

UK AI Exposure

Technical methodology

Built 23 April 2026 · alexlockey.com/tools/uk-ai-exposure

OVERVIEW

The UK AI exposure tool maps every UK SOC 2020 occupation unit group to an AI exposure score and a wage-exposure figure. It is a Leanpreneur asset: a lead magnet, not a research paper. The numbers are good enough to ground a conversation about where AI has already arrived; they are not predictions about which roles disappear.

Exposure scores come from Eloundou et al (2023). Employment and median annual pay come from ONS ASHE (2025 provisional). The bridge between the two runs UK SOC 2020 !' ISCO-08 (via ONS Volume 2 coding index) !' US SOC 2010 (via US BLS crosswalk) !' O*NET-SOC (via prefix match).

HEADLINE NUMBERS

Alpha (direct LLM exposure, per spec default): £107.2bn UK wage exposure.

Beta (E1 + 0.5·E2, partial credit for LLM+tools): £332.75bn.

Gamma (E1 + E2, any exposure): £558.32bn. This is what the landing page leads with — it's closest to the Eloundou paper's own \$711bn US figure methodology, and matches how AI is actually being used in 2026.

Coverage: 91.99% of UK SOC 2020 unit groups have an exposure score (379 of 412). 299 are fully scorable for wage exposure.

PIPELINE

The build runs in three stages. `scripts/ai-exposure/1-fetch.ts` downloads the raw datasets listed below. `2-build.ts` joins them and emits the derived JSON that the site consumes at build time. `3-methodology-pdf.ts` (this script) generates this document from the same manifest.

Aggregation rules applied in `2-build.ts`:

Per task !' per O*NET-SOC: importance-weighted mean of alpha / beta / gamma. Tasks without O*NET IM ratings get weight 1.

Per O*NET-SOC !' per US SOC 2010: unweighted mean across the '.xx' variants sharing the same 6-digit base.

Per US SOC 2010 !' per ISCO-08: unweighted mean across the US SOC codes that the BLS crosswalk maps to the ISCO.

Per ISCO-08 !' per UK SOC 2020: take the modal ISCO for each UK unit group (from ONS SOC 2020 Vol 2 coding index) and use that ISCO's score directly.

Wage exposure = exposure score × ASHE employee jobs × ASHE median gross annual pay.

COVERAGE AND LOSS

UK SOC 2020 unit groups total: 412

With an ISCO-08 mapped from the coding index: 412

With a derived exposure score after the full ISCO/SOC/O*NET chain: 379

With ASHE 2025 employment + median pay: 326

Fully scorable (all of the above): 299

AC-3 DISCLOSURE

Spec AC-3 expected UK wage exposure within $\pm 20\%$ of \$711bn ("H £445-667bn). Under the spec-default alpha (E1 = direct LLM exposure only, §3.1), UK wage exposure is £107.2bn — faithful to the academic 'direct replacement' reading but below AC-3 range. Beta (E1 + 0.5·E2) gives £332.75bn. Gamma (E1 + E2, including LLM-with-tools — closest to the Eloundou paper's \$711bn US figure methodology) gives £558.32bn — WITHIN the AC-3 range. The site headline can use any variant; alpha is shipped as the primary exposureScore per spec §3.1, with beta and gamma available in exposureScoreVariants and totalUkWageExposureBillionsGbpVariants for the UI to choose.

KNOWN LIMITATIONS

Eloundou 2023 was labelled against early GPT-4 capability. Model capability has moved materially since; Phase 2 of this tool re-scores with Claude (April 2026) and is expected to shift the headline up.

ASHE is employee-only. Self-employed workers are excluded, so occupations with heavy freelance or owner-operator share (creative, consulting, trades) are under-weighted in the wage bill.

The ONS SOC 2020 !" ISCO-08 bridge is lossy — the coding index maps many job titles per SOC to different ISCOs. We take the modal ISCO. Other choices (occurrence-weighted, multi-valued) give slightly different numbers.

'Exposure' is a ceiling on how much of a task inventory a model can touch, not a verdict on individual jobs. Whether a role is automated, augmented, or stays fully human is a design choice.

SOURCES

ONS SOC 2020 Volume 1 — structure and descriptions of unit groups

version 2025-12-03 · OGL v3.0

Office for National Statistics (2025). Standard Occupational Classification 2020 (SOC 2020), Volume 1: Structure and descriptions of unit groups, revised 3 December 2025. Licensed under the Open Government Licence v3.0.

ONS SOC 2020 Volume 2 — coding index (contains SOC 2020 !" ISCO-08)

version 2025-12-03 · OGL v3.0

Office for National Statistics (2025). Standard Occupational Classification 2020 (SOC 2020), Volume 2: The coding index, revised 3 December 2025. Licensed under the Open Government Licence v3.0.

O*NET 30.2 database (tab-delimited, ZIP)

version 30.2 · CC BY 4.0

National Center for O*NET Development. O*NET 30.2 Database. Employment and Training Administration, U.S. Department of Labor. Used under CC BY 4.0.

Eloundou et al — per-task AI exposure scores (full_labelset.tsv, alpha = direct exposure)

version 0471612f (pinned) · MIT (repo)

Eloundou, T., Manning, S., Mishkin, P., & Rock, D. (2024). GPTs are GPTs: Labor market impact potential of LLMs. Data: github.com/openai/GPTs-are-GPTs (commit 0471612f).

US BLS — ISCO-08 !" US SOC 2010 crosswalk

version 2012 (crosswalk current) · Public Domain (US Government work)

U.S. Bureau of Labor Statistics (2012). ISCO-08 to 2010 SOC Crosswalk. Public domain.

ONS ASHE Table 14 — occupation (4-digit SOC 2020), 2025 provisional (includes

employment count and gross annual pay)

version 2025 provisional (released 2025-10-23) · OGL v3.0

Office for National Statistics (2025). Annual Survey of Hours and Earnings (ASHE), Table 14: Occupation (4-digit SOC 2020), 2025 provisional. Licensed under the Open Government Licence v3.0.

REPRODUCIBILITY

This PDF was generated from `data/ai-exposure/derived/manifest.json` and `headlines.json`. The exact source versions and build timestamp above match the site's published data. To reproduce locally: ``npm run data:fetch && npm run data:build && npm run data:pdf``.

CONTACT

Questions, corrections, or a better SOC !' vertical mapping? Email hello@alexlockey.com. Good calls go into the next build.