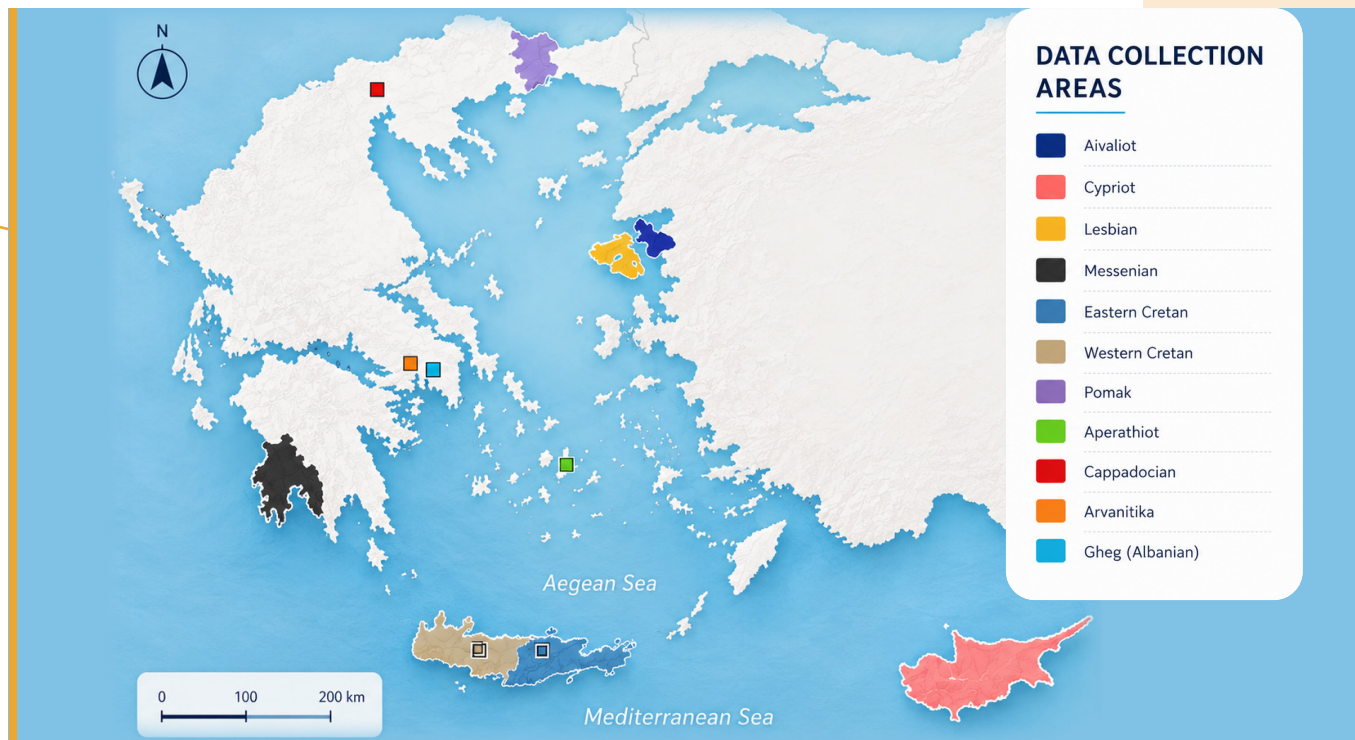
Pharos, a flagship project for Greek AI, is one of the first seven AI Factories in Europe. It is co-funded by EuroHPC Joint Undertaking and the Greek Ministry of Digital Governance and Artificial Intelligence.

Pharos is a strategically important initiative, strengthening competitiveness, developing reliable AI applications and promoting sustainability-driven innovation. Pharos provides advanced AI tools, data and expert human resources to startups and SMEs, academic institutions, research centres and public bodies, in order to orchestrate and facilitate access to DAEDALUS, the Greek supercomputer infrastructure. The project develops AI models and applications in the fields of Sustainability, Health and Language and Culture, with ILSP leading the consortium's activities in the Language and Culture domain and the development of Greek LLMs.

<https://www.pharos-aifactory.eu/>



Greek Language AI



AI for dialects and varieties

One of ILSP's most distinctive contributions in 2025 was the systematic expansion of AI resources for Greek dialects and the minority languages of Greece. The Hellenistic Koine has bequeathed a rich system of dialectal varieties, each carrying unique linguistic features and irreplaceable cultural significance. ILSP and ARCHIMEDES develop AI and NLP tools for these varieties through fieldwork-based data collection, automatic speech recognition (ASR) models, transcription normalisation, Universal Dependencies treebanks, and neural morphosyntactic analysis, all released as open-access resources on Hugging Face and GitHub.

<https://www.ilsp.gr/en/ai-for-modern-greek-dialects/>

Greek Language Technology in dual-use applications



In 2025, ILSP entered a new strategic domain with its participation in the ARCHER project. ARCHER organises a five-year technological challenge to evaluate and advance Human Language Technologies for defence and strategic applications, covering areas such as machine translation, speech recognition, information extraction, and multimodal language understanding in operationally demanding conditions.

As the leader of the translation task, ILSP is responsible for the collection, annotation, and management of the linguistic datasets required for evaluation campaigns, as well as for the development of tools and methodologies to support the evaluation of Human Language Technology (HLT) systems in defence environments. ARCHER is funded by the European Defence Fund (EDF).

<https://archer-challenge.eu/>



Explainable and trustworthy AI

The AIXPERT project aims to transform how AI is developed, deployed, and trusted by society. An international consortium led by ILSP is building a comprehensive, explainable, and adaptable AI framework that addresses key concerns around bias, transparency, autonomy, and robustness.

Through five real-world pilots in healthcare, recruitment, manufacturing, robotics, and the creative industries, AIXPERT showcases the practical benefits of transparent and ethical AI systems.

<https://aixpert-project.eu/>



A data space for language data and models

The Common European Language Data Space (LDS), funded by Digital Europe, reached a major milestone in 2025 with the v2.0.0-beta software release. ILSP as the lead technical partner is responsible for designing, orchestrating, and deploying the entire federated infrastructure, including the Connector, Identity and Access Management, and support for multiple data workflows.

<https://language-data-space.ec.europa.eu/>



At the heart of European Language Technologies

ILSP deepened its engagement with the Alliance for Language Technologies (ALT-EDIC) in 2025. Having represented Greece in ALT-EDIC since its founding, ILSP continues to work closely alongside the Ministry of Digital Governance and Artificial Intelligence.

Currently, ILSP serves as a core partner in two major ALT-EDIC-led initiatives:

- **LLMs4EU** supports the fine-tuning of European multilingual LLMs. ILSP contributes Greek-language data, model development, and evaluation benchmarking, while leading the development of the language data and data-sharing infrastructure.
- **ALT-EDIC4EU** focuses on building ALT-EDIC's global infrastructure. This includes establishing a European Center for evaluating Language Technologies, mapping Europe's LT and LLM landscape, and organising specialised trainings, workshops, and events.

Through these strategic initiatives, ILSP actively drives European AI sovereignty while safeguarding regional linguistic diversity.

<https://www.alt-edic.eu/>
<https://www.llms4eu.eu/>

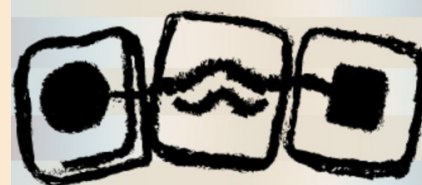


Conversational AI

As part of its activities in conversational AI, ILSP develops and deploys intelligent, human-centric applications that combine speech technologies, dialogue systems, Large Language Models, and Retrieval-Augmented Generation (RAG) to support real-world workflows across multiple sectors. Designed to provide natural, trustworthy, and context-aware interactions, these solutions enable users to capture, access, and manage information more efficiently, automate complex processes, and interact with digital systems through conversational interfaces. By integrating state-of-the-art AI technologies with domain-specific knowledge and operational requirements, ILSP delivers scalable and reliable solutions that enhance productivity, accessibility, and user experience in areas ranging from cultural heritage and scientific documentation to customer service and enterprise operations.

ATRIUM and **StratiGraph** Voice Notetaking applications explore how conversational AI and speech technologies can transform archaeological field documentation by enabling archaeologists to record excavation data through natural voice interaction. Combining automatic speech recognition, language technologies, and structured archaeological recording workflows, the systems allow hands-free completion of context sheets, particularly for

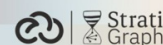
StratiGraph in 3 pillars



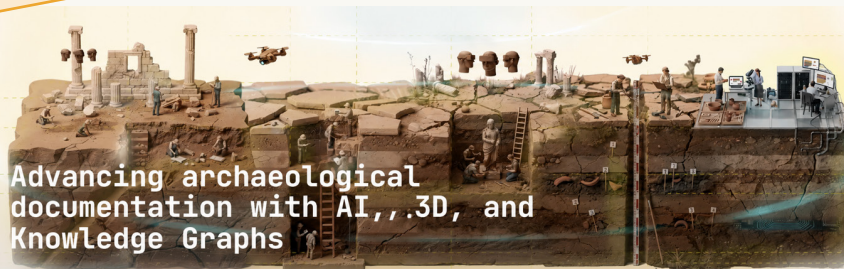
AI-assisted tools

Knowledge graphs

3D-first documentation



Advancing archaeological documentation with AI, 3D, and Knowledge Graphs



Please record the following phrase ⓘ



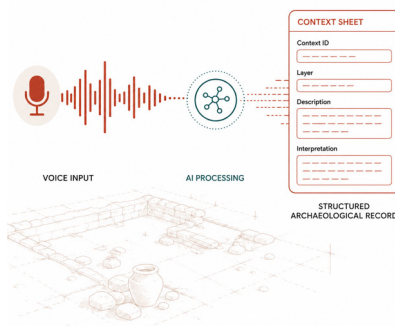
1/588

Digging form North to South, 20cm depth, with big scale tools(Pickaxe) Modern Finds(tile) mouse hole at the south of eastern wall. Shrink 5*5m2 to 2*2m2 north west side. Finish at 20cm depth at South 2.5*5m2 side. Finish at 40cm depth at North 2.5*5m2 side.



free-text descriptions and interpretations that are often time-consuming to document. Designed to operate in challenging excavation environments, the applications improve efficiency, accessibility, and data quality, enabling more detailed observations, and supporting real-time documentation directly in the field.

In the commercial sector, our robust, open-source voicebot infrastructure, successfully deployed at the National Bank of Greece, automates customer interactions at scale. The platform remains in active production use and is continuously maintained and upgraded with new features, AI-driven capabilities, and business processes.



Cultural Heritage, Arts & Humanities



Innovating cultural heritage management

Under the umbrella of the European Collaborative Cloud for Cultural Heritage (ECCCH), ILSP is driving technological innovation through three cutting-edge initiatives.

Coordinated by ILSP, **TEXTaiLES** deploys AI, robotics, and IoT to capture and digitally restore the characteristics of ancient textiles. The project's open-source toolset has been showcased to more than 1,000 museum visitors.

For **UNICHE**, ILSP contributes to a no-code AR/VR platform that empowers cultural institutions to design interactive exhibitions without programming skills, bringing historic temples and nautical instruments to life through immersive digital overlays.

In **StratiGraph**, ILSP contributes advanced AI technologies for voice-enabled archaeological field documentation. By leveraging semantic technologies, knowledge graphs, and large-scale data processing, the project aims to enhance the documentation, interpretation, and accessibility of archaeological heritage.

Together, these projects demonstrate how ILSP leverages advanced digital tools to make Europe's rich history more accessible, interactive, and sustainably preserved.



<https://textailles-eccch.eu/>

<https://uniche-eccch.eu/>

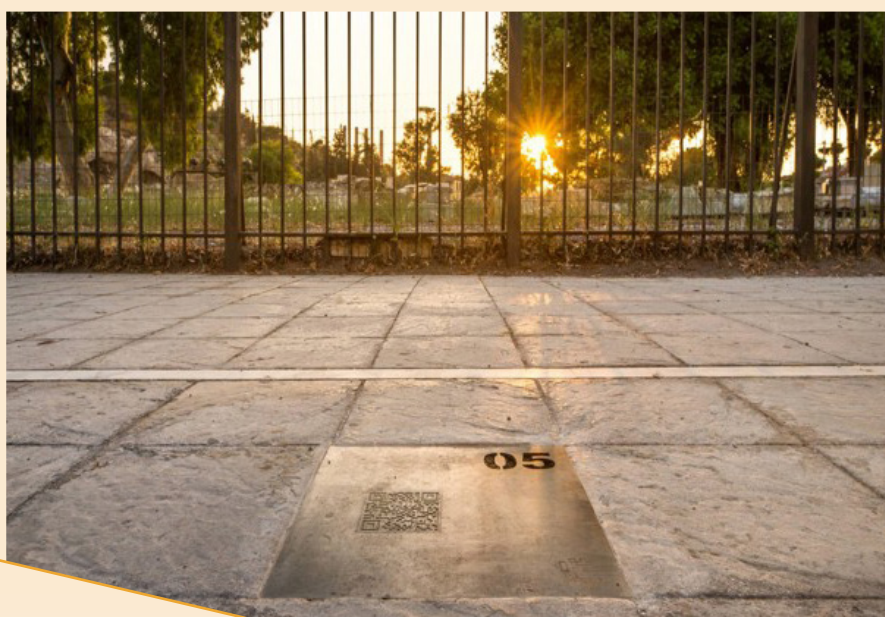
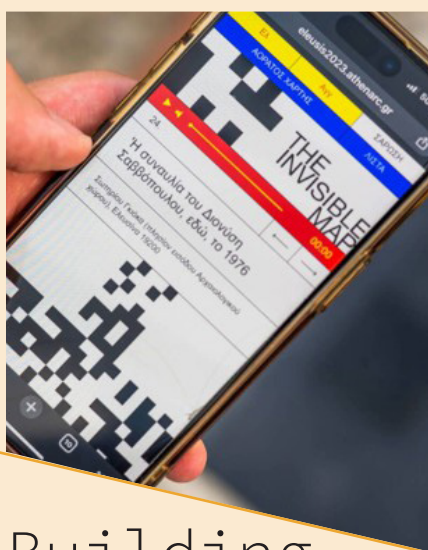
<https://stratigraph-eccch.eu/>

Eleusis 2023: The Invisible Map

ILSP developed the innovative digital platform for The Invisible Map, a flagship initiative of the 2023 Eleusis European Capital of Culture. Designed for residents, visitors, and remote explorers alike, the platform brings the city's rich cultural heritage to life through an accessible and inclusive digital environment.

Moving beyond standard navigation, it reveals Eleusis's hidden layers by linking local histories, personal testimonies, and public artworks to specific locations. A key highlight is Mystery 72 Persephone Walks, an audio tour that guides users through the streets using the real voices and memories of local people. Ultimately, the project demonstrates how ILSP leverages modern digital tools to preserve local heritage and share collective city memories in deeply meaningful ways.

<https://eleusis2023.athenarc.gr/portal/>



Building bridges between Greece and China in Digital Cultural Heritage

ILSP's international presence was further strengthened through a strategic collaboration with the School of Design at Southern University of Science and Technology (SUSTech), China. In December 2025, a site visit of ILSP representatives at SUSTech culminated in the signing of a Memorandum of Understanding and a joint seminar on cultural heritage technologies, bringing together researchers from design, archaeology, computer science and artificial intelligence.



The collaboration established the foundations for future joint research in cultural heritage preservation, digital technologies, heritage education, XR experiences, computational methods, and interdisciplinary approaches to the study, protection, and dissemination of cultural heritage.



Heritage preservation with advanced 3D technologies

ILSP is driving the future of cultural preservation through two key projects, ARTEMIS and 3D-4CH, which bridge technological innovation with real heritage needs. Under **ARTEMIS**, ILSP collaborates for the development of an interactive “Digital Twin” framework. By combining high-resolution 3D documentation with data simulation, the project creates dynamic digital models that support risk assessment, conservation planning, and crowd movement analysis in historic environments.

3D-4CH focuses on establishing a 3D Cultural Heritage Competence Centre with ILSP contributing its expertise in computer graphics and informatics to create standardised workflows and guidelines. This ensures that raw 3D data is transformed into visually accurate, accessible, and sustainable digital resources for researchers and institutions globally.

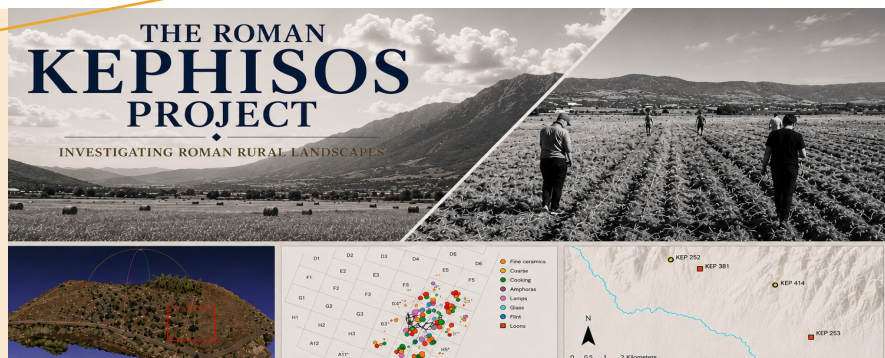
Together, these initiatives ensure Europe’s rich history is not just documented but actively protected and understood.

<https://artemis-twin.eu/>

<https://www.3d4ch-competencecentre.eu/en/>



Ancient Landscapes and Mobility Networks



Through a suite of innovative spatial projects, the **AeGIS Lab** is pioneering new ways to analyse and reconstruct ancient landscapes, mobility, and communication networks. Partnering with the German Archaeological Institute (DAI), researchers deployed advanced drones and GIS mapping to conduct rapid, large-scale aerial surveys of the Kephisos valley. This initiative generated high-resolution 3D models and digital terrain data that successfully located several high-potential archaeological sites marked by ancient pottery and structural remains.

Building on this spatial expertise, the **ArchaeoNav** initiative utilises artificial intelligence and immersive 3D technology to simulate how humans and animals travelled across past terrains under real environmental constraints. This allows researchers to virtually experience ancient routes from a traveller's perspective.

<https://aegis.athenarc.gr>

<https://artcogs.github.io/p-archaeonav.html>



ArchaeoNav

Simulating Ancient Mobility in Uneven Landscapes from GIS to ABM

ArchaeoNav is an interdisciplinary research project that combines GIS, agent-based simulation, and immersive 3D environments to reconstruct and analyse movement, transport, and interaction in ancient landscapes. By integrating real-world terrain, heterogeneous agents, and adaptive navigation strategies, we explore how people and goods moved, interacted, and made decisions in the past.

- Multi-agent simulation
- Real-world terrain (DEM)
- Heterogeneous agents (humans, animals, vehicles)
- Adaptive navigation (A* + Q-learning)

Case studies:
Kimmeria (Aegean Thrace)
Kalapodi (Central Greece)

THE RESEARCH TEAM

ATHENA RESEARCH CENTER / ILSP XANTHI

Dr. Chairi Kiourt
Athena Research Center / ILSP Xanthi

Dr. Vassilis Evangelidis
Athena Research Center / ILSP Xanthi

Dr. Dimitris Grigoropoulos
German Archaeological Institute Athens

PRESENTED AT

ARCHAEO-INFORMATICS 2024

Archaeo-Informatics 2024: Use and Challenges of AI in Archaeology

Ankara, Türkiye

25-26 November 2024

Three-Dimensional Experiences of Ancient Environments

3D Environment Multiagent Simulation: Tracking Movement and Trade in Roman Greece (Vassilis Evangelidis, Dimitris Grigoropoulos, and Chairi Kiourt)

American School of Classical Studies at Athens (ASCSA)

27-28 February 2025

ATLAS Lectures

Extending the Potentials of Landscape Archaeology: From GIS to ABM

Dr. Vassilis Evangelidis

Joint premises of the Netherlands Institute at Athens and the Belgian School at Athens

Monday 1 December 2025, 19.00

Project page: <https://artcogs.github.io/p-archaeonav.html>



Educational technology



BEST PRACTICES BRIEF

AI in Education: Good Practices for Responsible Deployment

Derived from D7.1 - Conversational AI Assistant for Teaching and Learning - AI4EDU Project

About This Brief
This communication brief distils the **key good practices and policy guidelines** from AI4EDU's capstone deliverable D7.1. Drawing on **multi-country pilots** across **Cyprus, Greece, Ireland and Sweden**, it provides **actionable guidance** for educators, school leaders, and policy-makers seeking to deploy AI responsibly in school education.

Key tools developed:

- Study Buddy (SB)**
student-facing conversational assistant
- Teacher Mate (TM)**
teacher-facing planning & feedback assistant

1. Core Principles for Responsible AI in Schools

- Teacher-Mediated Use**
Teachers retain control over task design, pacing, verification and feedback. AI is strongest when teacher-orchestrated.
- Curriculum-First Approach**
Start from learning outcomes and lesson objectives, then decide how AI can support explanation, practice or feedback.
- Conditional Trust & Safeguards**
Disclose AI use, verify outputs against trusted materials, and build classroom norms for critical engagement.
- Inclusion by Design**
AI can support learners with additional needs through deliberate scaffolding, personalised pacing and safe classroom climates.
- AI Literacy as Prerequisite**
Before deployment, teachers and students must have age-appropriate understanding of how AI works and its key risks.
- Interdisciplinary Co-Design**
Develop AI tools collaboratively with educators, students, AI researchers, ethicists and policy experts from the outset.

Learn more about AI4EDU
www.ai4edu.eu

Co-funded by the European Union

In 2025, ILSP advanced educational technology through innovative digital platforms that support both AI-enhanced learning and the development of critical societal competencies. Through the **AI4EDU** project, ILSP completed the piloting and evaluation of its conversational AI assistants for teachers and students across schools in Cyprus, Greece, Ireland, and Sweden. The educational pilots provided valuable evidence on the impact of generative AI in authentic classroom settings. Building on these findings, AI4EDU delivered implementation guidelines and policy recommendations promoting curriculum-aligned, teacher-led AI integration, strengthening AI literacy among teachers and students, and supporting the ethical, inclusive, and responsible use of AI through appropriate governance and learner-protection safeguards.

<https://ai4edu.eu/>



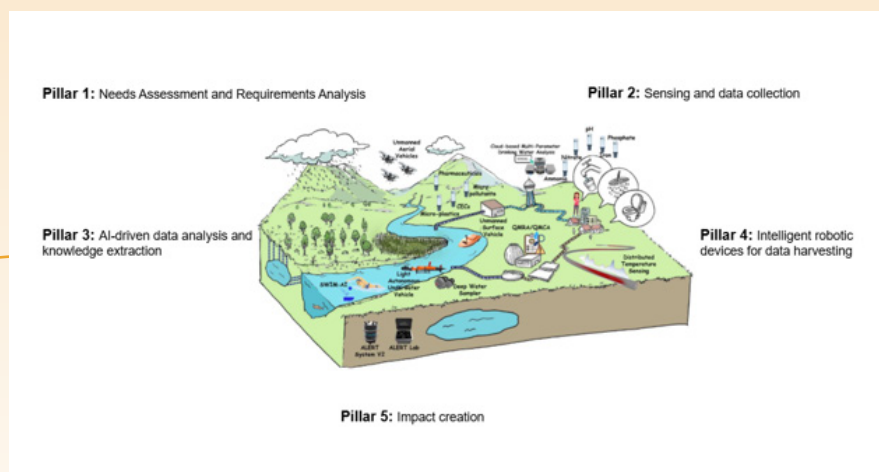
At the same time, ILSP contributed to the development of **POPEYE** (Population Elements for Young Learners), an innovative educational platform created in collaboration with Harokopio University. POPEYE introduces demographic literacy into school education through interactive and experiential learning activities, helping students understand major population trends and social transformations shaping contemporary societies. The platform combines educational scenarios, quizzes, videos, infographics, games, and teacher training resources within a unified digital environment, promoting critical thinking, active citizenship, and informed decision-making among young learners.

<https://popeye.edu.gr>

Advanced physicochemical research

ILSP's Xanthi branch and its Archaeometry & Physicochemical Measurements Laboratory have built a growing portfolio in environmental science, combining physicochemical analysis, AI-driven monitoring, and green circular economy approaches. In 2025, two projects defined ILSP activities in this area:

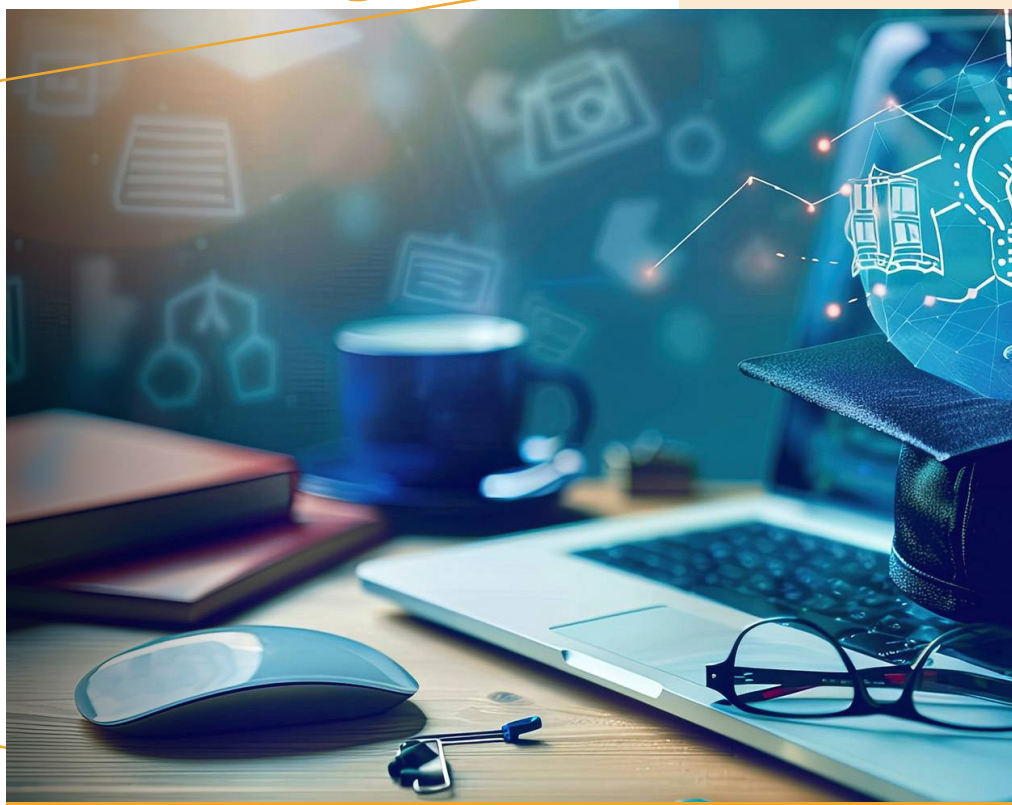
ALGEBRA focuses on cleaning natural waters and industrial wastewater contaminated with heavy metals using living microalgae. Recent experiments in real water matrices proved these systems are highly sustainable. By combining biotechnology with machine learning, the team successfully analysed metal uptake dynamics and biomass behaviour under complex environmental conditions.



Funded by the Horizon Europe, **AQUAMON** is a pioneering project aimed at redefining water quality monitoring in urban environments. The project develops a comprehensive suite of smart technologies for real-time sensor tracking, autonomous robotic data collection, AI-powered analytics, and interactive 4D Digital Twin modelling. By integrating live environmental data into a centralised digital platform, AQUAMON empowers local authorities and water management specialists to instantly detect pollutants, predict system behaviours, and collaboratively protect complex urban water networks for a zero-pollution future.

<https://aquamon-project.eu/>

Technology for social challenges



Masculinity and democracy

Within the framework of its Memorandum of Understanding with the National Centre for Social Research (EKKE), ILSP contributes language technology and AI expertise to the Horizon Europe project **MEN4DEM** (Masculinities for the Future of European Democracy). The project advances the study of political discourse through an innovative framework and coding platform for identifying and analysing manifestations of hegemonic masculinity in political speech. ILSP focuses on developing AI- and NLP-based methods for the automatic analysis of political discourse, leveraging its expertise in computational linguistics, discourse analysis, and large-scale language processing. Through the identification, annotation, and modelling of linguistic and narrative patterns associated with hegemonic masculinity, ILSP supports the development of computational tools and analytical workflows that enable the systematic, scalable, and evidence-based study of how authority, legitimacy, leadership, and power relations are constructed through language across diverse political and institutional contexts.



Digital transformation and green transition

The **JustReDI** project, a flagship national action, concluded in 2025, delivering policy proposals for ensuring that Greece's dual transition is just, resilient, and inclusive. The project combined social research and technology to assess the effects of digital transformation and green transition on Greek regions, social groups, and households. ILSP contributed technological tools and solutions to support data-driven policymaking, including a Digital Maturity Assessment (DMA) tool and data infrastructure for an observatory of Green and Digital Transition indicators.

Digital skills for the labour market

VET4Youth, a CEDEFOP project led by ILSP, maps and analyses the integration of digital skills in Initial Vocational Education and Training (IVET) curricula across eight EU Member States. It uses Natural Language Processing to extract, classify and compare digital skills across countries and sectors. The project provides cross-country insights and good practices to inform policy design and curriculum innovation for strengthening digital skills provision in IVET and will analyse gaps between the supply of digital skills in IVET curricula and labour market demand.



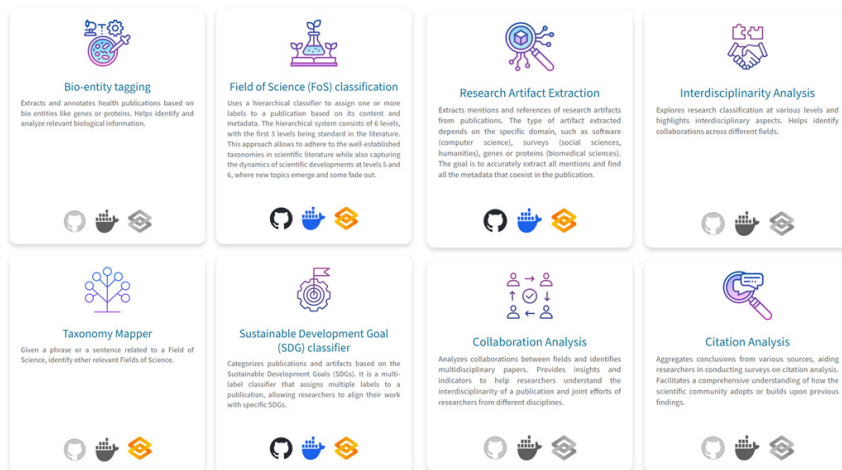
VET4Youth

Youth empowerment through the enhancement of **digital & green skills** in Southern Mediterranean region

<https://www.ilsp.gr/en/projects/vet4youth-en/>

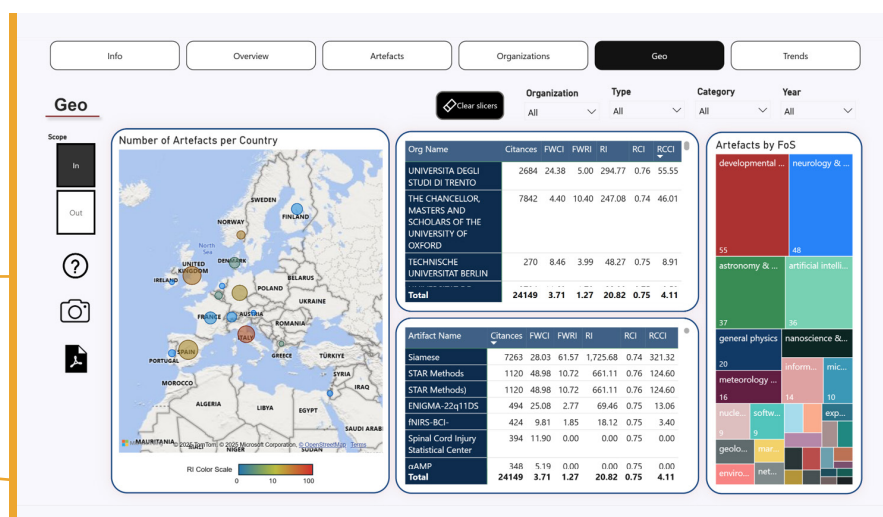
Open Science technology

Toolkit



The **SciNoBo Research Assistant** is a conversational AI interface enabling researchers to query scientific literature in natural language. Integrated with OpenAIRE, Semantic Scholar, and citation databases, it helps researchers explore research trends, analyse citations, and synthesise findings through natural dialogue.

<https://scinobo-assistant.ilsp.gr>



Conducted within the framework of the **TIER2 & Pathos** projects, the Reproducibility Monitoring platform marks an important step toward a more transparent and accountable research ecosystem. Designed for funding agencies and research-performing organisations, it enables the systematic monitoring of reproducible research practices across funded projects.

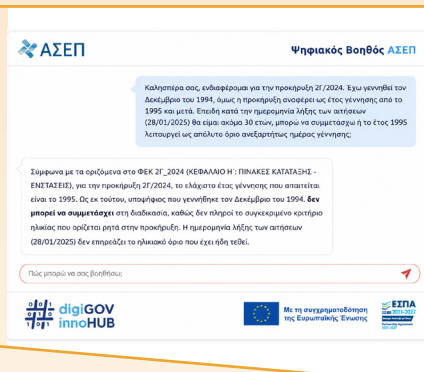
Through explainable monitoring tools and evidence-based indicators, the platform assesses the reusability of key research artefacts, including datasets, software, digital tools, and systems. It also provides policymakers with clearer evidence of how research investments translate into trustworthy and reusable scientific outputs. Moreover, by introducing practical proxies for reproducibility and replicability, the platform reduces administrative burden while strengthening oversight capabilities, laying the foundations for data-driven research governance at scale.

Empowering organisations in their digital transformation path

Under the GR digiGOV-innoHUB EDIH, ILSP and CTI “Diophantus” collaborated on the study *Transforming the e-me Digital Educational Platform into a Next-Generation Collaborative AI Learning Environment (e-me NextGen)*, examining the technological, pedagogical, and operational requirements for the evolution of the e-me platform into an AI-powered learning environment.

The team adapted and validated advanced LLMs and RAG technologies for the Greek educational ecosystem and developed the **e-me.ai Lesson Plan** prototype, a pilot application proving the technical feasibility of automatically generating personalised lesson plans for teachers.

Highlighting its impact, the European Schoolnet featured this initiative in its report on AI adoption in education, recognizing it as a key milestone for Greece.



Ανωνυμοποίηση εγγράφων

Εντοπισμός και ανωνυμοποίηση προσωπικών δεδομένων σε διοικητικά έγγραφα

Πρωτότυπο έγγραφο

για να δικάσει την από 21 Οκτωβρίου 2019 (ΑΚ1705/29-10-2019) αίτηση ακυρώσεως:

του **Χ. Π.** του **Φ.**, κατοίκου **...**, ο οποίος παραστάθηκε με δήλωση, κατ' άρθρο 33 (παρ.6) του π.δ/τος (ΦΕΚ Α' 8), όπως ισχύει, του δικηγόρου Σπύρου Κωνσταντόπουλου, τον οποίο είχε διορίσει με συμβολαιογραφικό πληρεξούσιο.

κατά του Ανώτατου Συμβουλίου Επιλογής Προσωπικού (Α.Σ.Ε.Π.), που εδρεύει στην Αθήνα (οδός **...** αρ. **...**) και παραστάθηκε με την Πάρεδρο του Νομικού Συμβουλίου του Κράτους,

Ανώνυμο έγγραφο

για να δικάσει την από 21 Οκτωβρίου 2019 (ΑΚ1705/29-10-2019) αίτηση ακυρώσεως:

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ILSP also collaborated with the Supreme Council for Civil Personnel Selection (ASEP) to explore the use of trustworthy AI technologies in public administration. The initiative resulted in the development of two pilot applications for large-scale recruitment procedures:

- a Data Anonymisation platform for the secure processing of administrative documents containing citizens' sensitive information,
- an intelligent digital assistant that leverages LLMs and RAG to respond to citizens' enquiries, based on ASEP's regulatory and administrative documentation.

The collaboration supported ASEP in charting its pathway towards the responsible adoption of AI technologies. The pilots enabled the organisation to evaluate technological, organisational, and operational requirements, build internal expertise, and identify opportunities for the future integration of trustworthy AI solutions into its recruitment and citizen-facing services.

New projects

Approved in 2025 and starting
in late 2025 or in 2026



THRACE-CONNECT

Unraveling Connections
between Aegean and
inland Thrace via the
Rhodope mountains,
through archaeological
exploration and spatial
technology

Funded by: H.F.R.I.

Duration: 02/06/2025 – 01/06/2028

ILSP's role: Coordinator

<https://thraceconnect.athenarc.gr>



AIXPERT

An agentic, multi-
layer, GenAI-powered
backbone to make an
AI system explainable,
accountable, and
transparent

Funded by: HORIZON EUROPE

Duration: 01/06/2025 – 31/05/2028

ILSP's role: Coordinator

<https://aixpert-project.eu>



UNICHE

Unified No-Code
platform for Interactive
Cultural Heritage
Experiences

Funded by: HORIZON EUROPE

Duration: 01/10/2025 – 30/09/2029

ILSP's role: Partner

<https://uniche-eccch.eu>



GenAI- EduMap

AI-ready education:
Mapping and innovating
Generative AI in
teaching and learning

Funded by: ERASMUS+ FORWARD-LOOKING

Duration: 01/04/2026 – 31/03/2029

ILSP's role: Coordinator

<https://genai-edumap.eu/>

AQUAMON

Advanced QUALity
MONitoring system of
water in urbaN areas

Strati Graph

Knowledge Graphs
for Stratigraphy



Funded by: HORIZON EUROPE

Duration: 01/06/2025 – 30/11/2028

ILSP's role: Partner

<https://aquamon-project.eu>

Funded by: HORIZON EUROPE

Duration: 01/10/2025 – 31/03/2029

ILSP's role: Partner

<https://www.echoes-eccch.eu/stratigraph>

NEXT-Gender

Capacity building for
the next generation
of researchers and
evaluators to engage
in inclusive sex and
gendered research



Funded by: COST Innovators

Duration: 01/11/2025 – 31/10/2026

ILSP's role: Partner

<https://gendervoices.eu/gender-voices/next-gender>

Transforming Heritage Research in a Transforming World: 5th CAA-GR Conference 2024

George Pavlidis & Stella Sylaiou.
Springer Proceedings in Archaeology and Heritage.



This volume captures the vibrant interdisciplinary dialogue on how digital technologies are reshaping archaeology and cultural heritage, covering topics from geophysics and risk management to 3D scanning, immersive visualisation, digital tourism, and museum accessibility.

<https://doi.org/10.1007/978-3-032-06389-2>

Foundations and Applications of Modern Cryptography

George Drosatos, Ioannis Mavridis & Konstantinos Rantos.
Kallipos, Open Academic Editions.



This 15-chapter undergraduate textbook comprehensively covers modern cryptography, including symmetric/asymmetric encryption, data integrity, and blockchain. It combines theoretical principles with practical applications, featuring laboratory exercises and interactive educational materials.

<http://dx.doi.org/10.57713/kallipos-1067>

Conferences and academic events

In 2025, ILSP organised and participated in major international conferences and academic events, reinforcing its commitment to knowledge dissemination, research excellence, and professional networking in the fields of natural language technology, document analysis, data science, and cultural heritage.

52nd CAA International Conference

Organised by: ILSP / Athena RC, International Hellenic University

Under the working title “Digital Horizons: Embracing heritage in an evolving world”, the conference successfully brought together more than 700 participants from 45+ countries, featuring 500 presentations across 55 sessions and 12 workshops on AI, digital twins, and participatory digital heritage.

<https://2025.caaconference.org/>

DIGITAL HORIZONS: EMBRACING HERITAGE IN AN EVOLVING WORLD



AthNLP 2025 Summer School

Organised by: Athena Research Center, NCSR “Demokritos”, Athens University of Economics and Business, Heriot-Watt University, University of Manchester.

September 4-10, 2025

The AthNLP 2025 summer school brought together researchers, graduate students, and industry practitioners from around the world in a week-long program. Lectures on theoretical aspects of natural language processing were complemented by hands-on lab sessions where participants implemented and experimented

with various ML techniques. Led by internationally recognised researchers from academia and industry, the curriculum covered essential NLP topics including classification, sequence prediction, linear models, neural networks, encoder-decoder architectures, machine translation, LLMs, and multimodality. Participants praised the balance between theoretical foundations and practical applications, with many highlighting the valuable networking opportunities with leading figures in the field.

<https://athnlp.github.io/2025>



AeGIS workshops and lectures



ATHENA
Research & Innovation
Information Technologies

MACEDONIA UNDER THE ROMANS
A UNIQUE CHAPTER IN THE
ARCHAEOLOGY OF NORTH GREECE
VASSILIS EVANGELIDIS

9:00 UK
10:00 CET
11:00 Athens
16:00 Beijing

WEDNESDAY
**4 JUNE
2025**

ONLINE LECTURES
**ON ROMAN
GREECE**
SHANSHAN BAI (SICHUAN)
CHRIS DE LISLE (DURHAM)

The successful lecture series “Mapping the Past: Exploring the Intersection of Mapping Technologies and Archaeology” continued its run into 2025. Organised by the AeGIS lab of ILSP at the Athena Research Center, the ongoing series featured diverse presentations highlighting the integration of digital tools in archaeological research. The 2025 sessions included insightful talks on using GIS to reconstruct ancient networks, applying artificial intelligence to map regional landscapes, and managing archaeological data with mobile geomatics. By showcasing these cutting-edge methodologies, the series successfully advanced the dialogue between spatial technologies and historical exploration.

<https://aegis.athenarc.gr>



Connecting to the wider public

In line with its ongoing mission to engage young people and the wider public with research and innovation, ILSP continued its outreach activities in 2025, participating in key events that offered opportunities for interaction, inspiration, and hands-on experiences with science and technology.

Xanthi Puzzle Festival

In April 2025, ILSP proudly inaugurated the first ever **Xanthi Puzzle Festival!** Originating from Kastellorizo island, the pioneering scientific festival transformed Xanthi into a hub of creative thinking and scientific discovery. The event featured engaging speeches, workshops, and interactive activities, bringing together over 50 academics and researchers to engage with students and the public. Through this collaboration, Athena RC successfully fostered scientific outreach, demonstrating how complex logical, mathematical, and technological concepts can be approached through playful exploration and experiential learning.





89th Thessaloniki International Fair

As a satellite of its participation in the **89th Thessaloniki International Fair**, ILSP hosted an open event titled **“LLMs Made in Greece: From Research to Entrepreneurship”**. Aimed at Thessaloniki’s research, technology, and business communities, the event focused on Greek-language LLMs and their

applications. Featuring presentations from ILSP researchers and a panel discussion with AI, innovation, and business experts, the event successfully fostered dialogue on the transformative potential of LLMs and AI in strengthening Greece’s innovation and entrepreneurship ecosystem.



Athens Digital Health Week

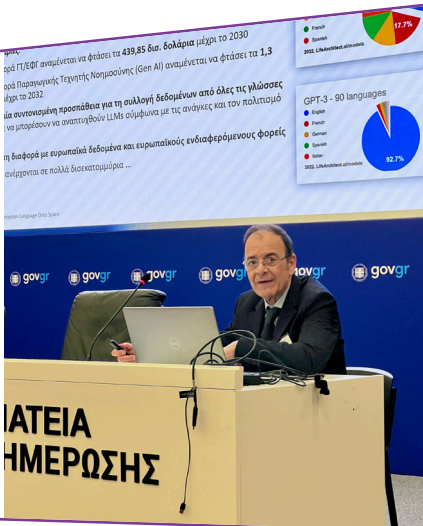
As part of **Athens Digital Health Week 2025**, the Hellenic Digital Health Cluster (HDHC), in collaboration with smartHEALTH EDIH, successfully hosted the panel discussion **“Healthcare Providers – Navigating Digital Transformation.”** Moderated by Haris Papageorgiou, the session brought together an esteemed panel of industry experts and key stakeholders. The discussion focused on the rapidly evolving landscape of digital healthcare, addressing critical challenges and identifying strategic pathways to accelerate the urgent and necessary transformation of modern healthcare systems.





DATAMITE Meetup

ILSP's leading role in data innovation was highlighted at the 2025 DATAMITE Meetup at OTE Group Headquarters. ILSP Director Vassilis Katsouros shared expert insights on a panel exploring the opportunities and risks of European data spaces. In the event's showroom, ILSP showcased key contributions to major European initiatives: the European Language Data Space (LDS) for secure multilingual data sharing, DataTools4Heart for AI-driven advancements in cardiovascular healthcare, and AI4EDU for accelerating data-driven transformation in education.



Greek stakeholders LDS workshop

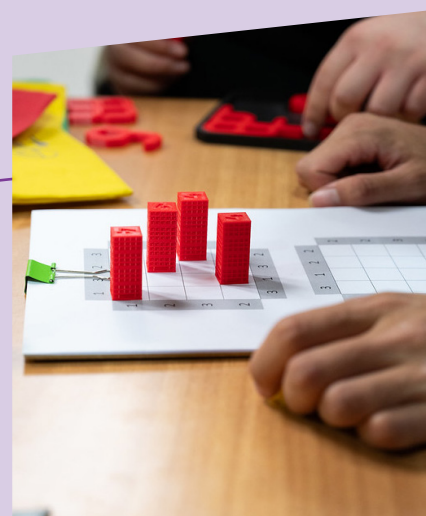
On December 9, 2025, ILSP, in collaboration with the European Language Data Space (LDS), co-organised a Greek stakeholders LDS workshop at the Ministry of Digital Governance. The event brought together experts from industry, research, and public administration, including policymakers from the Hellenic Government, to discuss the strategic role of language data in advancing AI and LLMs for the Greek language. In addition to showcasing LDS's data-sharing ecosystem, the workshop explored key national synergies, notably spotlighting "Pharos, the Greek AI Factory."



Mediterranean Researchers' Night – MEDNIGHT 2025

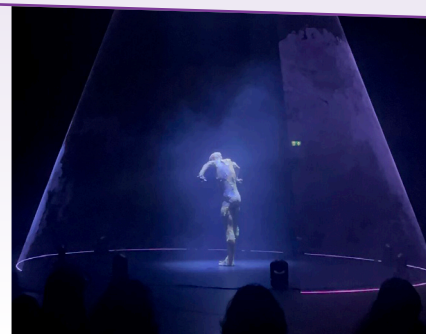
For the second consecutive year, the city of Xanthi hosted the Mediterranean Researchers' Night – MEDNIGHT 2025, bringing to life a celebration that unites the Mediterranean under the light of science. More than 500 people participated in an event dedicated in knowledge, innovation, sustainability, and public

engagement. This year's event highlighted the multifaceted work of ILSP's teams through thematic areas that bridge science and society: artificial intelligence and education, cultural documentation and digital heritage, STEM education, robotics, and student innovation, as well as archaeology and 3D reconstructions, among others.



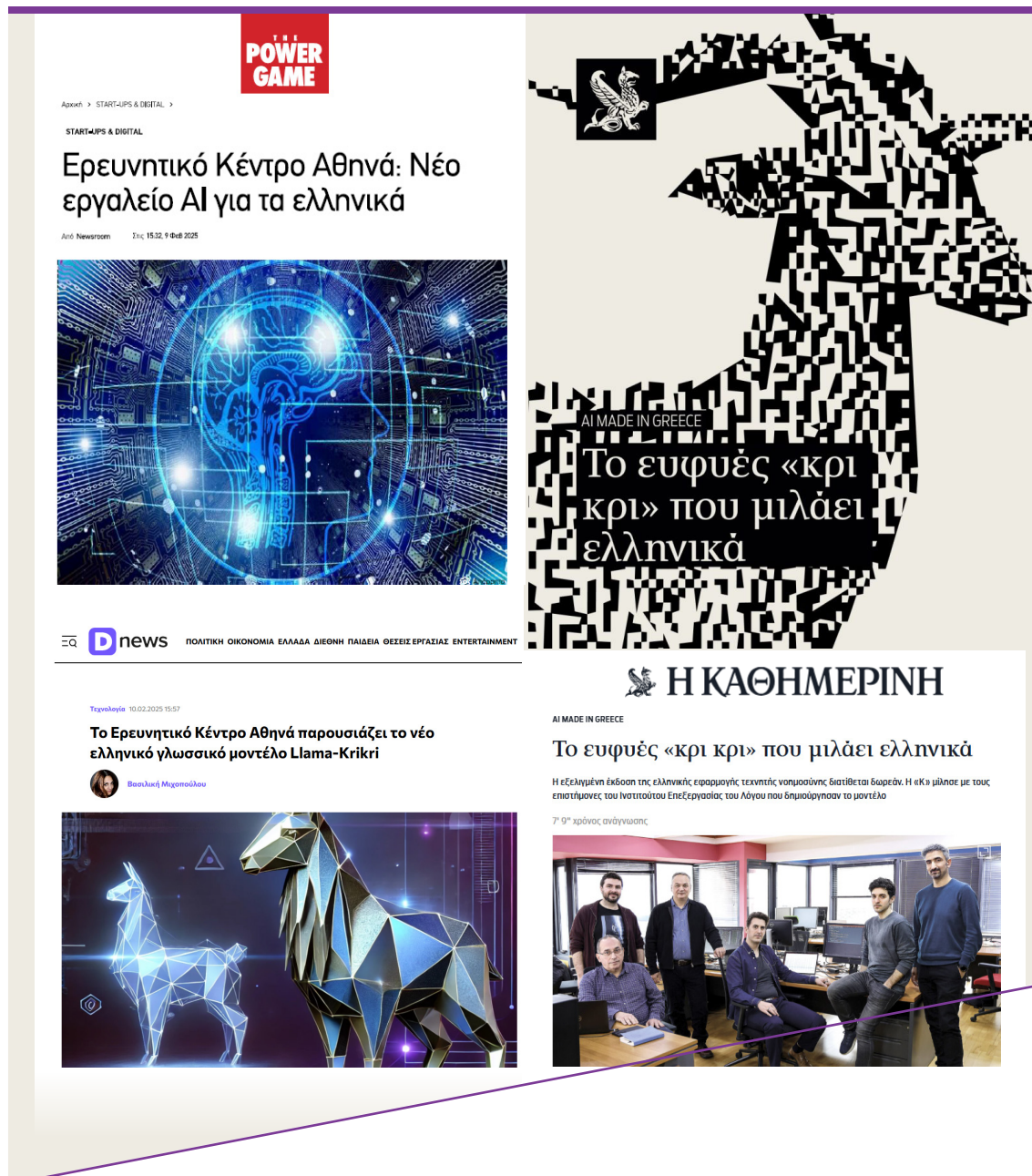
PREMIERE Live: A Festival of Performing Arts, Technology & Experimentation

At the capstone public event of the PREMIERE project, coordinated by ILSP, all project technologies were demonstrated to 300+ audience members through live performances, VR experiences, and hands-on workshops. PREMIERE was subsequently selected as an EC Success Story.



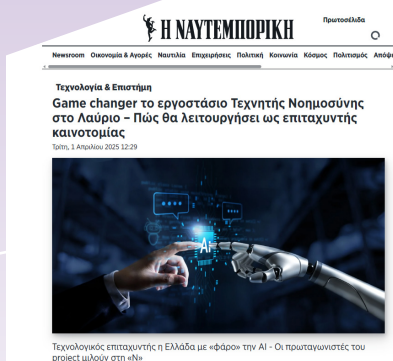
In the spotlight: ILSP in the media

The public discussion on AI and LLMs not only continued in 2025 but it intensified. A major highlight was the February 2025 launch of our new Greek LLM, Llama-Krikri, which, following in the footsteps of its predecessor, Meltemi, captured widespread attention across the Greek media and firmly positioned the Institute at the forefront of the national AI conversation (featured in Kathimerini, Skai 100.3 radio, Naftemporiki TV etc.)





Vassilis Katsouros, Haris Papageorgiou, Georgios Paraskevopoulos, Chara Tsoukala on the emerging abilities of Agentic AI (Kathimerini special issue, July 2025)



Presentation of Pharos, the Greek AI Factory (Naftemporiki, April 2025)



Vassilis Katsouros on Llama-Krikri and Greek AI (Naftemporiki TV, February 2025)



Vassilis Katsouros in an interview on Greek AI and investment in infrastructures (Turning Points, a special edition of Euro2Day and New York Times, April 2025)



ΠΑΡΑΤΗΡΗΤΗΣ
ΤΗΣ ΘΡΑΚΗΣ

Despoina Tsiadaki on Ancient Thrace and the region's archaeology (Paratiritis Thrakis, March 2025)



How is an LLM developed – Two HI-TECH episodes dedicated to LLMs (Action 24 TV, May 2025)

Distinctions

Final Leaderboard
DCVLR 1st Edition - NeurIPS 2025 Competition Results

Rank	Team	Dataset	Technical Report	Accuracy	Δ vs Baseline
1	University of Hawaii at Manoa - team 3	View Dataset	View Report	46.12%	+7.28%
2	AFIE	View Dataset	View Report	42.13%	+3.29%
3	AthenaRC	View Dataset	View Report	41.81%	+2.98%
4	ZhuYun - PiLab	View Dataset	View Report	38.84%	+0.01%

NeurIPS 2025 DCVLR Competition

The ILSP team (Eleni E. Kasoura, Georgios Paraskevopoulos, Dimitrios Damianos, Vassilis Katsouras) won the **Innovation in Data Curation Prize**, placing 3rd overall on the final leaderboard for expanding the Magpie framework to support multimodal instruction generation.

Editors' choice in Computers MDPI journal

The paper "Agentic AI for Cultural Heritage: Embedding Risk Memory in Semantic Digital Twins", authored by George Pavlidis and developed within ARGUS Project, was selected as an Editors' Choice paper.



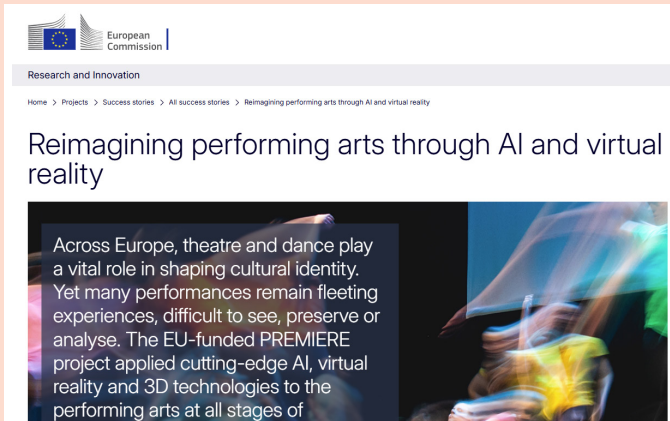
IEEE TCCH Outstanding Service Award to George Pavlidis

Dr. George Pavlidis, Director of Research at ILSP, Athena Research Center, was honoured with the IEEE TCCH Outstanding Service Award for his contributions to cultural heritage and digital technologies.

Interspeech 2025

Speech Emotion Recognition in Naturalistic Conditions Challenge. Efthymios Georgiou, in a joint effort with colleagues from NTUA and ARCHIMEDES won the first prize for Medusa, a deep-fusion multimodal ensemble that effectively handles class imbalance and emotion ambiguity.





European Commission Research & Innovation Success Story

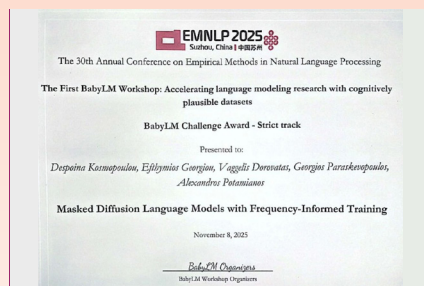
The EC's Research and Innovation portal selected PREMIERE as an official Horizon Europe Success Story, recognising the project's impact in AI, VR, and cultural heritage.

OECD Citation Governing with Artificial Intelligence

Meltemi and Llama-Krikri were cited in the OECD report as an example of linguistically grounded AI development; one of 200 practical AI applications featured in the report's global public sector case studies.



EMNLP 2025 BabyLM Challenge Award



The ILSP and ARCHIMEDES team (Despina Kosmopoulou, Efthymios Georgiou, Vangelis Dorovatas, Georgios Paraskevopoulos, Alexandros Potamianos) received the **BabyLM Challenge Award (Strict Track)** at the First BabyLM Workshop, co-located with EMNLP 2025. The team developed an innovative diffusion-based language modelling approach that achieved state-of-the-art performance under the cognitively plausible data constraints of the BabyLM Challenge, advancing research on data-efficient and human-inspired language learning.

People in focus



Katerina Pastra,
Principal Researcher,
President of EETN

Honors

In a remarkable demonstration of ILSP's standing in the Greek AI community, two researchers from the Institute were elected to the Board of the Hellenic Artificial Intelligence Society (EETN) in the February 2025 elections.



Chairi Kiourt,
Principal Researcher, Member
of the EETN Board



Prokopis Prokopidis,
as Senior Research Fellow (ELE A')

Welcomes

Two new tenured positions were awarded in 2025. Warm welcome to:



Georgios Paraskevopoulos,
as Associate Researcher (Grade C)

Prokopis is a computational linguist, holding an MA from the University of Essex. He has contributed to the development of language resources and tools for the analysis of Greek texts, as well as to the recent national effort to develop and benchmark LLMs for the Greek language, contributing to the presence of Greek in modern artificial intelligence technologies.

George received his PhD in multimodal deep learning from NTUA. He has ML engineering experience in the industry, including internships at Amazon Alexa and AWS. His research focuses on multimodal representation fusion, cognitively-inspired architectures, and neural network domain adaptation.

Farewells to retiring researchers

At the end of 2025, ILSP bid farewell to five founding-generation researchers whose long-standing service helped shape the Institute's identity from its earliest years. Their work shaped the disciplines of Greek computational linguistics, speech technology, and lexicography.

Aggeliki Fotopoulou

Research Director | NLP & Computational Lexicography | ILSP since 1999

Aggeliki's 26-year tenure at ILSP is marked by continuous service and core contributions to Greek language infrastructure. Joining in 1999 and serving as Research Director since 2015, she directed the development of foundational institutional resources,

including the SYMFONIA, XENION, and POLYTROPO lexicons. In addition, she has contributed to the development of the digital archive of the Greek National Theatre, supporting the preservation and accessibility of Greece's cultural heritage through digital technologies.



Ioanna Antoniou-Kritikou

Research Director | Educational Technology | ILSP since 1995

Ioanna has dedicated over three decades to ILSP, serving as Research Director since 2004 and Head of the Department of Learning Technologies. She has led the development of educational multimedia software, shaped teacher training, and

advanced computer-assisted language learning research. Her extensive work on the Institute's flagship products, such as Logomatheia and Filoglossia, left a lasting impact on its educational technology portfolio.



Ioannis Dologlou

Research Director | Speech Processing | ILSP since 1999

Ioannis Dologlou has served as a senior researcher at ILSP since 1999, following extensive international research tenures at institutions like CNRS and KU Leuven. His research in speech processing and spectral estimation accounts for over

100 scientific publications. Parallel to his academic work, he co-founded Voiceln, an ILSP spin-off company, bringing Logografos, the first commercial Greek speech recognition system to the Greek market.

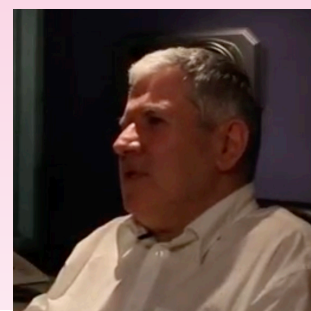


Stelios Bakamidis

Research Director | Speech Technology | ILSP since 1992

Stelios served at ILSP since 1992, as Research Director for the last twenty years. Throughout his tenure, he has led the Institute's research activities in speech and language processing, playing a key role in advancing the field through participation in more than 30 national

and European research projects, resulted in over 70 scientific publications and patents. He was co-founder of Voiceln, an ILSP spin-off company, and co-created Logografos, the first commercial Greek speech recognition system in the Greek market.



Stella Markantonatou

Research Director | Computational Linguistics | ILSP since 1998

Over her 25-years tenure, most of them as Research Director, Stella has managed 20 national and international R&D projects and authored more than 100 scientific papers and edited volumes, significantly enhancing the institute's track record in

NLP and Digital Humanities. Notably, she has led the development of the IDION database and pioneered resources for Modern Greek dialects, anchoring the institute's work in multiword expressions and NLP applications.

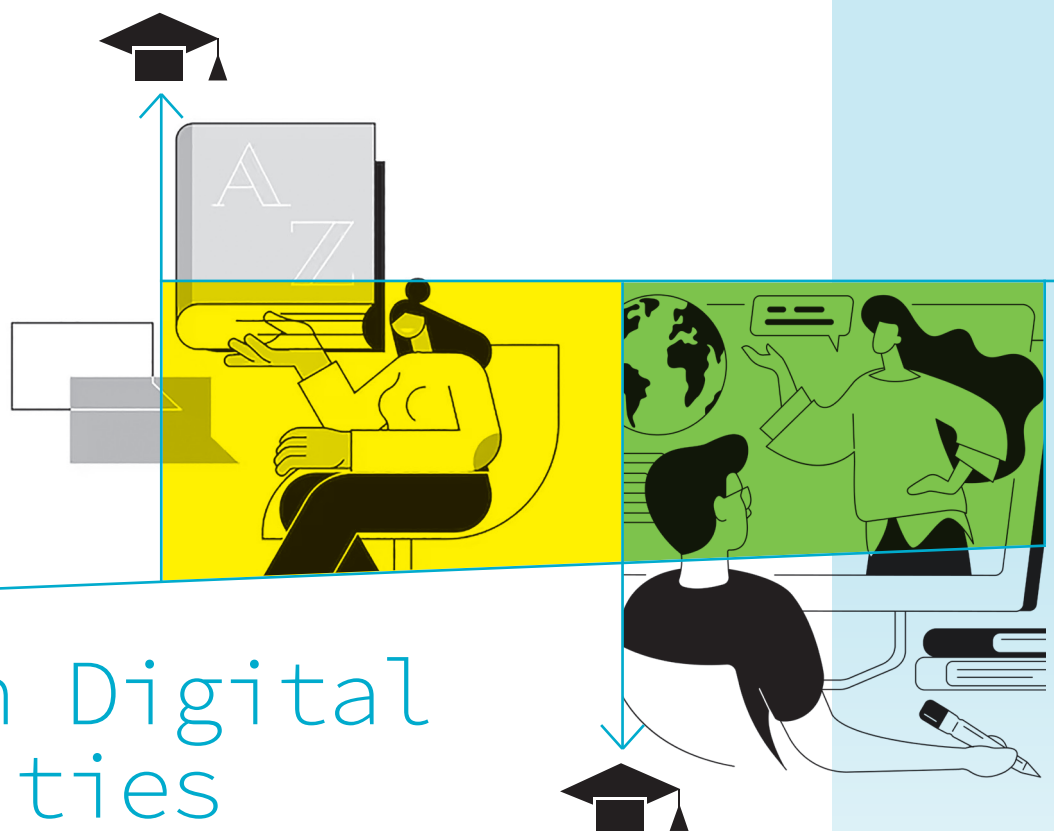


MSc in Language Technology

In collaboration with **the National and Kapodistrian University of Athens** (NKUA), Department of Informatics and Telecommunications (DIT)

Main fields of focus: Artificial Intelligence, Data Science, Natural Language Processing, Speech Technologies, Automated Translation, Large Language Models, Machine Learning, Human-Computer Interaction.

<https://www.di.uoa.gr/lt>



MSc in Digital Humanities

In collaboration with the **National and Kapodistrian University of Athens** (NKUA), Department of History and Archaeology | Department of Philology | Department of History and Philosophy of Science | Department of Digital Industry Technologies and the University of Cyprus, Department of History and Archaeology.

Main fields of focus: Data Analytics for Humanities, 3D Technologies, Augmented Textual Studies, Geographic Information Systems.

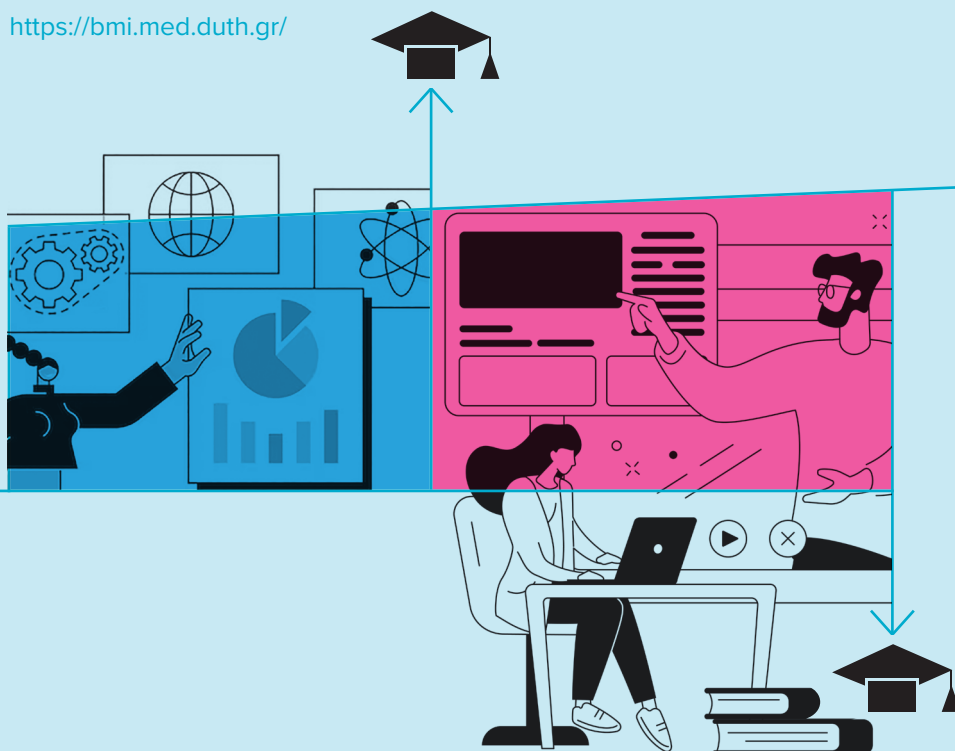
<https://dh.arch.uoa.gr/>

MSc in Biomedical Informatics

In collaboration with the **Democritus University of Thrace (DUTH)**, Department of Medicine

Main fields of focus: Health Sciences, Medical Informatics, Bioinformatics.

<https://bmi.med.duth.gr/>



MSc in Data Science & Information Technologies

In collaboration with the National and Kapodistrian University of Athens (NKUA), Department of Informatics and Telecommunications (DIT), Academy of Athens, Biomedical Research Foundation (BRFAA)

Main fields of focus: Data Science, Big Data, Artificial Intelligence, Applied Mathematics, Bioinformatics, Computational Biology, Biomedical Data Science.

<https://dsit.di.uoa.gr/>

Our labs

CLEPSYDRA Cultural Heritage Digitisation Lab

CLEPSYDRA focuses on the digitisation, preservation, organisation, and dissemination of cultural heritage. It specialises in the recording and documentation of cultural objects and monuments from various periods, as well as in more general digitisation tasks with an emphasis on 3D digitisation of objects, buildings and places. Additionally, Clepsydra's activities include the development, optimisation and prototyping of new and existing techniques of digital recording and digital collections creation as well as the management of digitisation projects from their early stages of design to their development.

<https://clepsydra.athenarc.gr/>



AeGIS Athena

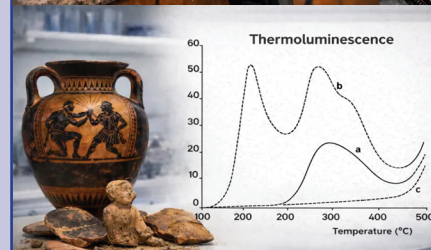
AeGIS Athena Lab was established in 2020, building upon the long-standing engagement of ILSP in Xanthi towards leveraging GIS technology in archaeological data recording. This includes various techniques such as archaeological mapping, geospatial databases, photogrammetry, and archaeometry. The lab is dedicated to equipping archaeologists, historians, and cultural heritage professionals with comprehensive tools for high-resolution documentation and mapping, as well as analysis of archaeological sites and landscapes through GIS. Additionally, at a research level, it aims to explore the significant potential of GIS applications in addressing specific archaeological challenges through innovative approaches. Ultimately, the lab serves as a central hub for studying cultural landscapes and the interaction between humans and their environment.

<https://aegis.athenarc.gr/>

Archaeometry and Physicochemical Measurements Lab

The Lab's aim is the support and promotion of scientific research in the field of archaeometry, the development of new methods and innovative analytic and computational technical assessments, as well as the transfer of current research results in scientific fields from the area of Cultural Sciences. Using advanced physicochemical methods, the Lab aims to identify materials and extract information from archaeological objects, monuments, artworks and raw materials, in order to obtain fuller knowledge and understanding of cultural evolution.

<https://apmlab.athenarc.gr/>



Audio-visual studio

ILSP's audio-visual studio is equipped with modern facilities for digitally capturing and processing visual (image/video) and audio data in a soundproof environment. The studio is specifically designed to facilitate ILSP's research and development efforts, such as content creation for educational and cultural applications, recording audio, audio-visual, and multimodal resources, and conducting experiments.

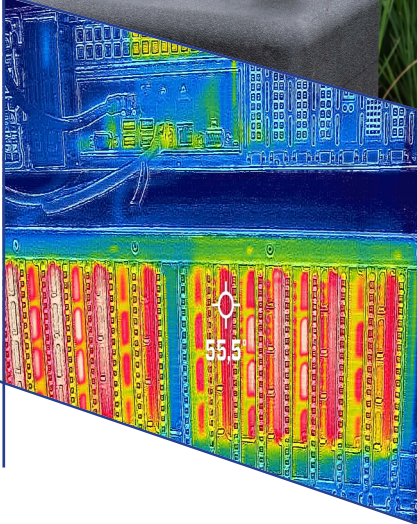


HUBIC Human Behaviour, Interaction and Communication Lab

The HUBIC Lab has been designed to support advanced research in multimodal interaction, ranging from human-machine interaction to human social behaviour. It includes modern equipment for the recording, analysis, and modelling of multimodal systems that relate to human behaviour (speech, facial expressions, body movement, eye movement and signals from other biosensors), as well as its convincing reproduction by robots and virtual agents.

<http://www.hubic-lab.eu/>

Infrastructure



Onboard Computers

providing robust solutions for computer vision, artificial intelligence, and automated data processing needs. From educational applications to IoT programming and high-performance AI, they offer versatility across diverse sectors. Equipped with powerful computing capabilities, internet connectivity, and integrated sensors, these systems empower advanced automation and robotics projects with seamless functionality.

High Performance Computing systems

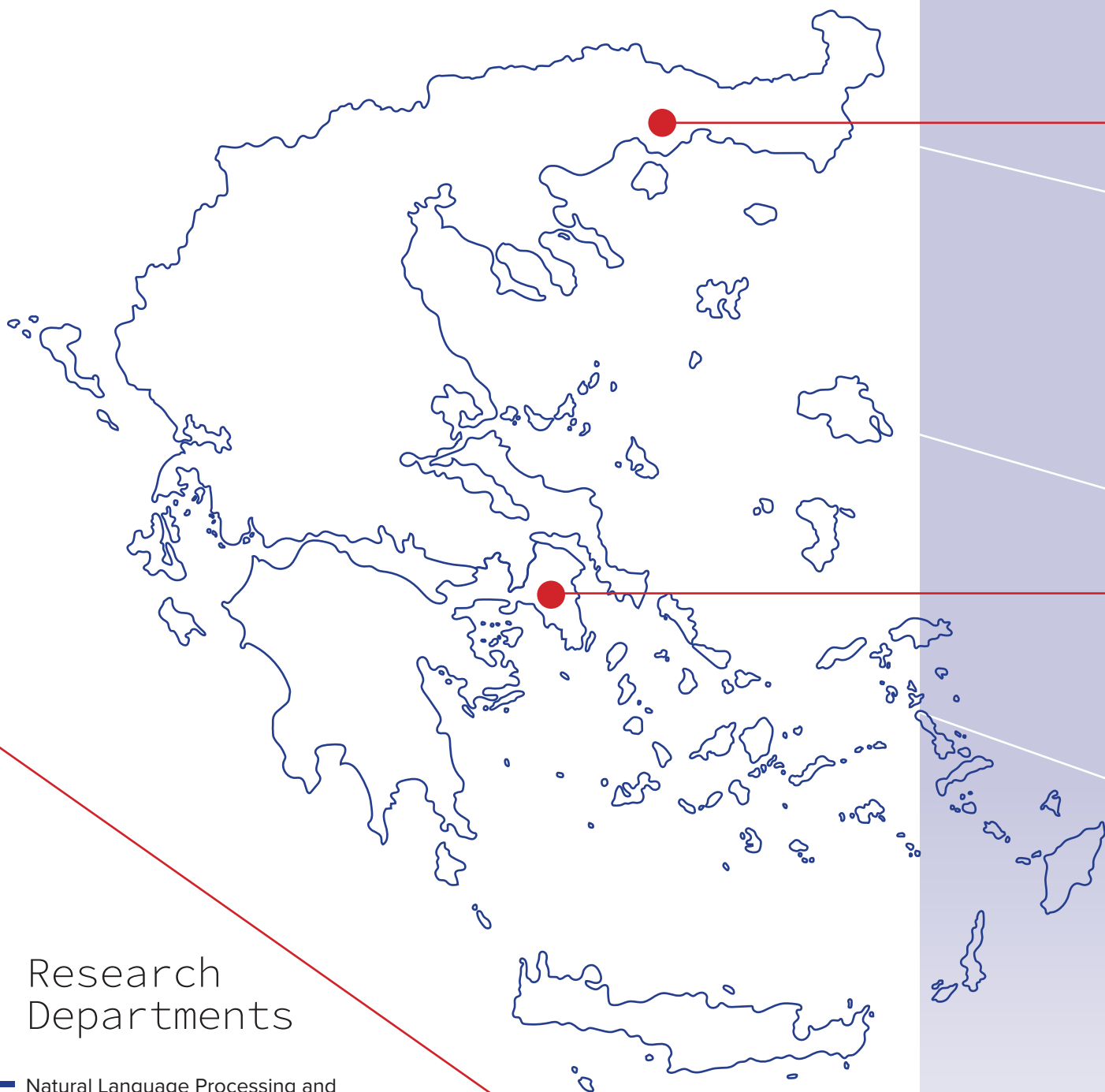
harness the power of multiple high-performance graphics cards, enabling rapid processing speeds. These systems find applications in training machine learning models, graphics editing, scientific simulations, data analysis, and 3D digitisation. With their exceptional processing capabilities, they facilitate complex computational tasks across various fields, driving innovation and efficiency.

Unmanned Terrain Vehicles

for research and development purposes in the areas of artificial intelligence, robotics, computer vision and agricultural research, including an autonomous ground vehicle with robotic arm and grabber, for use mainly in the agricultural sector, such as for crop monitoring, fertilizer supply and samples collection.

Swarm of drones

for various applications such as environmental monitoring, urban surveillance, geographical mapping, archaeological research and 3D modelling, including a drone with a multispectral camera and a thermal drone designed for thermal imaging applications.



Research Departments

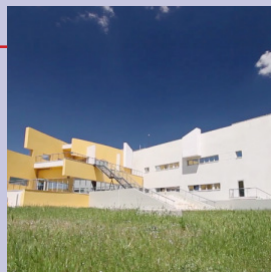
— Natural Language Processing and
Language Infrastructures

— Speech, Media, and Content Technologies

— Embodied Interaction and Robotics

— Culture and Creative Industries

— Learning Technologies



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