

WEBINAR

European data spaces in practice: insights from the Data Space for Skills



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10 April 2026

10:00 – 11:00 CEST

Rules of the game



The webinar will be recorded and published on the data.europa academy



For questions, please use the ClickMeeting chat



Please reserve 3 min after the webinar to help us improve by filling in our feedback form



Today's speakers



Flora Kopelou
European Data Portal,
Publications Office of the EU



**Nathan da Silva
Carvalho**
Senior Research and
Innovation Manager at
DIGITALEUROPE



Marcos da Silveira
Lead Researcher at the
Luxembourg Institute of
Science and Technology
(LIST)



Agenda

10.00 – 10.05	Opening and introduction – <i>Flora Kopelou</i>
10.05 – 10.25	DS4Skills project overview – <i>Nathan da Silva Carvalho</i>
10.25 – 10.45	LIST use case: personalised and job market-aligned training for future-ready workforce – <i>Marcos da Silveira</i>
10.45 – 11.00	Q&A and closing remarks





DS4Skills
COMMON EUROPEAN DATA
SPACE FOR SKILLS

DS4Skills project overview

Nathan Carvalho, DIGITALEUROPE

10 April



Co-funded by
the European Union

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What is DS4Skills?



A space for growth, where skills and innovation come together to shape your potential.

Co-funded
by the European Union

36
months

26
partners

8
use cases

Mission: Creating a Human-Centric European Data Space for Skills while driving innovation, education, and employment across Europe.

About the DS4Skills project

What is DS4Skills?

Deploy the common **European Data Space for Skills** that connects key stakeholders across Europe to enhance digital skills, improve employment opportunities, and provide practical benefits to both organisations and individuals in the digital age.



Human-centric data space

User-focused, privacy-aware design of the skills data space.



Data space deployment

From blueprint to real implementation through use cases.



26 partners

Multi-stakeholder ecosystem (industry, academia, public sector).

EU European-level deployment

Deployment across multiple EU countries and ecosystems.

Deploying the European Skills Data Space through **Eight Sustainable Use Cases**

Bridging
Skill Gaps



Fostering Student
Mobility



Developing
the Workforce



TRANSFORMING OPPORTUNITIES

Employers, HR & training
providers

Educational institutions &
students

Manufacturing sector

Stakeholders Impacted

Employers, HR & training providers

- Personalised learning pathways bridging skill gaps
- Increased skill transparency
- Better recruitment and upskilling
- Precise skill matching
- Facilitated student job search and recruitment
- Reduced fraud

Educational institutions & students

- Easier access to EU universities learning opportunities
- Improved data quality via AI-powered classification
- Enhanced sharing of learning experiences and skills data

Manufacturing sector

- Personalised learning platform matching training to industry needs
- Bridging theory and practice
- Targeted upskilling for the manufacturing workforce

DS4Skills Use Cases

The use cases focus on key challenges such as lifelong learning, upskilling, and employee retention, demonstrating the practical benefits of the European Skills Data Space.

Supporting Student Mobility and Lifelong Learning

Partners involved:
CSC - IT Center for Science;
Tampere University; University of Jyväskylä; Metropolia University of Applied Sciences

  Finland

Human Soft Skills Assessing Automation

Partners involved:
Mylia; BadgeBox

  Italy

Mind the Gap: Skill-driven Strategic Workforce Learning and Development

Partners involved:
Scheer

  Germany

Mind the Gap: Personalised and Job Market-Aligned Training for Future-Ready Workforce

Partners involved:
LIST

  Luxembourg

Connecting Personal Skills-data to the Data Space

Partners involved:
Athumi; IMEC

  Belgium

Skills-driven Higher Education Institutions

Partners involved:
UOC

  Spain

Dataspace for Manufacturing Skills

Partners involved:
LMS

  Greece

When Media Data Meets Education – Empowering Media Literacy

Partners involved:
AFP; TRALALERE

  France





DS4Skills specific objectives

Specific Objective 1

Establish a Robust Management, Coordination, and Governance Framework:

Develop a secretariat for continued and structured management of and support to the DS4Skills community members. (WP1, WP6)



 Governance Impact	 Ecosystem Participation	 Stakeholder Engagement	 Coordination Insights
No. of practical recommendations from the advisory board fully implemented during the project life	No. of networks, associations, and key players on data space for skills actively participating in the project	No. of stakeholders involved in project consultations	No. identified coordination and collaboration needs among data space for skills stakeholders

DS4Skills specific objectives

Specific Objective 2

Deploy Technical Infrastructure and Implement Data Governance and Use

Cases: Develop and deploy the technical infrastructure needed for the data space for skills and develop the use cases. (WP2, WP3, WP4)

Skill-driven Strategic Workforce Learning and Development

Scheer



Functionalities:

- Consolidate and manage diverse skills data from various sources and formats
- Visualize skills and gaps through dashboards for HR, managers and executives
- Analyze skill gaps across employees, teams, company and against market trends
- Match employees with personalized trainings, career paths and project tenders
- Recommend internal and external training offers aligned with internal needs
- Identify required new hires based on validated skill gaps
- Provide actionable insights for investment decisions on training vs. hiring

Added value:

- Skill transparency across the organisation
- Targeted upskilling based on real needs
- Enhanced career development and internal mobility
- Data-driven decision-making for HR and leadership
- Efficiency and cost savings through better resource allocation
- Strategic agility in adapting to future skill demands
- Trust and compliance through controlled and structured data use

Funded by the European Union

Mind the Gap: Personalized and Job Market-Aligned Training for Future-Ready Workforce

Main functionalities (Tasks 1 – 3):

- **T1: Annotation** of job offers, résumés and trainings based on **ESCO** skills using **generative AI**, reasoning systems, and classifiers
- **T2.1: Personal analysis** to match personal skills from **résumés** with **job offers**
- **T2.2: Market analysis** to identify highly **required skills** by clusters and sets of **trainings** covering them.
- **T3.1: Recommendations of training** for supporting missions of employment counsellors to **job seekers**.
- **T3.2: Recommendations of missing trainings** in Luxembourg for **training managers**.

Added value:

- Flexibility and transparency in the skill extraction/matching process
- Sovereignty and trust of data processing
- Harmonization in data format and terminology
- Strategic view on the job market
- Comparative view on skills needs
- Enhanced career advising with data-driven support systems
- Personalized training advising for upskilling
- Strategic national view on training needs

Funded by the European Union



Data Availability

Total No. of data sets available via the data space (*)

Skills Services

Total No. Of skills services available via the data space (*)

Use Cases Innovation

No. of innovative use cases that have been developed by participants of the data space beyond the initially foreseen use cases (*)

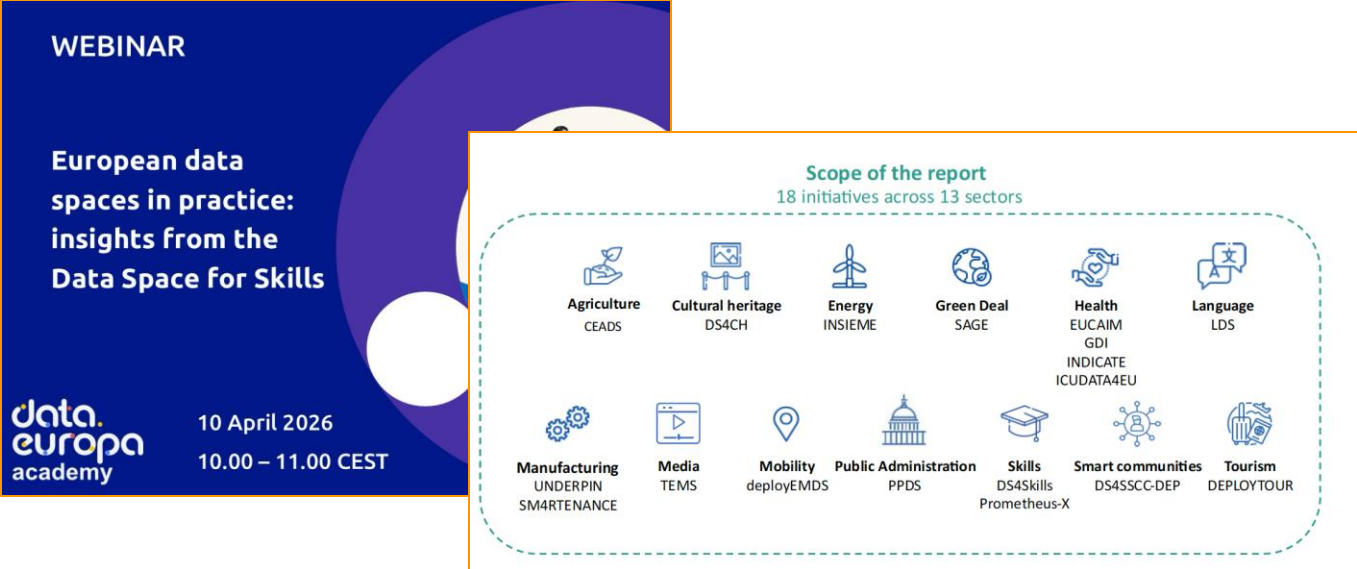
User Impact

No. of final users impacted by the developments produced within the project (e.g., through job or training matchings).

DS4Skills specific objectives

Specific Objective 3

Foster Collaboration, Drive Innovation, and Ensure Sustainability: Encourage data exchange between *private* and *public* actors. Promote the creation of new services and contribute to educational, labour market, and innovation policies. (WP4, WP5, WP6)



WEBINAR





European data spaces in practice: insights from the Data Space for Skills

data.europa academy

10 April 2026
10.00 – 11.00 CEST

Scope of the report
18 initiatives across 13 sectors

- Agriculture CEADS
- Cultural heritage DS4CH
- Energy INSIEME
- Green Deal SAGE
- Health EUCAIM GDI INDICATE ICUDATA4EU
- Language LDS
- Manufacturing UNDERPIN SM4RTENANCE
- Media TEMS
- Mobility deployEMDS
- Public Administration PADS
- Skills DS4skills Prometheus-X
- Smart communities DS4SSCC-DEP
- Tourism DEPLOYTOUR





 Data Exchange	 Policy Contributions	 New Services & Business Models	 Policy Uptake
No. of private and public organisations that exchanged data (*)	No. of contributions to educational, labour market, and innovation policies (for example through network effects or policy or research papers for which the data space was used) (*)	No. of new services (as origin of new business models) created during the project by SMEs (*)	No. mentions about the project and its recommendations in policy documents

DS4Skills specific objectives

Specific Objective 4

Enhance data space uptake and engagement: Increase the number of users and organisations connected to the data space. (WP2, WP3, WP4, WP5, WP6)



 Individual Users	 Organisational Users	 User Satisfaction	 Training & Onboarding
No. of individual end users (e.g., students, workers, jobseekers, employees), using data space services (*)	No. of organisational end users connected to the data space	Percentage of users satisfied with the data space services based on project satisfaction surveys.	No. of training sessions to reduce the entry barrier for stakeholders wishing to participate in the data space by offering comprehensive training on the technical infrastructure.

DS4Skills partners





DS4Skills
COMMON EUROPEAN DATA
SPACE FOR SKILLS

Mind the Gap: Personalized and Job Market-Aligned Training for Future-Ready Workforce

AI-Powered Skills Extraction & Standardization

Data.europa Academy Webinar: **April 10, 2026**



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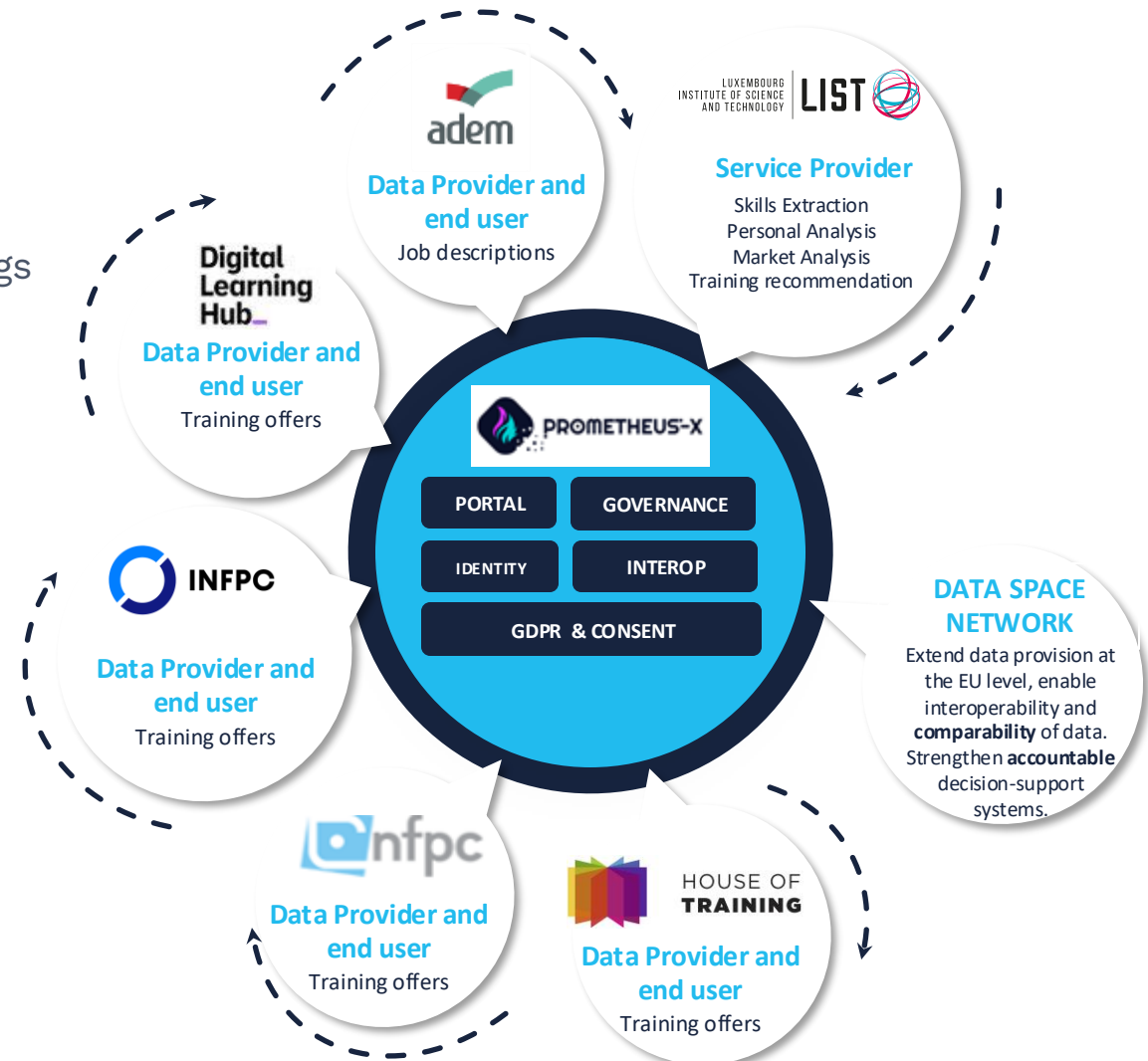
Mind the Gap: Personalized and Job Market-Aligned Training for Future-Ready Workforce

Main Functionalities Tasks 1 – 3

- T1 Annotation** — ESCO-based annotation via generative AI
- T2.1 Personal Analysis** — Match résumé skills to job offers
- T2.2 Market Analysis** — Map in-demand skills & matching trainings
- T3.1 Training Rec.** — Data-driven guidance for counsellors
- T3.2 Training Gap** — Identify training gaps for managers

Added Value

- 👁️ Transparent skill extraction
- 📈 Harmonized terminology
- 💡 Data-driven career advising
- 🎯 Personalized upskilling
- 🛡️ Sovereign data processing
- 🔍 Strategic job market view
- 🎯 Comparative skills analysis
- 💡 National training strategy



What Is the LIST Annotation Service?

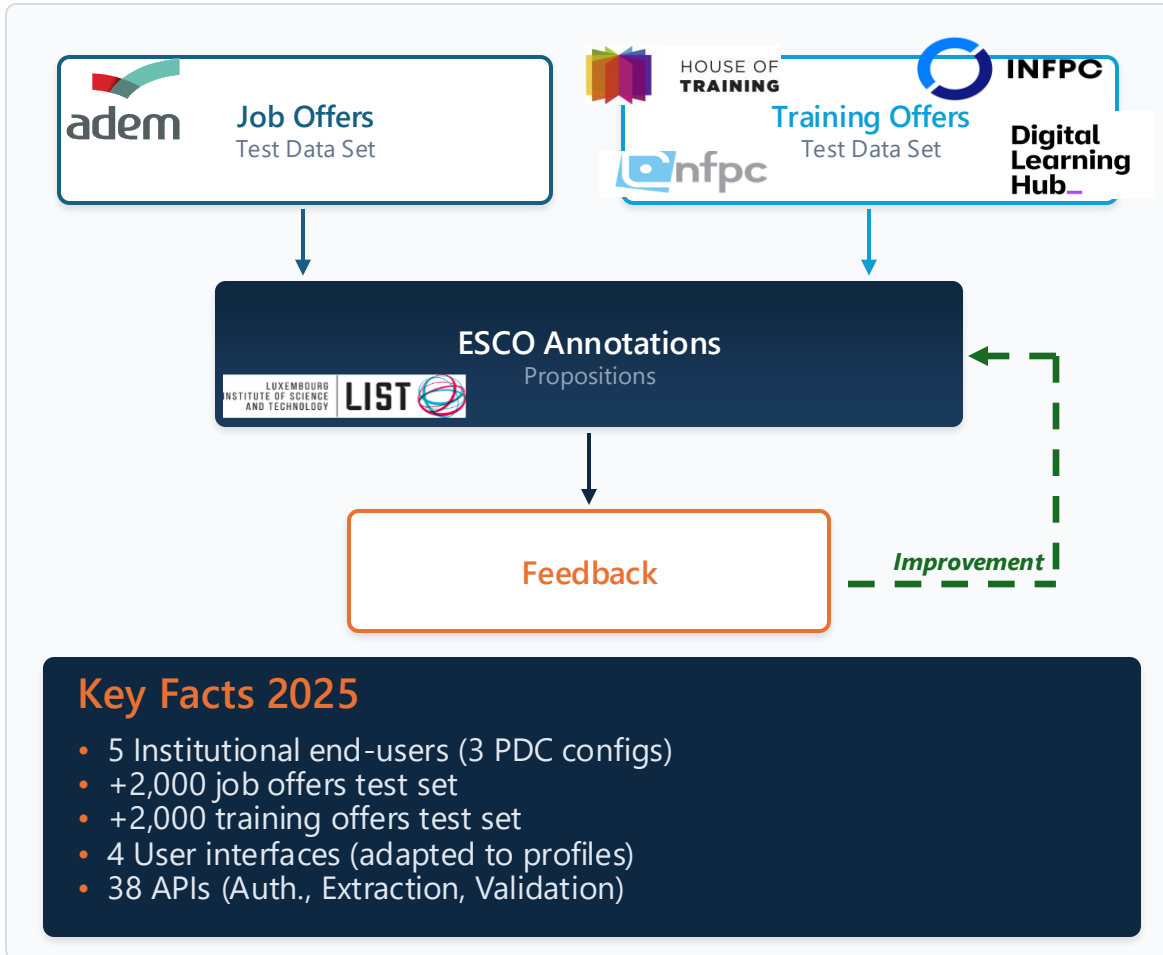


AI-powered platform that automatically **extracts, identifies, and standardizes professional skills**

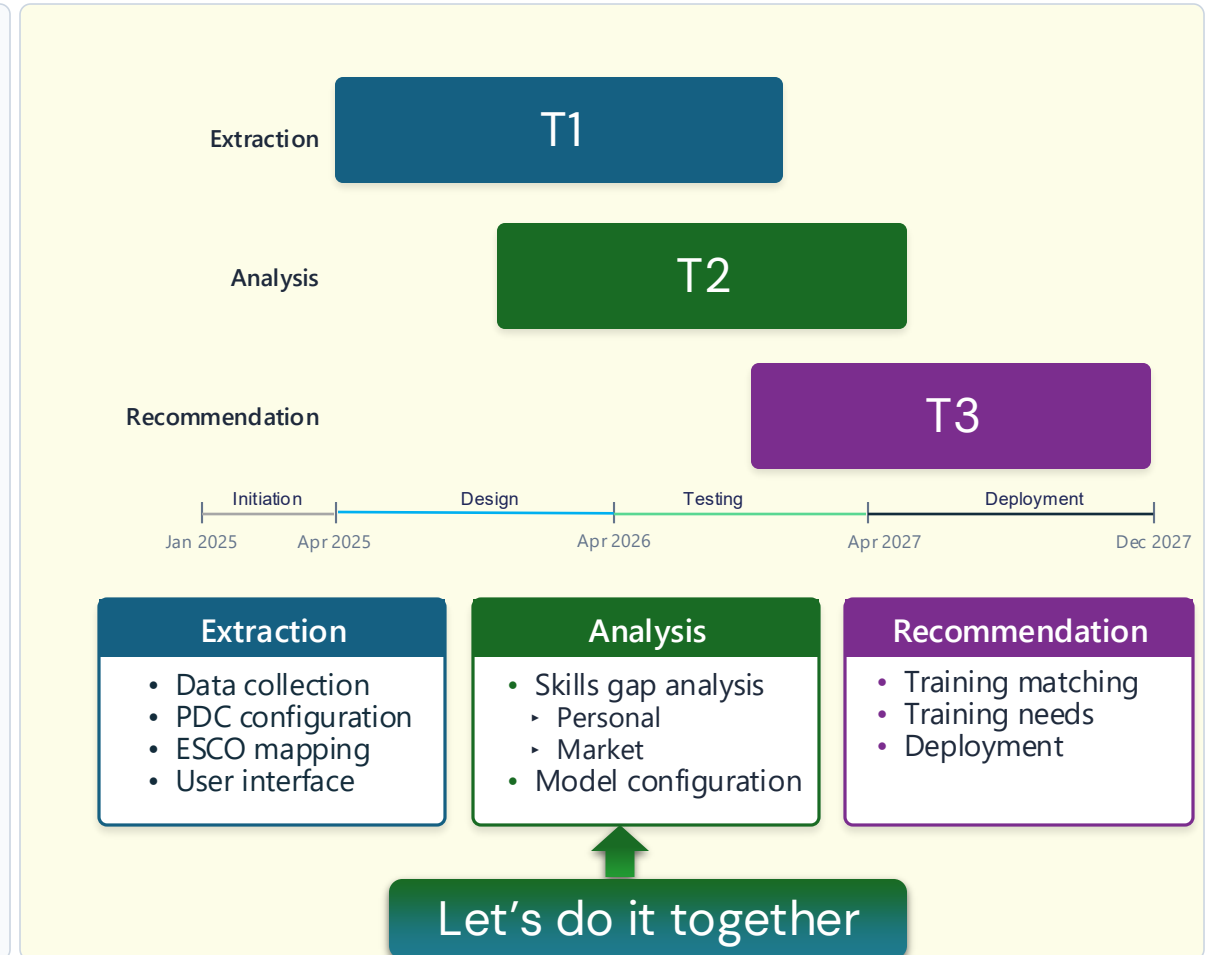
- ▶ **Intelligent Extraction** — LLMs + semantic + graph-based ESCO mapping
- ▶ **Multilingual & Scalable** — Multiple languages, Individual use, Batch processing (large-volume)
- ▶ **Structured Skill Profiles** — Unstructured text → standardized structure → comparable ESCO profiles
- ▶ **Built for Institutions** — Training orgs, employment counselors, HR teams, Policy/strategy makers

Storyboard T1: Proprietary Data → Annotations → Harmonized Data

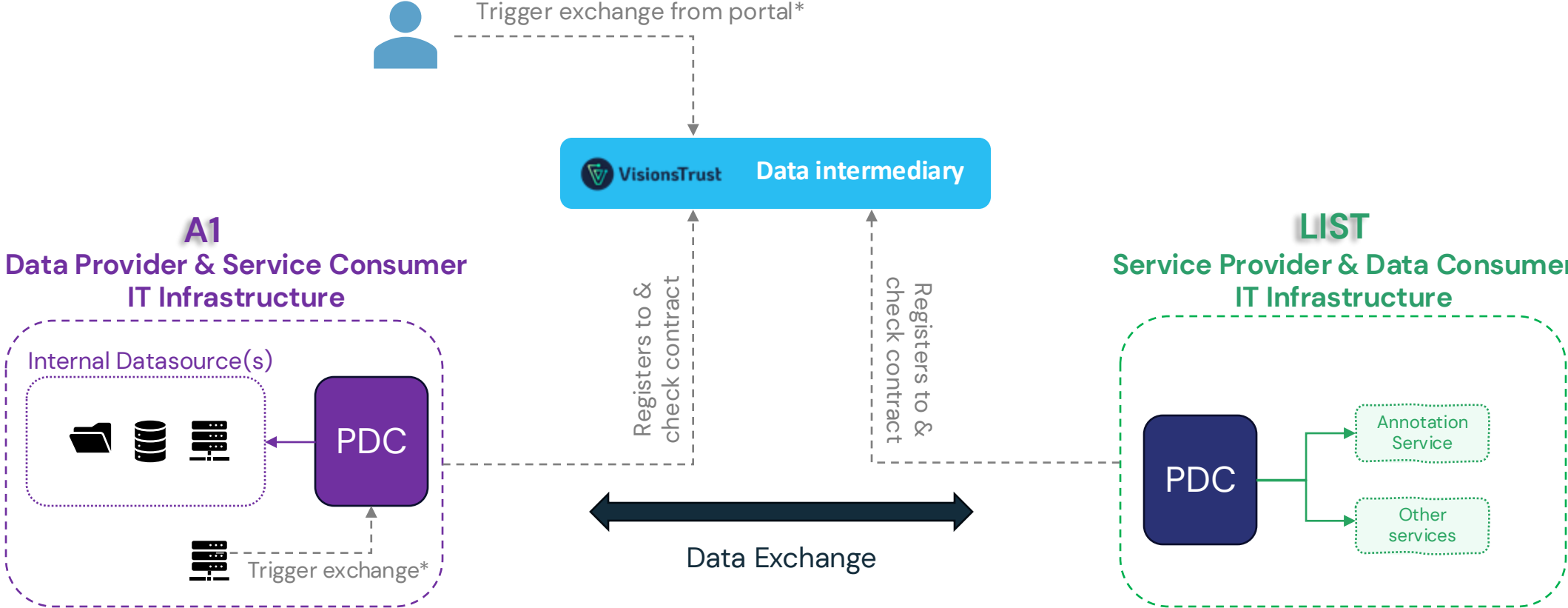
Data Flow Process (2025)



Timeline (3 years view): Service Design → Test → Deployment

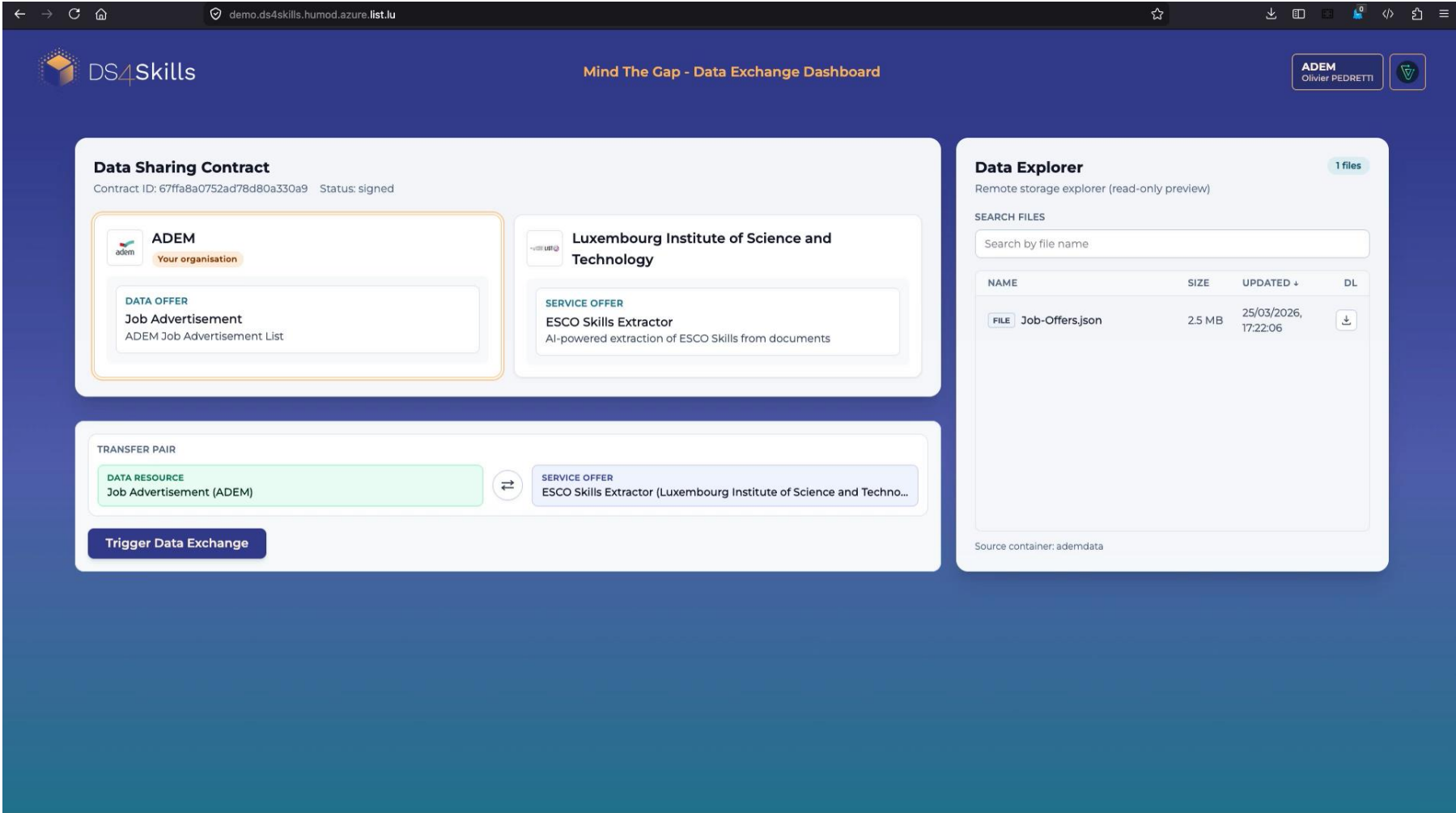


Data Exchange - Demo Infrastructure Overview



* Trigger can be performed in the web portal or by a service

Data Exchange – Live Demo

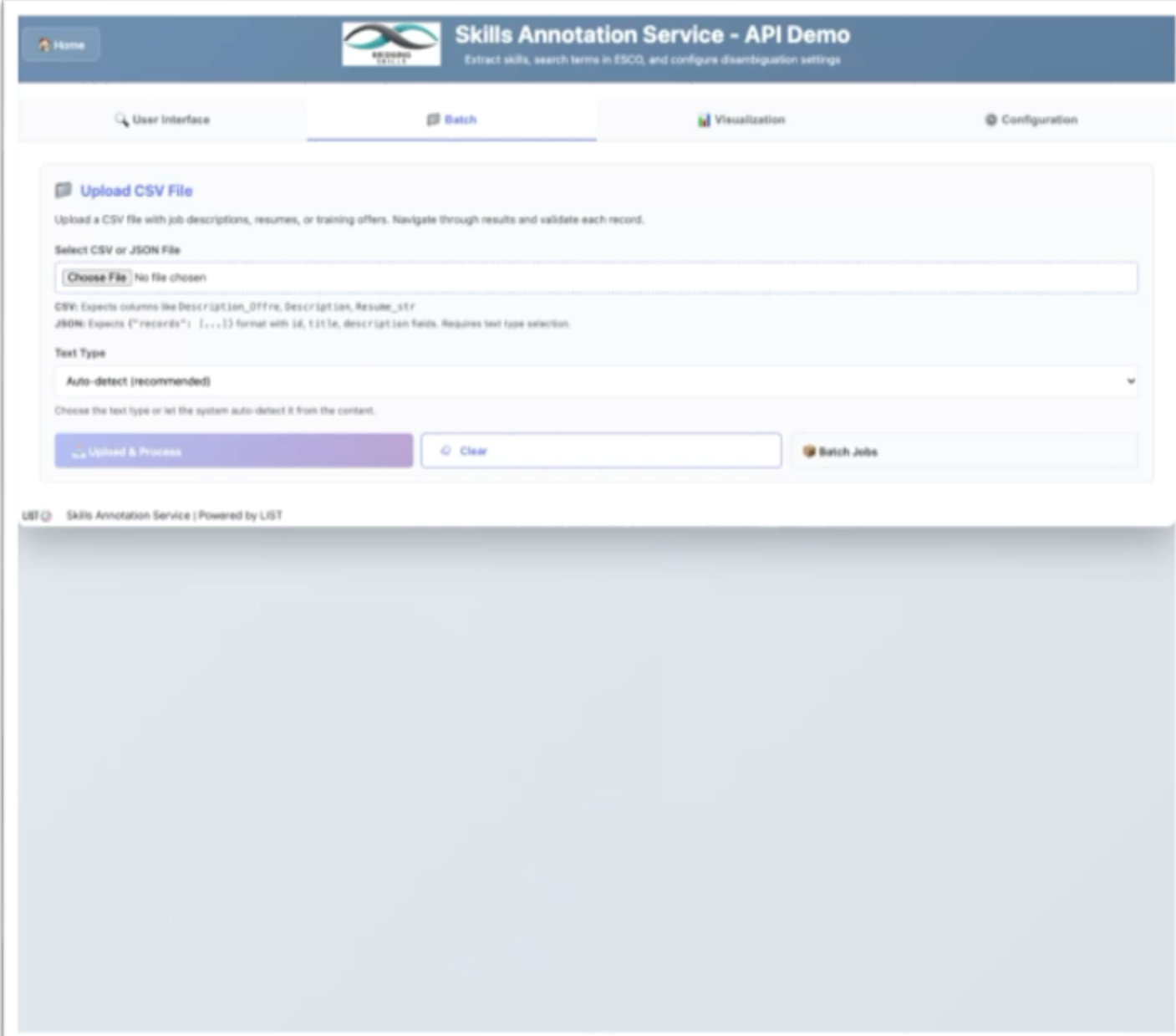


The screenshot shows the 'Mind The Gap - Data Exchange Dashboard' in a browser window. The dashboard is divided into three main sections:

- Data Sharing Contract:** Shows a contract with ID '67ffa8a0752ad78d80a330a9' and status 'signed'. It features two offer cards: 'ADEM Job Advertisement List' (Data Offer) and 'ESCO Skills Extractor' (Service Offer).
- TRANSFER PAIR:** A visual representation of the data exchange between 'Job Advertisement (ADEM)' and 'ESCO Skills Extractor (Luxembourg Institute of Science and Techno...)' with a 'Trigger Data Exchange' button.
- Data Explorer:** A 'Remote storage explorer (read-only preview)' showing a search bar and a table with one file: 'Job-Offers.json' (2.5 MB, updated 25/03/2026, 17:22:06).

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User Interface for Skill Extraction - Live Demo

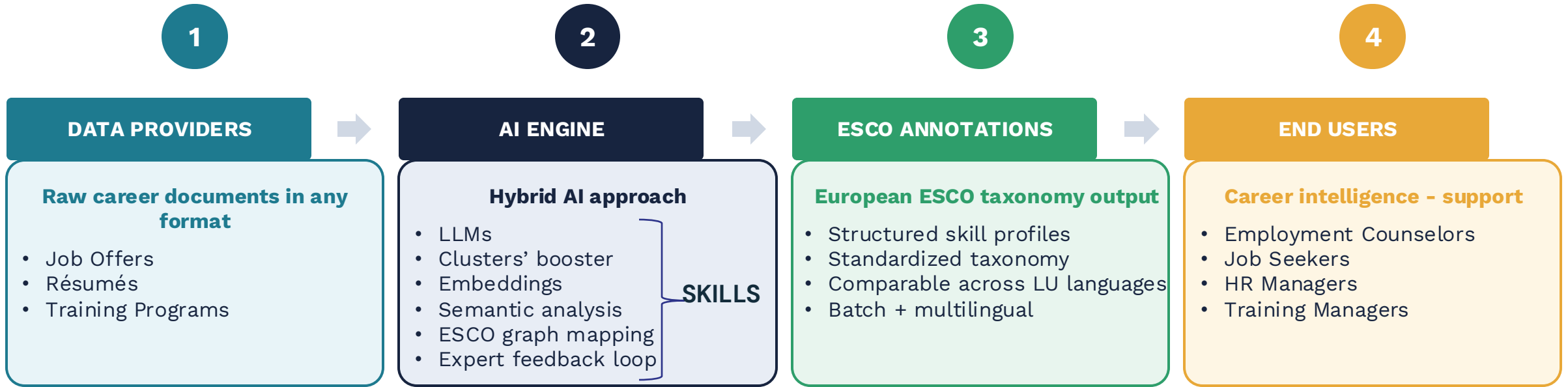


The screenshot shows the 'Skills Annotation Service - API Demo' web interface. At the top, there is a navigation bar with a 'Home' link and a logo. Below the navigation bar, there are four tabs: 'User Interface', 'Batch', 'Visualization', and 'Configuration'. The 'Batch' tab is currently selected. The main content area is titled 'Upload CSV File' and contains the following elements:

- A sub-header: 'Upload a CSV file with job descriptions, resumes, or training offers. Navigate through results and validate each record.'
- A section titled 'Select CSV or JSON File' with a file selection button labeled 'Choose File' and the text 'No file chosen'.
- Instructions for CSV and JSON formats:
 - CSV: Expects columns like description_offre, description, resume_str
 - JSON: Expects ("records": [...]) format with id, title, description fields. Requires text type selection.
- A 'Text Type' dropdown menu currently set to 'Auto-detect (recommended)'. Below it, a note says 'Choose the text type or let the system auto-detect it from the content.'
- Three buttons at the bottom: 'Upload & Process' (purple), 'Clear' (white with blue border), and 'Batch Jobs' (white with blue border).

At the bottom left of the interface, there is a status bar that reads 'LIST Skills Annotation Service | Powered by LIST'. The main content area below the form is currently empty.

Use Case: Extracting & Harmonizing Skills with ESCO



ESCO V1.2.1 → Knowledge Graph:

SKILL	OCCUPATION	ISCO GROUP	NACE CODE
13,890 nodes	3,008 nodes	436 nodes	1,048 nodes

Two-Phase Pipeline Architecture

PHASE 1: LLM SKILL EXTRACTION

- Text Type Detection: job offer, résumé, or training
- Prompt Construction: Chain-of-Thought prompts
Best balance of recall, interpretability, and explainability
- LLM Extraction: Structured JSON output per skill
- Deduplication: Merge duplicate skill mentions



PHASE 2: GRAPH DISAMBIGUATION

- Projection: Embedding Similarity
Semantic match against ESCO
- Filter: Occupation clusters (Booster)
Cross-reference with linked occupations
- Deepness: Knowledge Graph Analysis
Choose the abstraction level of terms
- Selection: Weighted Combined Scoring
Semantic + Jaccard + Graph distance + domain signals
- Interaction: Human Validation (4 UI + 38 APIs)
Multi-profile expert review of skills, occupations, NACE

Evaluation Results

668

Docs Processed

17,555

Skills Annotated

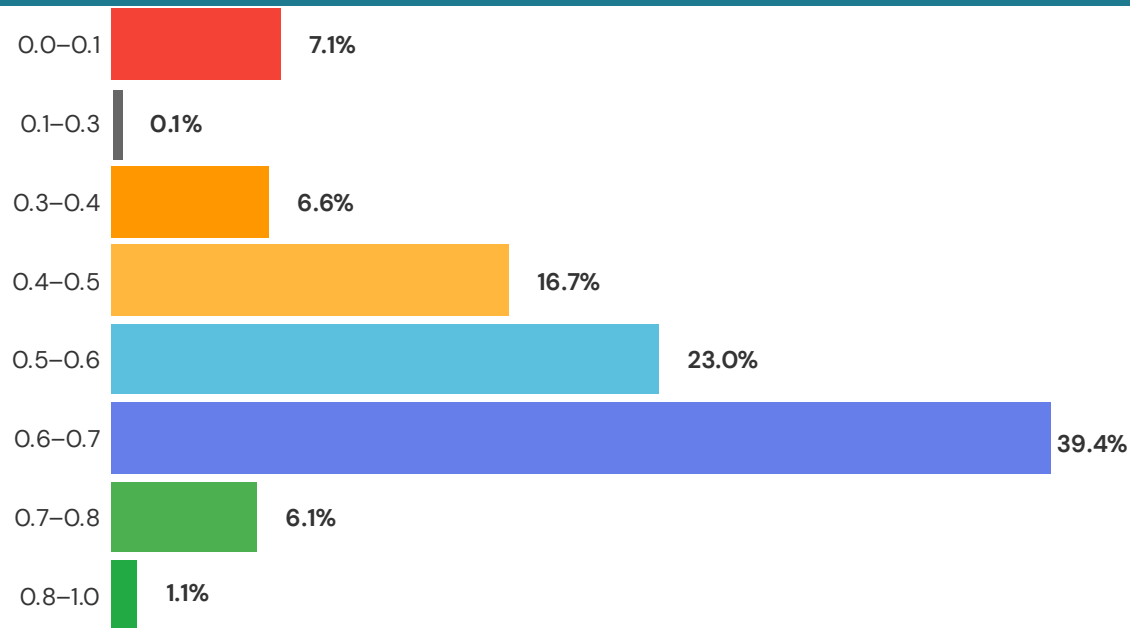
96.2%

Human Acceptance

93.3%

Disambiguation Rate

Final Score Distribution



CLASSIFICATION BREAKDOWN

Job Descriptions: Skills/doc: 27.6 ± 13.0 , soft skills: 20.2%
95.7% accepted

Résumés: Skills /doc : 30.1 ± 13.2 , soft skills: 10.4%
98.1% accepted

Training Offers: Skills /doc : 21.1 ± 12.1 , soft skills: 9.0%
95.6% accepted



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Thank you!

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Stay up-to-date on our
2026 activities!

The logo for Data Europa Academy is located in the bottom left corner. It consists of the words "data.", "europa", and "academy" stacked vertically in a white, lowercase, sans-serif font. The word "data." has a small yellow dot above the 'a'. The word "europa" has a small yellow dot above the 'o'. The word "academy" has a small yellow dot above the 'a'. The logo is set against a dark blue circular background, which is part of a larger purple circular graphic element in the bottom left corner of the slide.

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Register for our upcoming webinar!

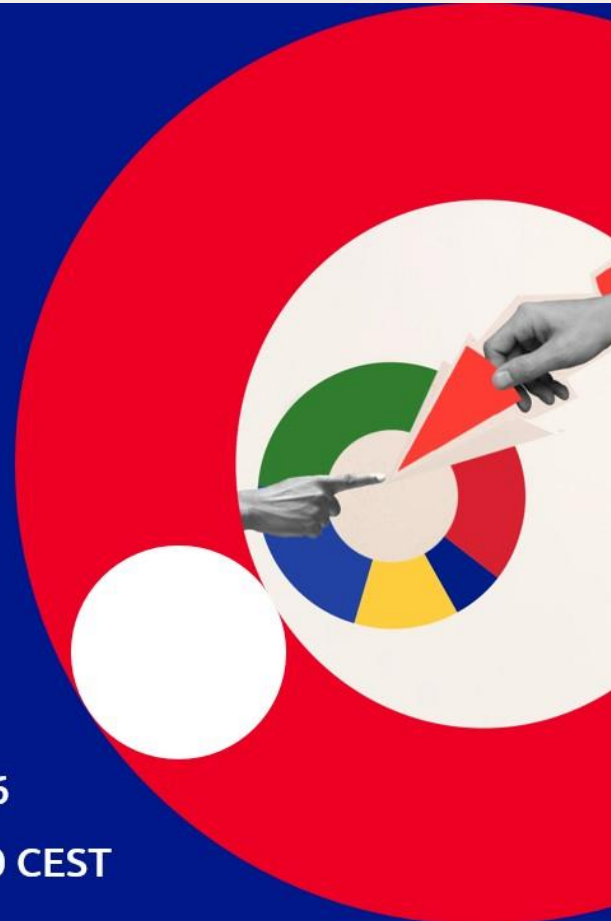
WEBINAR

Open data for crisis
response and
resilience: cases
from European &
national institutions

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24 April 2026

10.00 – 11.00 CEST



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Continue the discussion after the webinar!

European data spaces in practice: insights from the Data Space for Skills

Submitted by [Hannah KROKER](#) on Fri, 27/03/2026 - 14:07

Topic: [Academy webinars](#)

How did you like our latest webinar on the Data Space for Skills (DS4Skills)? Leave a comment below if you have any other questions or want to share your own thoughts on the topic!

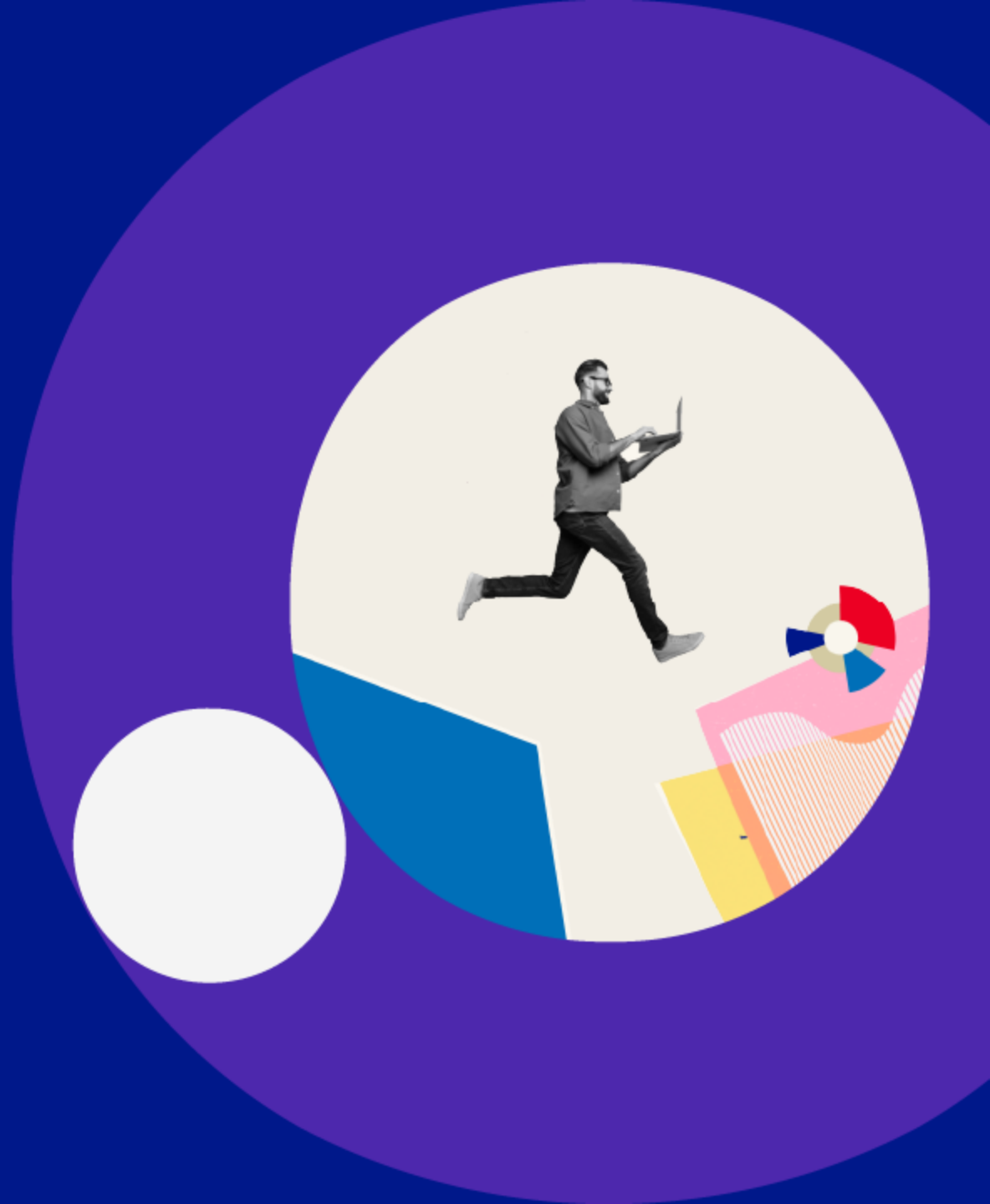
The Data Space for Skills provides us with a **better understanding of the labour market**, including where we are currently facing skill gaps. We heard from our **expert guests Nathan da Silva Carvalho and Marcos da Silveira** about both how this data space has developed over the past few years and how it can benefit entities like the Luxembourg Institute for Science and Technology to address skills shortages.

Do you have experience with this data space or similar initiatives with the aim of improving the European labour market? Where do you think the biggest difficulties could arise and how should they be addressed?

Share your ideas and questions below!



Your opinion is important to us!



Thank you!

