

# THE ASPECTT DATABASE



**Autonomy**

## The ASPECTT Database

Our jobs take up a significant portion of our adult lives and can form core parts of our identities. But what are the nuts and bolts of a job? What do archivists, train drivers or health and safety inspectors do in their working day? How do we keep skills updated to adapt to a fast-changing job market? What skills are required for a green economy and what is the least disruptive way to transition workers into more socially beneficial and sustainable industries? These are just some of the questions our database can help answer.

ASPECTT provides detailed, multidimensional portraits of every occupation in the UK. We do this by making use of comprehensive databases of occupational characteristics from the US and Europe, which, in addition to classifying and quantifying the skills, abilities and training required by each occupation, include breakdowns of work activities, working conditions and technological dependence of each job. We also combine this with longitudinal and real time economic data from the UK to answer wider questions about the nature and trajectory of the UK workforce and labour market.

# The anatomy of a job

For each of the occupational codes recognised by the Standard Occupational Classification (SOC), the ASPECTT database provides a breakdown of what is expected of the worker, and the details of their occupations.



# Case study: flight attendant

Here we unpack the various components of the flight attendant's occupation, as an example.

## Abilities:

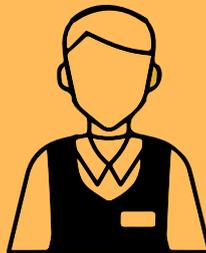
- Oral expression
- Speech clarity
- Oral comprehension
- Speech recognition
- Near vision

## Tasks:

- Verify emergency equipment
- Announce safety and emergency procedures
- Monitoring passenger behavior to identify threats to the safety crew
- Verify that passengers have complied with federal regulations prior to takeoffs and landings.
- Direct and assist passengers

## Skills:

- Speaking
- Active listening
- Monitoring
- Service orientation
- Social perceptiveness



## Technology:

- Calendar and scheduling software
- Food and drinks trolley
- Office suite software
- Presentation software
- Spreadsheet software

## Priorities:

- Concern for others
- Dependability
- Cooperation
- Support
- Working condition

## Conditions:

- Public speaking
- Responsible for others' health and safety
- Contact with others
- Deal with external customers
- Indoors, environmentally controlled

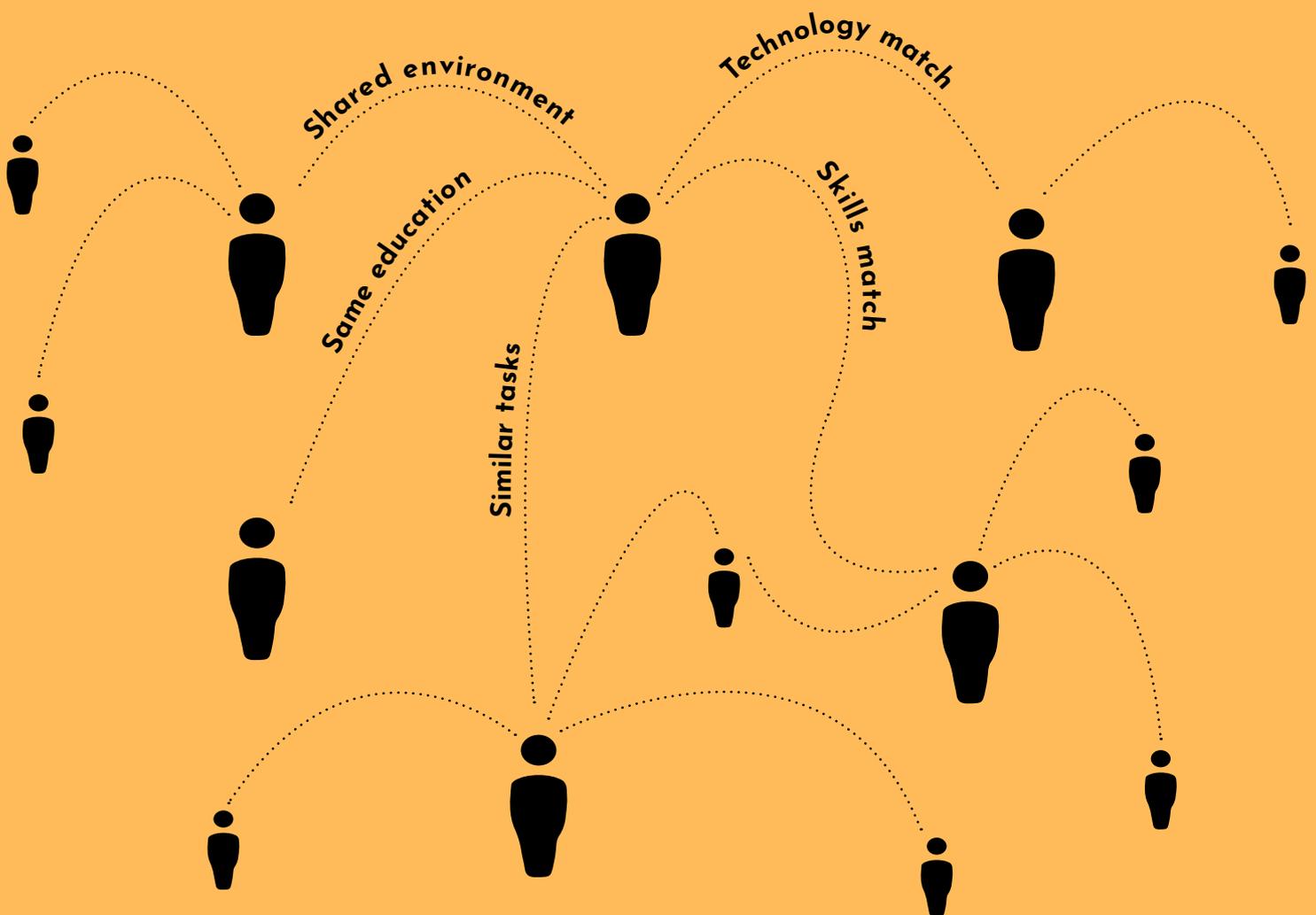
## Expertise:

- Performing for or Working directly with the Public
- Making Decisions and Solving Problems
- Getting information
- Identifying objects, actions, and vents

# Just Transitions

The ASPECTT database provides a highly multidimensional view of the worker-occupational attributes, along the axes previously mentioned. This opens up the opportunity to do nuanced and complex analysis, of which one potential use-case is to find possible routes for transitions between occupations. This project would utilise multiple statistical and machine learning tools on rich vectoral and textual data to identify opportunities for just transitions.

By comparing attributes such as the tasks and necessary expertise of occupations, as well as the work environment and experiences of the worker, we can find surprising links between jobs. This analysis would be of use in the effort towards a just transition between carbon-intensive industries to green alternatives.



# Other potential use-cases

Knowing the skills composition of the workforce

Combined with data from the Labour Force Survey, the ASPECTT database can be used to track the fluctuating nature of labour in the UK. Using historical data starting from 1992 we can:

- Track the skills composition of the workforce and identify their long-term trends.
- Find the “average” skills composition of a worker, or generate a set of worker profiles based on their prevalence in the workforce.
- By combining ASPECTT with data on the income distributions of occupations, we can estimate the average remuneration per skill.

It is worth noting that these analyses can be done on both the UK-wide level, as well as across individual industries.



# Other potential use-cases

Assessing the  
susceptibility of  
jobs to automation

The granular task and skill taxonomy of ASPECTT provides a useful starting point for a UK automation study.

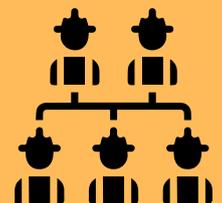
Building on studies like those of Osborne and Frey (2013), and based on analysis of current and future technological capacities, we can estimate the susceptibility of individual occupational tasks to being automated. This in turn allows us to find estimates of the overall susceptibility of each of the 369 occupational codes recognised by the ONS.



# Other potential use-cases

Tracking skills  
shortages and  
demands

ASPECTT provides the data for understanding the skills composition of the UK workforce historically and up to the present. The framework of ASPECTT would also build towards a project of estimating the current demands of certain occupational skills, and identify skills shortages. This would involve techniques from machine learning, web crawling and natural language processing to analyse UK job vacancies to draw out and isolate which skills are currently most in demand.



# Maximising functionality for stakeholders

- **Examining skill trends at spatial and sectoral level.** This could be of use to industrial partnerships in certain sectors, Local Enterprise Boards and other regional skills bodies to identify local skill change and demand.
- **Improving careers and job information.** Data generated from ASPECTT could be used to enhance available information on new jobs: this will be of use to organisations such as the Department for Work and Pensions.
- **Mapping qualifications to the demand for skills.** This could help education providers at different levels to ensure they are offering qualifications and courses that employers and employees will need.
- **Improving job design tools for employers and trade unions involved in organisational change.** This will help inform the shared definition of what decent working conditions are.



## **Autonomy**

The database, and the foundational form of the worker-occupational characteristics are derived from manipulations of O\*NET® and ISCO models. The continued labour of ASPECTT will be to refine and attune any elements of the data to a UK context.

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