

Big Data for Labour Market Intelligence

Capacity development programme 2024:
AI and the impact on Labour Market and Education

Session 4
Using social profiles for analytics

Using social profiles for analytics

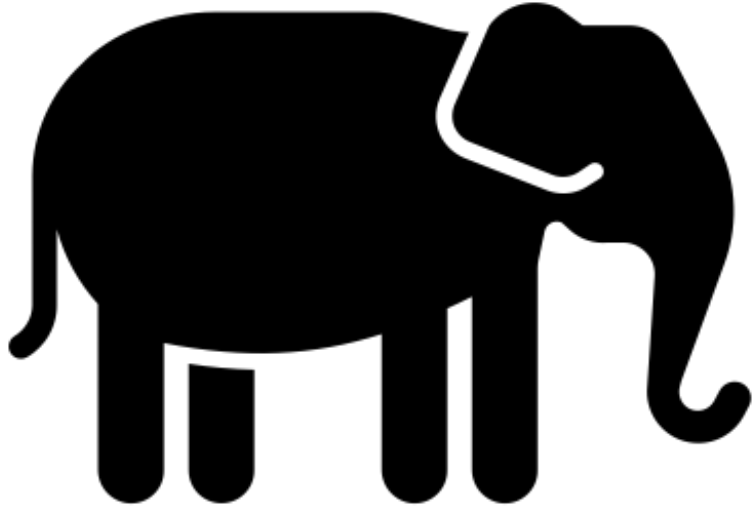
The image shows two screenshots of social media profiles. The top screenshot is a LinkedIn profile for Duncan Brown, VP Global Innovation at Lightcast, with 908 followers and 500+ connections. The bottom screenshot is a GitHub profile for Duncan Brown, showing his experience at Lightcast and his popular repositories, including 'SOCmapping' and 'EmsiAgnitio'.

- LinkedIn
- GitHub
- Facebook / Twitter
- Recruitment Processing
- Why social profiles?
- Why ... not social profiles? Info privacy...
- Insights from social profiles
- Limitations and biases
- Potential for analysis
- Synthesising with other sources

Why social profiles?

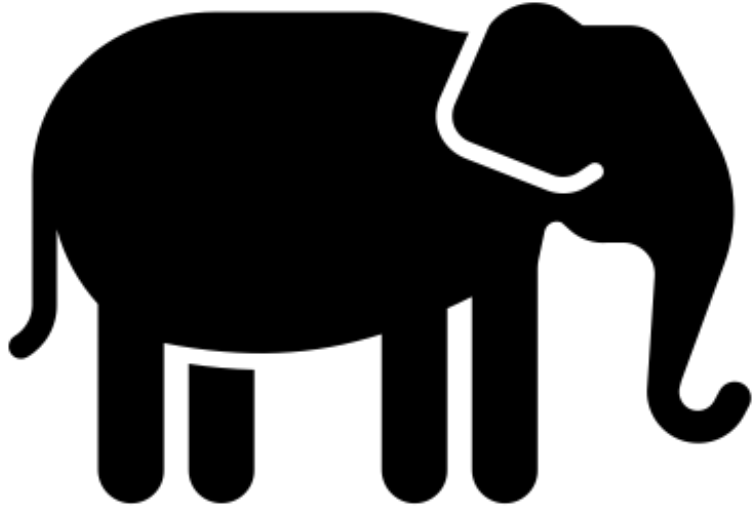
- Online postings provide great insights into the demand for talent, but not its supply – especially rich data on the skill content of demand
- Traditional labour market information, from surveys or administrative data, can offer quantitative robustness but lack richness
- Social profiles offer the promise of similar richness on skill content, but about the *supply* of talent, rather than the demand

Social profiles and information privacy



- Social profiles are *people*, and people have rights – GDPR in Europe, but similar elsewhere
- Social profiles need to be *sourced* properly – public sources, opt-in sources only
- Social profiles need to be *managed* properly – the right to be forgotten

Social profiles and information privacy



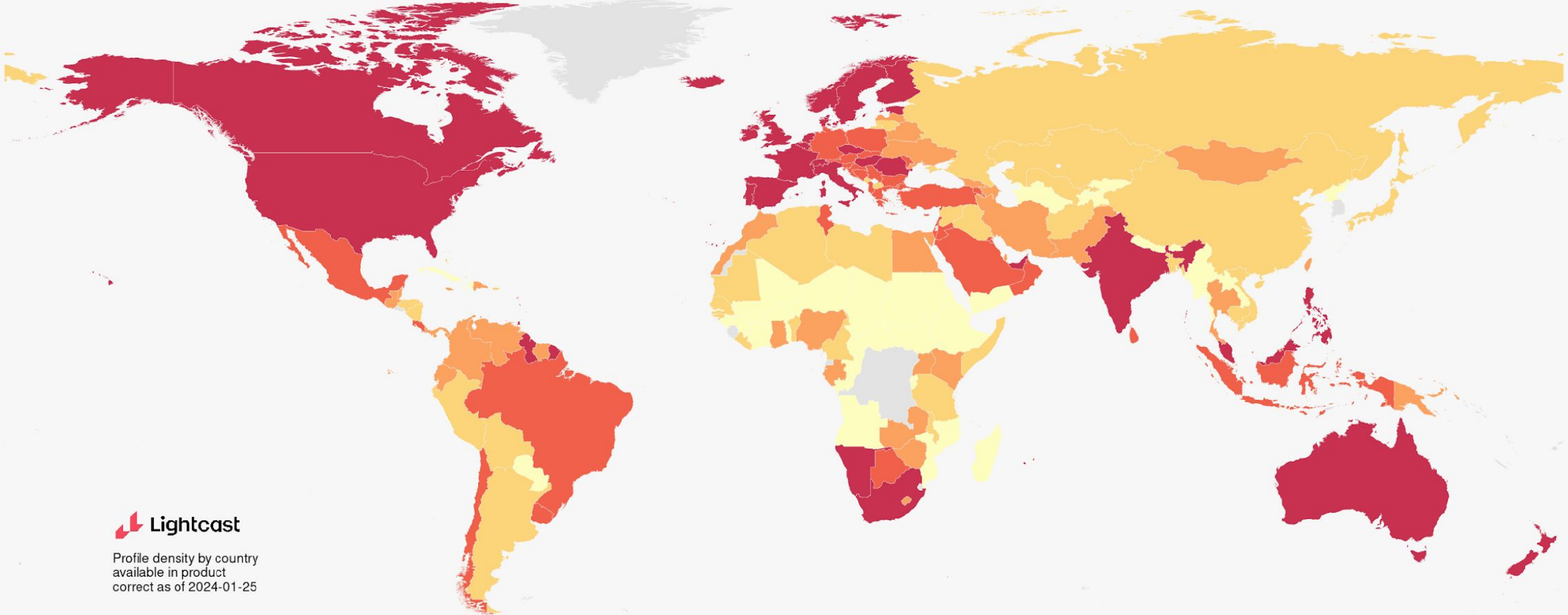
- Social profiles need to be *used* properly – only for analysis, not for individual sales and recruitment
- Social profiles need to be *analysed* properly – data shared only with tight controls to avoid disclosure of individual data

Gaining insights from social profiles

The image shows a LinkedIn profile for Duncan Brown. Red boxes and lines highlight specific information:

- Job titles and occupations:** Points to the current job title "VP Global Innovation" and the company "Lightcast".
- Company:** Points to the "Lightcast" company logo and name.
- Education institutions:** Points to the "University of Leicester" listed in the education section.
- Locations:** Points to the location "Greater Leicester Area" associated with the current job.
- Past job titles and occupations, past companies:** Points to the "Head Of Innovation, UK" role at "Lightcast" in the experience section.
- Descriptions allow for skills:** Points to the detailed description of the "Head Of Innovation, UK" role.

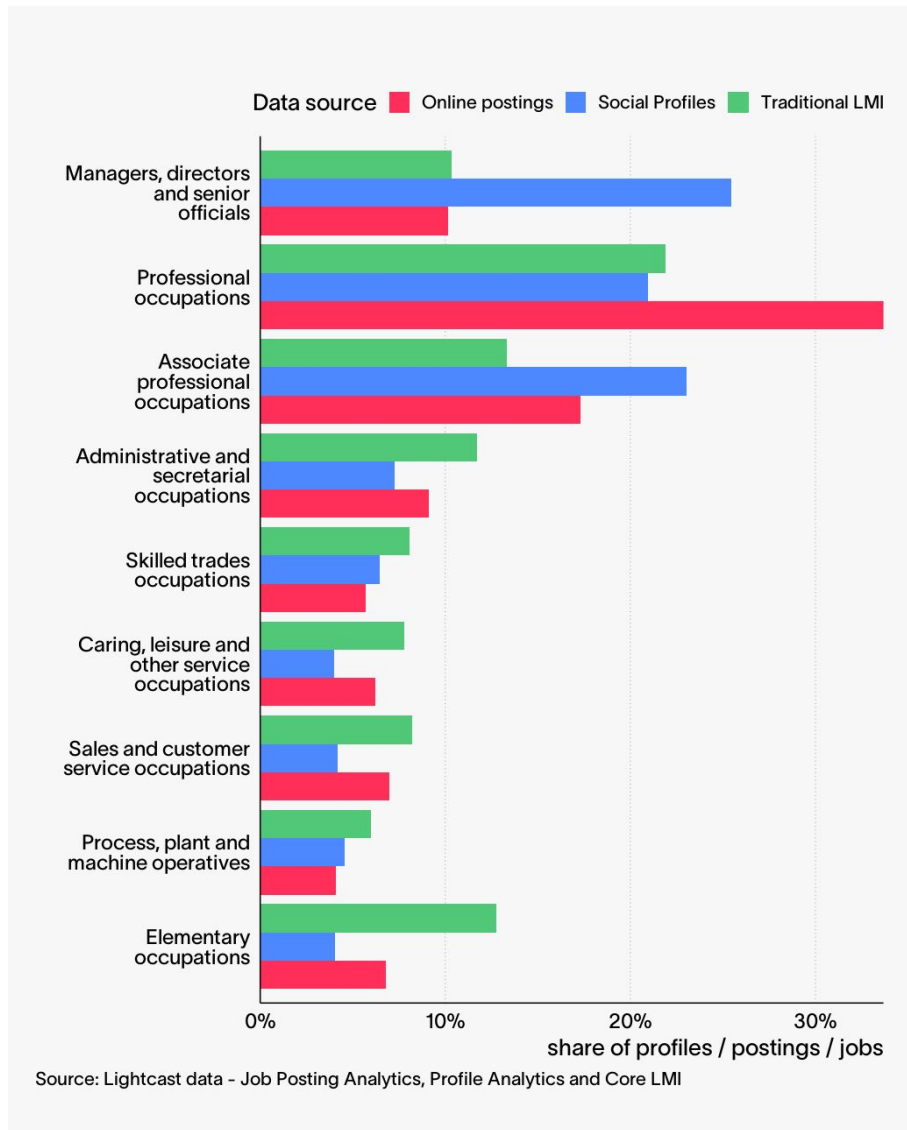
262m social profiles around the world



 Lightcast

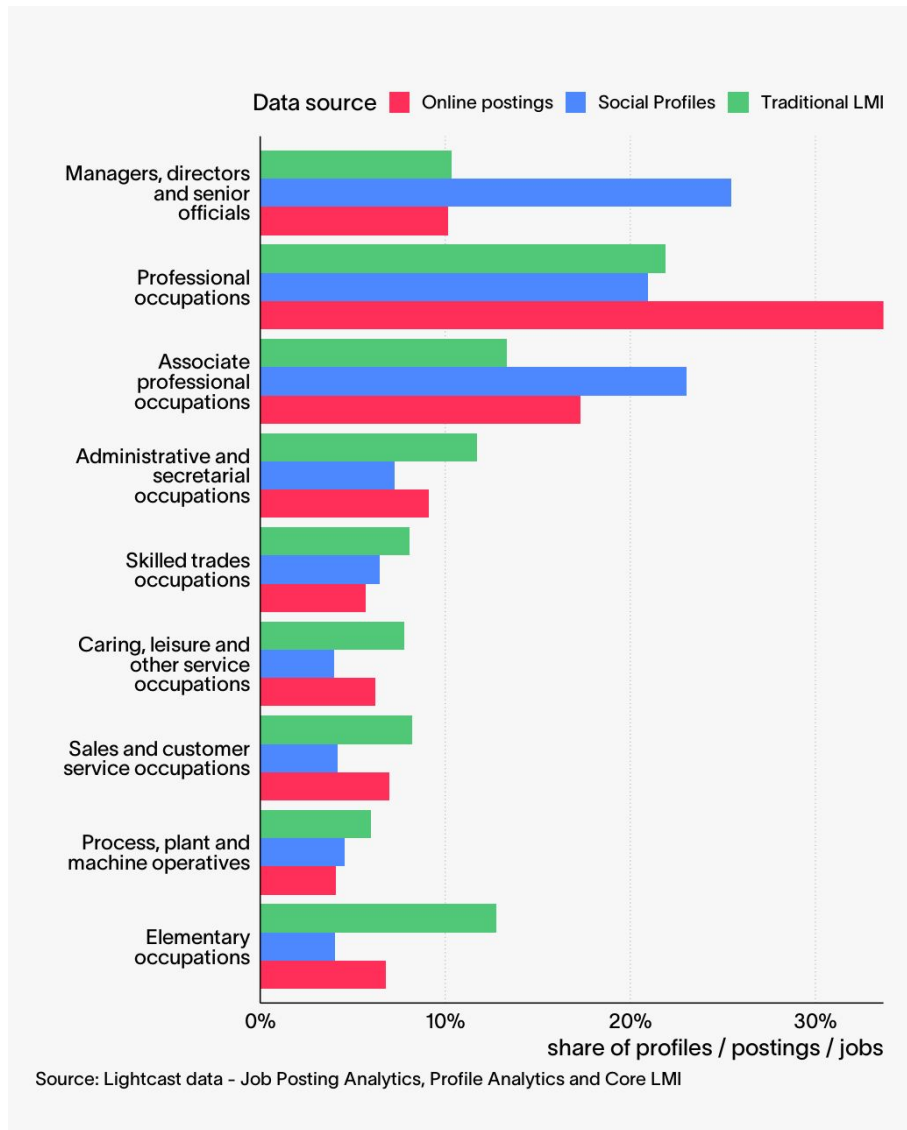
Profile density by country
available in product
correct as of 2024-01-25

Limitations and biases: occupation bias



- Social profiles are highly skewed to managerial and professional roles
- Even more than online postings: in UK data here
 - 70% of profiles are in managerial and professional categories
 - 61% online postings
 - 45% of jobs in traditional LMI

Limitations and biases: geographic bias



- Social profiles are highly skewed to major urban centres
- Even more than online postings: in UK data here
 - Top 20 NUTS3 regions account for 42% of profiles
 - 41% of online postings
 - 29% of traditional LMI jobs data

Limitations and biases: other issues

Careers aren't jobs

Every profile represents a person's career history, and people often have multiple jobs – and stories are rarely 'clean' with regard to the current role.

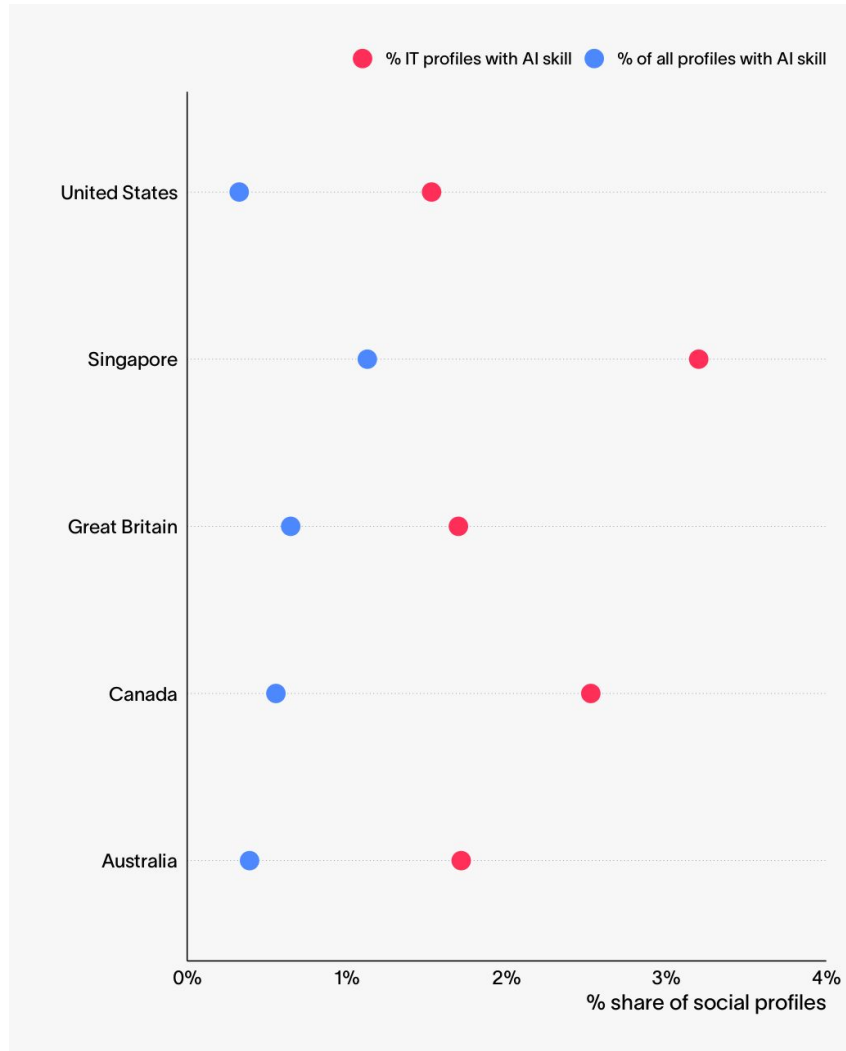
Timeliness

People update their profiles occasionally and often driven by e.g. jobsearch reasons. At any one time, profiles data is a set of old and new information.

Sharing and privacy

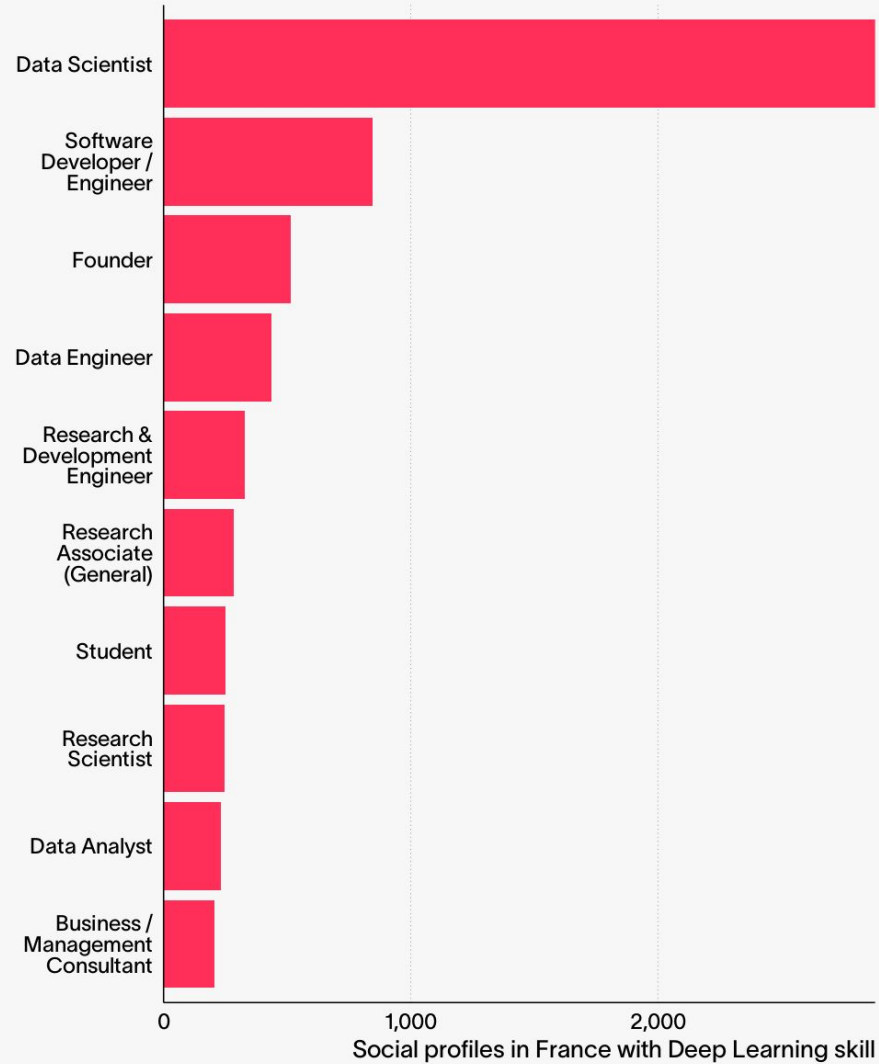
Cultural and legal differences mean variable levels of sharing across countries.

Applications of social profiles data: measuring AI presence

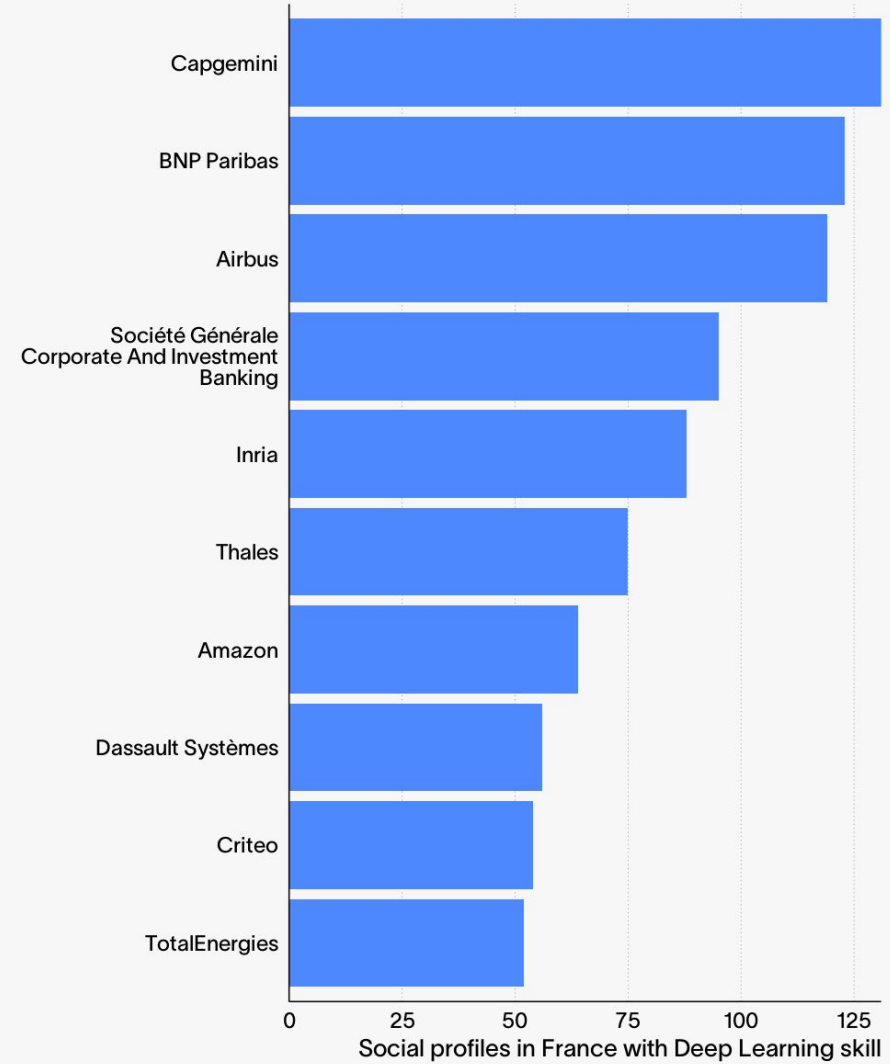


- Social profiles allow straightforward quantification of rich questions
- Here we ask the % of social profiles mentioning AI skills for all profiles and only those in a current IT occupation

Applications of social profiles data: identifying composition

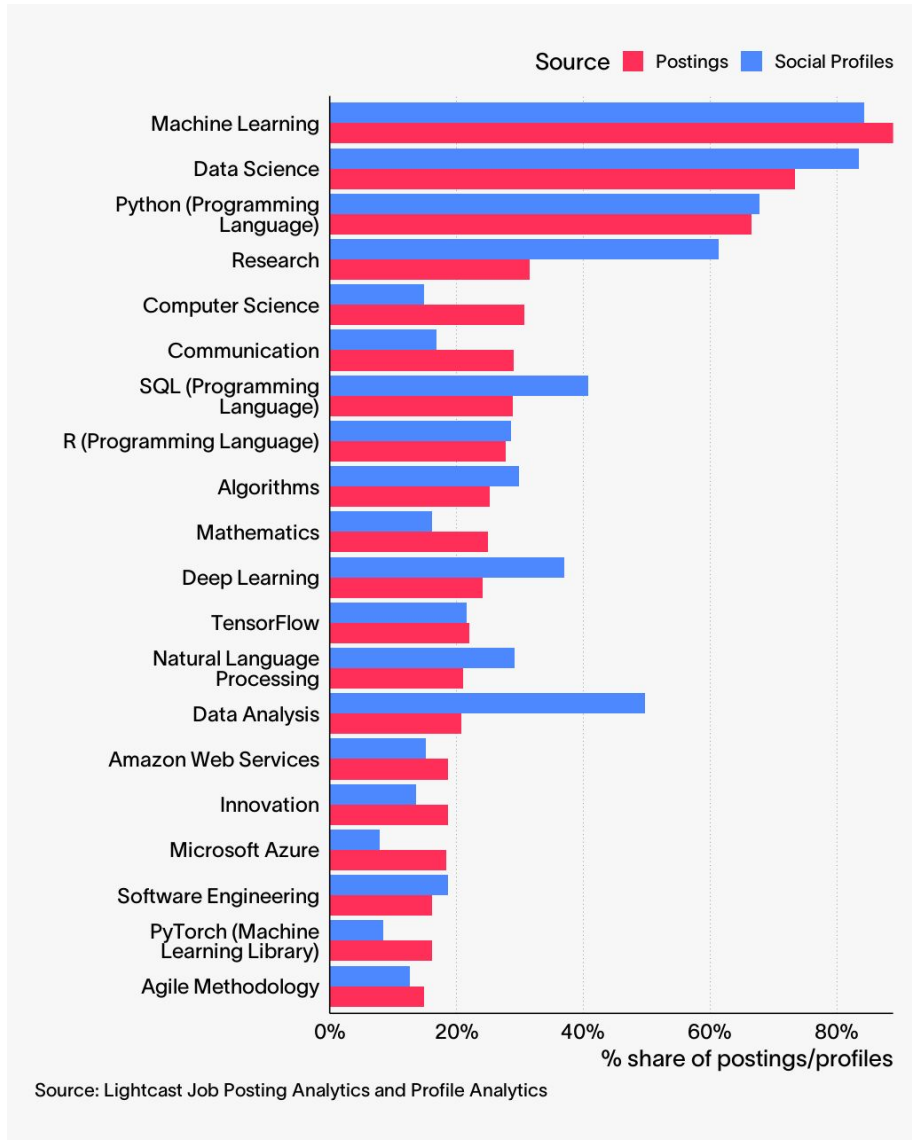


Source: Lightcast Profile Analytics



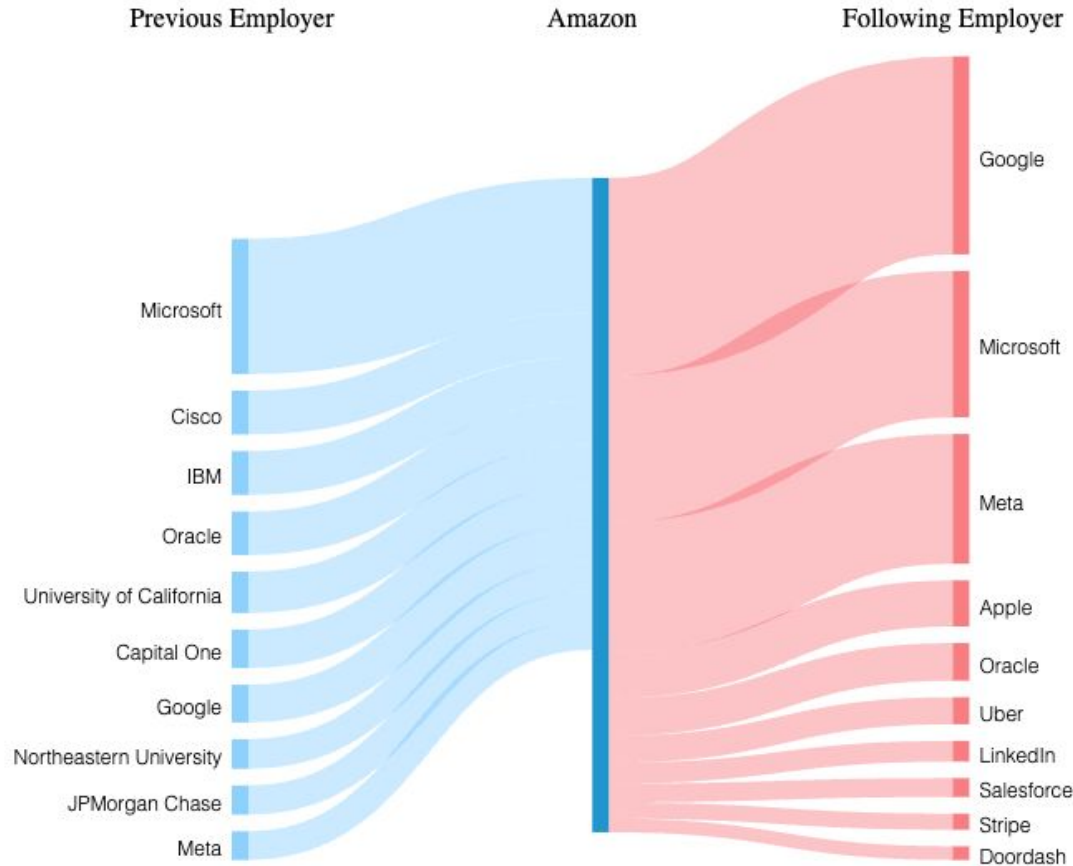
Source: Lightcast Profile Analytics

Applications of social profiles analysis: comparisons with postings



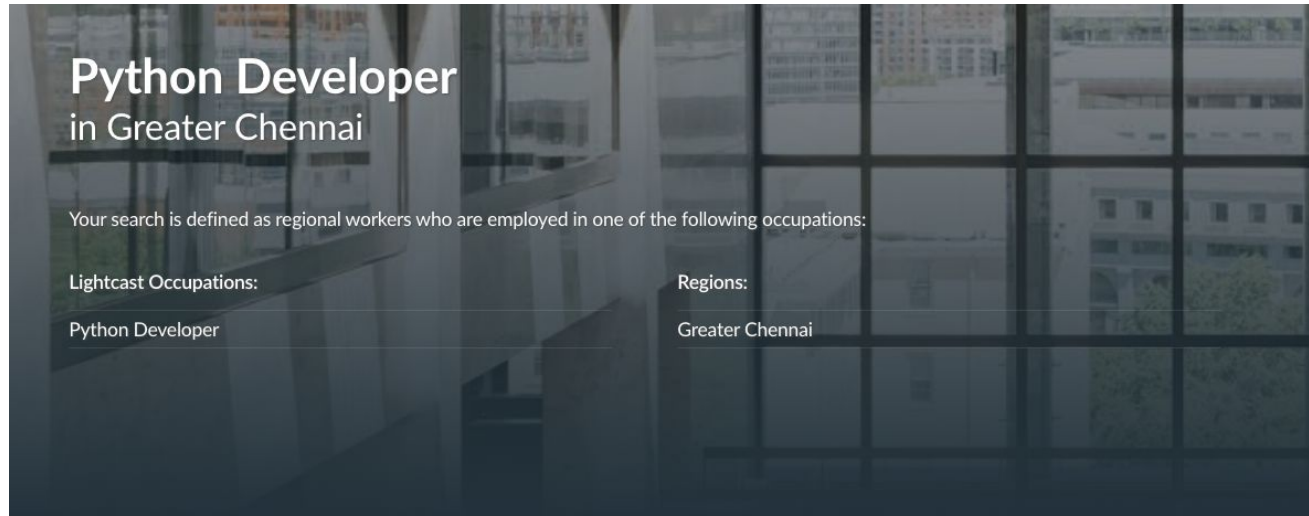
- Here we look at the top 20 skills sought in job postings for Data Scientists with AI skills
- Then, we take the share of profiles for Data Scientists with AI skills to explore how well served each skill is

Applications of social profiles analysis: longitudinal analysis



- Where profiles have histories, it allows us to see the paths made through the labour market
- Here we look at US Amazon computer workers – where they come from and where they go to

Applications of social profiles analysis: modelling supply



- Profiles aren't that reliable, but they give greater granularity than traditional LMI
- They can be used with LMI to produce rich estimates of labour market size – as we do here

Executive Summary



Supply

1473% Higher than India's National Average (68)

- ✔ Workforce representation is above average, indicating a strong supply of talent. Lightcast estimates between 901 – 1,248 workers in this occupation, with high confidence (3 out of 5).
- ✔ 424 unique companies are listed as employers on 1,121 profiles matching your search. This is less than the national average, signaling a less competitive market.
- ✔ Gender diversity in this region is 8% higher than the national average. Of the limited online profiles that have gender identification, 30% are estimated to be female (sample of 465).

Key functions for social profile analysis

- **Rich composition** – understanding the mix of talent supply in terms of detailed roles, companies, locations, education background etc
- **Skill content** – job postings allow us to understand the skill content of talent demand, valuable to understand talent supply
- **Trajectories** – longitudinal labour market analysis, looking at how careers develop

Trade-offs in social profile analysis

Pros

- Unrivalled richness for supply data, including the skills layer
- Potential high sample longitudinal analysis

Cons

- Information privacy – no excuses on safeguards
 - Biases and variable timeliness/publicness

Key message

Social profiles offer deep insights in specific labour markets, but need to be understood in context