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Leveraging Generative AI with Semantic Searching to Build Customisable Skills Frameworks

The current skills landscape lacks a centralised platform for aligning skills across frameworks and national contexts, creating a significant knowledge gap between employer needs and qualifications offered by higher education institutions. This gap introduces difficulties for learners to identify relevant reskilling pathways and life-long learning opportunities in today's complex job market.

Knowledge Innovation Centre (KIC) set out to develop an integrated, open-access customisable skills intelligence ecosystem. Our AI-powered methodology helps HEI institutions and HR professionals to discover, organise, and manage skills data at scale, while enabling custom taxonomies and interoperability between diverse systems. We created a comprehensive skills toolbox (skilldata.info) featuring three key innovations:

1. The Skill Finder tool employing semantic AI search that understands context beyond simple keyword matching, enabling nuanced skill discovery across established frameworks like ESCO.

2. The Skill Framework Builder tool allowing organisations to create customised skill taxonomies with multilevel definitions tailored to specific sectoral needs.

3. Machine-readable exports using Rich Skill Descriptor (RSD) schema ensuring interoperability with HR and learning systems

Our implementation in the LCAMP (Learner Centric Advanced Manufacturing Platform) project demonstrated the system's effectiveness by successfully linking manufacturing courses from different countries to standardised skill frameworks, showcasing its cross-border applicability. During our demonstration, we will show how the system organises messy skill data into clear, usable frameworks.

In the future we are planning to expand the toolbox by developing exciting new features including the job profile builder and personalised learning pathways. By translating courses into skills-based language, users will be able to find suitable job profiles based on their skills and discover targeted upskilling opportunities for career growth.

Video

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