



TO SUPPORT PEOPLE EMBRACING THE STRUCTURAL CHANGES IN THE LABOUR MARKET, THE SCOPE OF JOBSEEKERS' RECOMMENDED JOBS CAN BE BROADENED BY IMPLEMENTING AI ALGORITHMS IN JOB RECOMMENDATION TOOLS.

# AI Job Matching

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## SWEDEN

Create a better understanding of human behaviour to balance supply and demand in the labour market.

Name of the PES

Arbetsförmedlingen (Swedish Public Employment Service)

Scope of measure  
(a pilot project or a national reform)

It began as a local pilot project and evolved into a national service.

When was the practice implemented? (including start and end date for pilot projects)

The pilot project began in 2023 and has been implemented as a regular service in 2024.

What was the driver for introducing the practice? Was it internal or external?

- ▶ The government tasked the PES with exploring ways to broaden job recommendations (e.g. suggesting jobs in other sectors or suggest other roles).
- ▶ The PES saw great potential in AI tools to break down a profession into sets of required skills (hard and soft) and wanted to explore how this could help provide broader job recommendations.
- ▶ As the labour market is rapidly evolving, with the creation of new and the disappearance of old occupations, AI technologies can help to keep up with these developments.

Which organisation was involved in its implementation?

Arbetsförmedlingen (Swedish Public Employment Service)

Which groups were targeted by the practice?

Initially only targeted registered jobseekers, but the AI Job Matching quickly developed to be open to all jobseekers through a broader official service.

What were the practice's main objectives?

The initial objective was to better understand ways of broadening job recommendations, notably how data collected through surveys could inform the job recommendation tool. The service later evolved to employ advanced AI algorithms to analyse and determine similarities between occupations. This capability could be leveraged to generate broader, more diverse job suggestions for users.

What activities were carried out?

- Developed an AI algorithm to suggest (new) jobs to users:
- ▶ Extracted competence occupational keywords (the same skill can be expressed in multiple ways) from job ads.
  - ▶ Clustered keywords into four main categories (hard skills, soft skills, work descriptions, education) to show the jobseeker the most attractive skills for each profession.
  - ▶ Users can access the service "[Find other occupations](#)" (Upptäck andra yrken) via the PES online job platform [Platsbanken](#). After exploring career options through the service, users are smoothly transitioned back to the online job platform to view the actual job listings, relevant to these suggested career options.

What resources and other relevant organisational aspects were involved?

The practice involved several kinds of experts within the PES, such as user interface designers and programme developers.

What were the source(s) of funding?

Mainly the PES budget

What were the outputs of the practice: people reached and products?

- ▶ 78% of surveyed users were positive about the service.
- ▶ 68% of surveyed users considered applying for a job in at least one of the suggested professions.

### What outcomes have been identified?

- ▶ During the 2023 test period, users who completed all steps of the service (culminating in receiving recommendations for new professions) provided highly positive feedback, describing the service as very useful. However, a significant number of users did not progress through all stages of the process, which indicated a notable dropout rate.
- ▶ The recommendation tool is valuable in offering detailed and current insights into relevant occupations. This approach complements traditional occupational taxonomies, providing a more dynamic and up-to-date understanding of the job market. While taxonomies offer a structured framework, this tool enhances the ability to capture the evolving nature of occupations in real-time.

### What are the lessons learnt and success factors?

- ▶ Discussions are ongoing as to whether the service should be tailored to individual preferences, but there are risks associated with using personal data.
- ▶ Many users (80% of participants) showed little interest in exploring occupations that were below their current educational level.
- ▶ The PES initially adopted a collaborative filtering approach, gathering data from clients' click behaviours and relying on the assumption that users will automatically find other interesting occupations or career paths independently. However, as there is no guarantee that users will independently discover occupations outside their current search patterns, the service instead broke down professions into skills sets that could be matched with clients' skills.
- ▶ Visibility is important: interest increased four-fold after adding the link to the service on the PES website welcome page.
- ▶ Job advertisements vary significantly in their level of detail and informativeness, with some occupations also having shorter job descriptions than others (e.g. nurse vs web designer).
- ▶ Many factors can impact peoples' choices, such as age and willingness to explore new jobs.



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