



International Forum
on Skills Intelligence
in Post-Secondary & Higher Education



Universitat
Oberta
de Catalunya

#IFSI2025

Join me at

Advancing Skills Intelligence in Post-Secondary & Higher Education:

Anticipation, Alignment, and the Future of Work

 2-3 July 2025

 Online Virtual Event



Liga Baltina

Fondazione Giacomo Brodolini

**ADVANCING SKILLS INTELLIGENCE:
METHODOLOGICAL INSIGHTS FROM
THE ASSETS+ AND SKILLPULSE
PROJECTS**

*Parallel Sessions – Research & Policy Innovations /
Theme II. A. Emerging Research, Methodologies &
Technologies for Skills Intelligence*

*Track B: New Research and Methodologies in Skills
Intelligence (Anticipation, Alignment, Action)*

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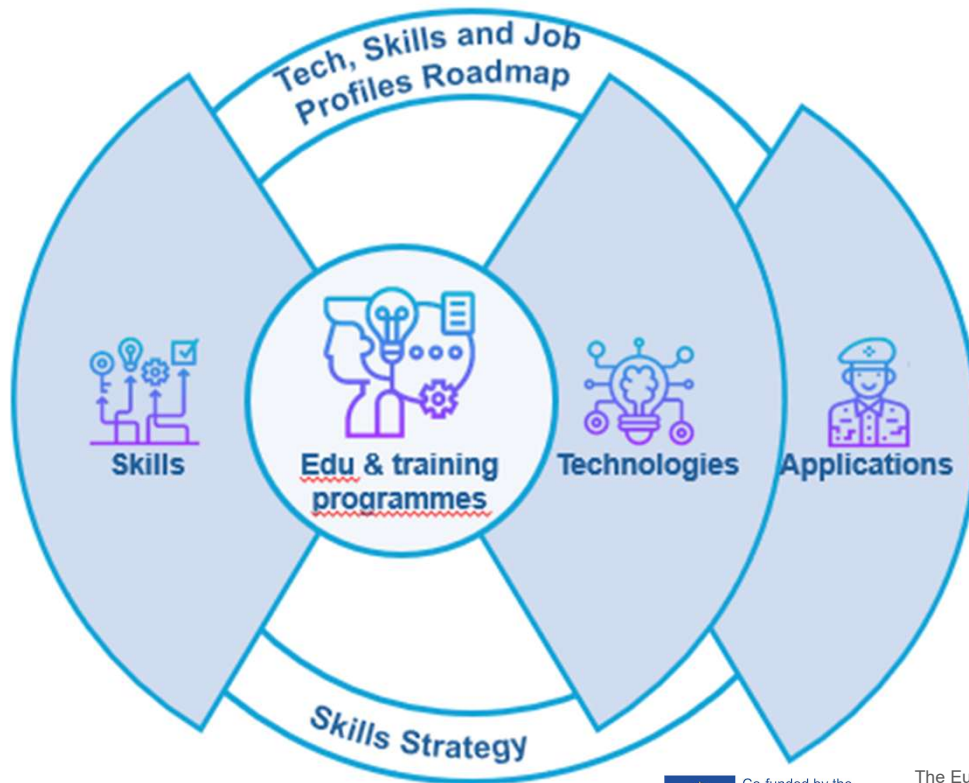


Focus on

- Why skills intelligence increasingly matters?
- Innovative methodologies
- Real world impact -> from insight into action



Alliance for Strategic Skills addressing Emerging Technologies in Defence



- **Monitor key enabling techs and skills**
- **Design and develop education activities**
- **Frame an action plan for EU Defence capabilities**



www.assets-plus.eu



Co-funded by the
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Job Profiles, Skills and Technologies Roadmapping

Capability Driven Approach leveraging on Natural Language Processing & Human-in-the-Loop

Data Collection

Information Extraction

Knowledge and Relations Analysis

Foresight with Experts



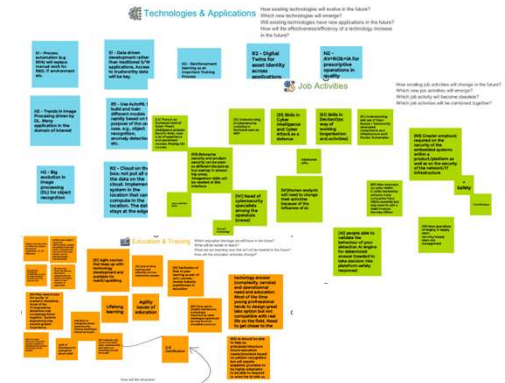
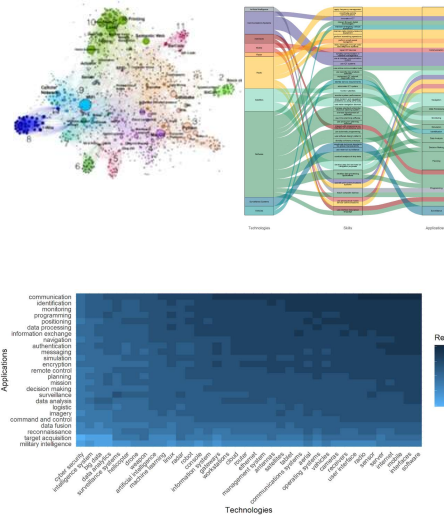
~300k technical and scientific documents on technologies and skills related to the Defence sector and the emerging technological domains in analysis

tourists, the [Italy] ORIGINAL, most visited in the [European Union] [ORG], and the most popular tourist destination in Italy. [13] Its historic centre is listed by UNESCO [ORG] as a [World Heritage] [ORG] Site. [14] Host city for the [1960] [GATE] Summer Olympics [EVENT]. [Rome] [CPE] is also the seat of several specialised agencies of the [United Nations] [ORG], such as the [Food and Agriculture Organization] [ORG], [FAO] [ORG], the [World Food Programme] [ORG], [WFP] [ORG], and the [International Fund for Agricultural Development] [ORG], [IFAD] [ORG]. The city also hosts the headquarters of many international business companies such as [Eni] [ORG], [Enel] [ORG], [TIM] [ORG], [Iccrea] [ORG], [SIA] [ORG], and national and international banks such as [Intesa] [ORG] and [BNA] [ORG]. [Rome] [CPE] > [EUR] [CPE] business district is the home of many companies involved in the oil industry, the pharmaceutical industry, and financial services. The presence of renowned international brands in the city have made [Rome] [CPE] an important centre of fashion.

Technimetro®



Technologies, Skills, Applications, Jobs



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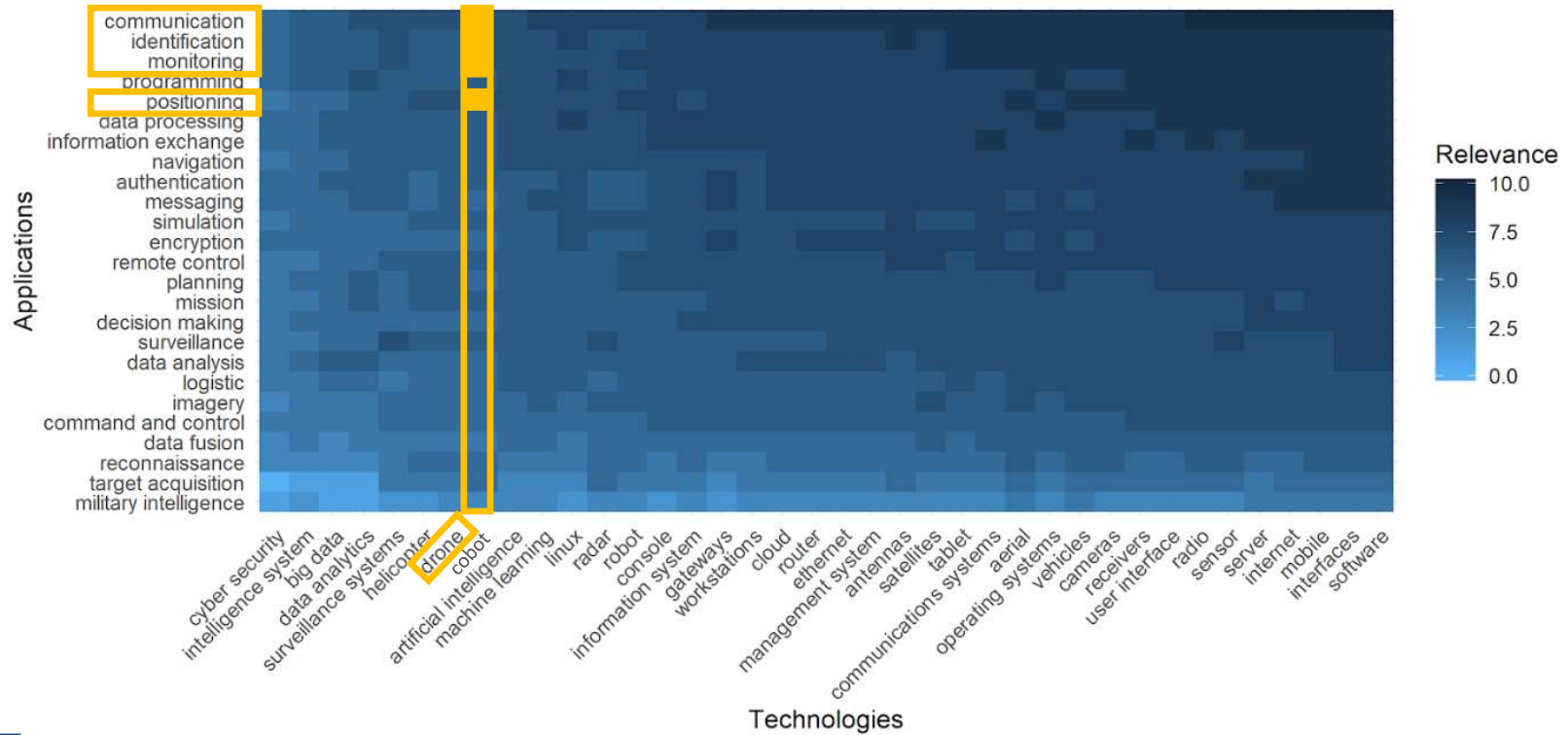
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Capability Driven Approach leveraging on Natural Language Processing & Human-in-the-Loop



Technologies Mapping

Number of documents in which each pair **technology-application** is mentioned



Job profiles, Technologies & Skills Roadmap

CAPABILITY AREA: Autonomous Systems

- Aircraft Mechanics
- Apply Reverse Engineering
- Assemble Robots
- Control Systems
- Create a Product's Virtual Model
- Design Smart Grids
- Embedded Systems
- Guidance, Navigation and Control
- Human-Robot Collaboration
- Operate Drones in Civil Engineering
- Perform Aircraft Maintenance
- Perform Smart Grid Feasibility Study
- Robot Programming
- Set Up Automotive Robot
- Systems Engineering including safety and security
- Undertake Procedures to Meet Helicopter Flight Requirements
- Undertake Procedures to Meet UAV Flight Requirements
- Unmanned Air Systems
- Upgrade Firmware
- Using Digital Tools for Processing Sound and Images

CAPABILITY AREA: High Performance Computing Systems

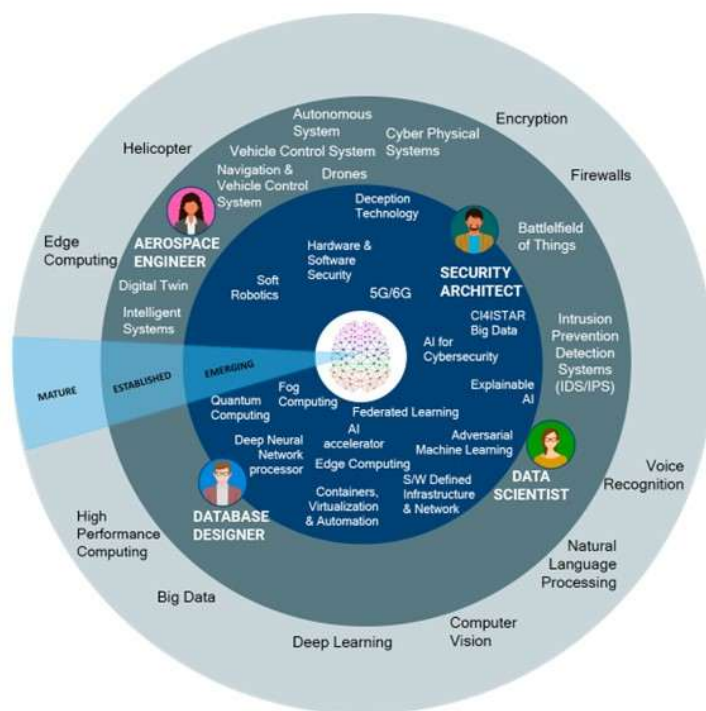
- Analyse Big Data
- Artificial Neural Networks
- Computer Programming
- E-Learning Software Infrastructure
- Identify Data Supporting Strategies
- Real-time Computing
- Scientific Research Methodology
- Analyse Large-Scale Data in Healthcare
- Smart City Features

CAPABILITY AREA: Cybersecurity Systems

- Carry Out Research on Ground Systems
- Cyber Attack Counter-Measures
- Embedded Systems
- ICT Security Legislation
- Implement a Firewall
- Integrate System Components
- Manage Alarm System
- Manage Cloud Data and Storage
- Manage Keys for Data Protection
- Military Code
- Prepare and Apply Security Test Plans
- Secure Network Communications
- Teach Computer Science
- Use Reservoir Surveillance

CAPABILITY AREA: Intelligent Information Systems

- Artificial Neural Networks
- Computer Vision
- Computing system architecture
- Control Panel Components
- Coordinate Technical Standards for Global Interoperability
- Design User Interface
- Develop Software Prototype
- Distributed Computing
- Electrical Machines
- Embedded real-time systems
- Guide Learners in Using Assistive Technologies
- Integration Of 5G/6G Services with Cloud Services
- Make Electrical Calculations
- Natural Language Processing
- Open Source Management
- Power Engineering





Skills – Predicting, Understanding, and Locating Shortages in Europe

- **Understanding** skills shortages
- A **novel methodology to identify potential skill shortages** in the EU labour market
- Combining a subjective (employee survey data) and an objective (online job advertisement data) approach.
- Distinguishing between skills shortages and labour shortages

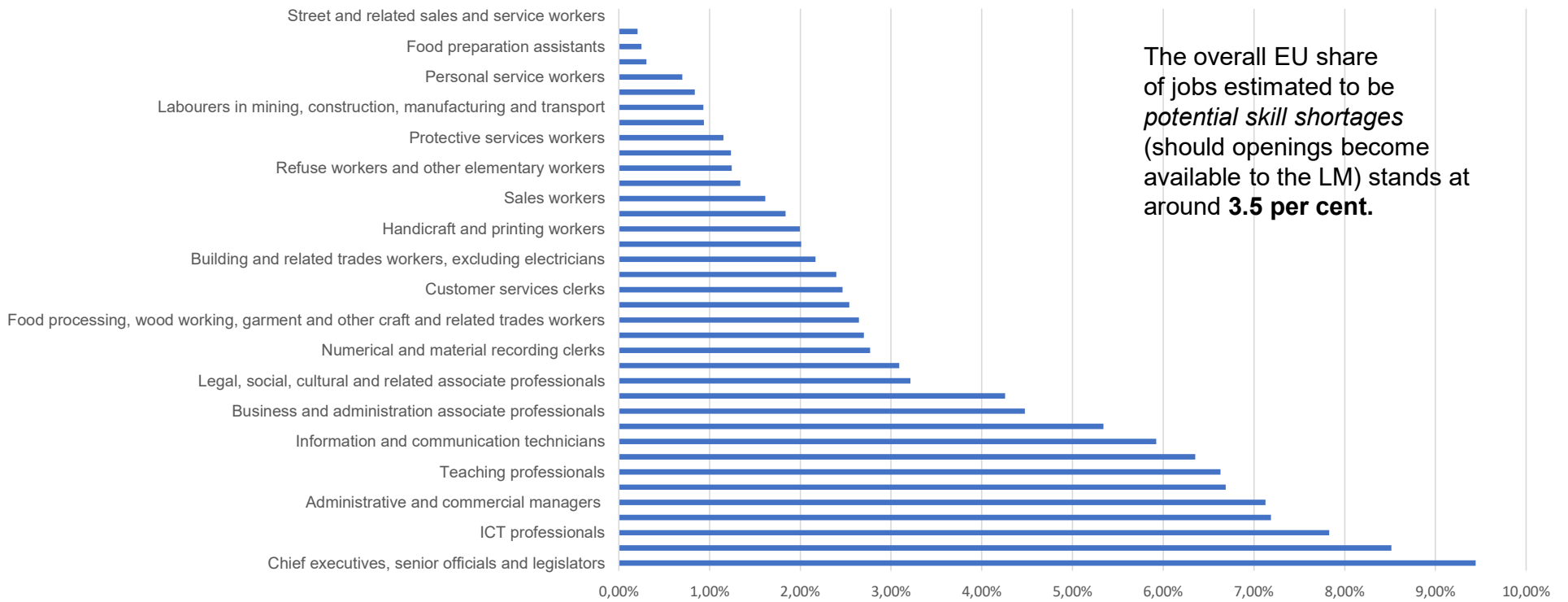
Our strategy – Skill Shortages



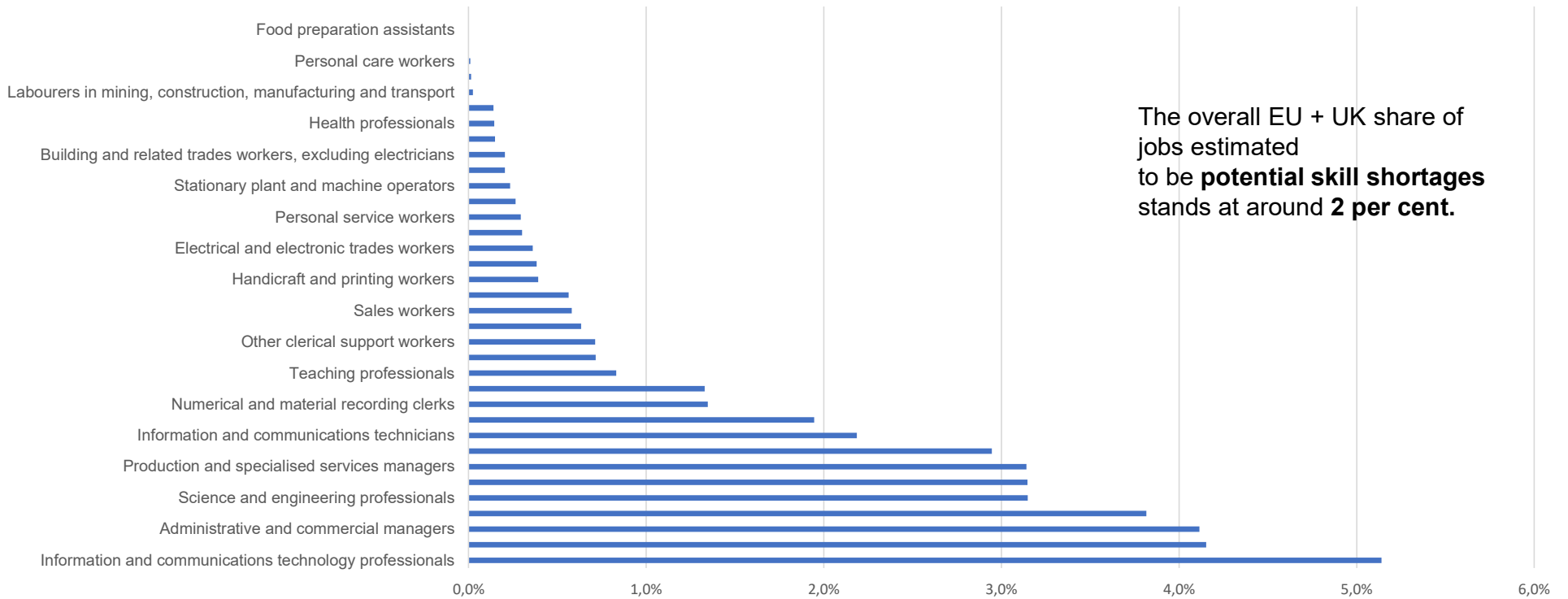
- Cedefop's **2021 European Skills and Jobs Survey** (subjective measure)
- **Job advertisement data** (objective measure)
- **Our innovative contribution:** for the first time we benchmark real-time labour market signals (OJA) against a survey-based distribution of skills (ESJS) -> offering a **novel, evidence-backed method to measure skill shortages** at national and EU levels

Note: the methodological research work was led by SkillsPulse partner Economic and Social Research centre in Dublin

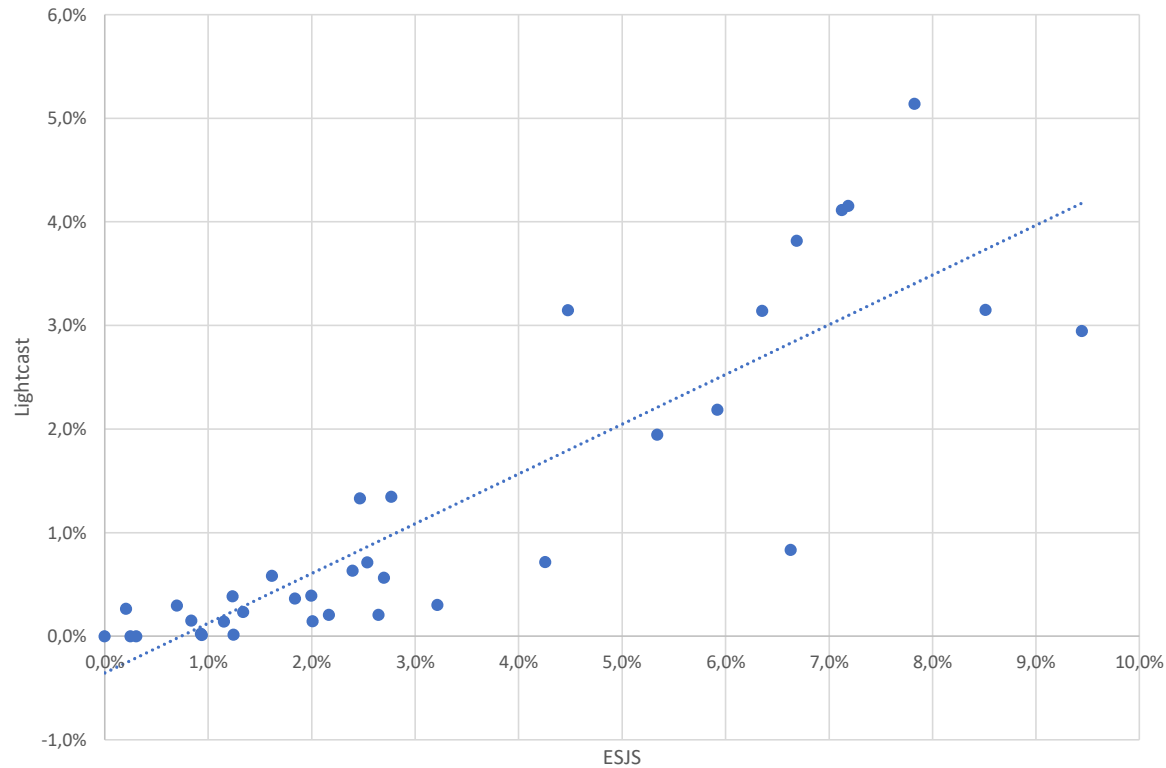
Incidence of potential skill shortages across ISCO 2-digit occupation – ESJS2 EU 27 + Iceland and Norway



Incidence of skill shortages across ISCO 2-digit occupation – Lightcast EU27 + UK



ESJS Potential Skill Shortages against Lightcast Potential Skill Shortages



- What we did
- What we found
- Why it matters

Thank you!

More information:

<https://www.skillspulse.eu/>

<https://assets-plus.eu/>

My contacts:

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