Future of work, employment and careers: insights from early years of Large Language Models

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- "The coming jobocopalypse" is a common narrative, especially tech
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- We use transaction level data from a real - online platform - labour market to understand what happened to demand for different types of work after the launch of ChatGPT

Data

- Freelancer remote jobs transacted via a platform
- Ranging from short gigs to year+ long contracts (median job duration 100 hours spanning several weeks)
- Job tasks include e.g. web development, ghostwriting, coding tasks, and video editing
- We view the platform labour market as a "petri dish", where we can observe the impact of AI in real time

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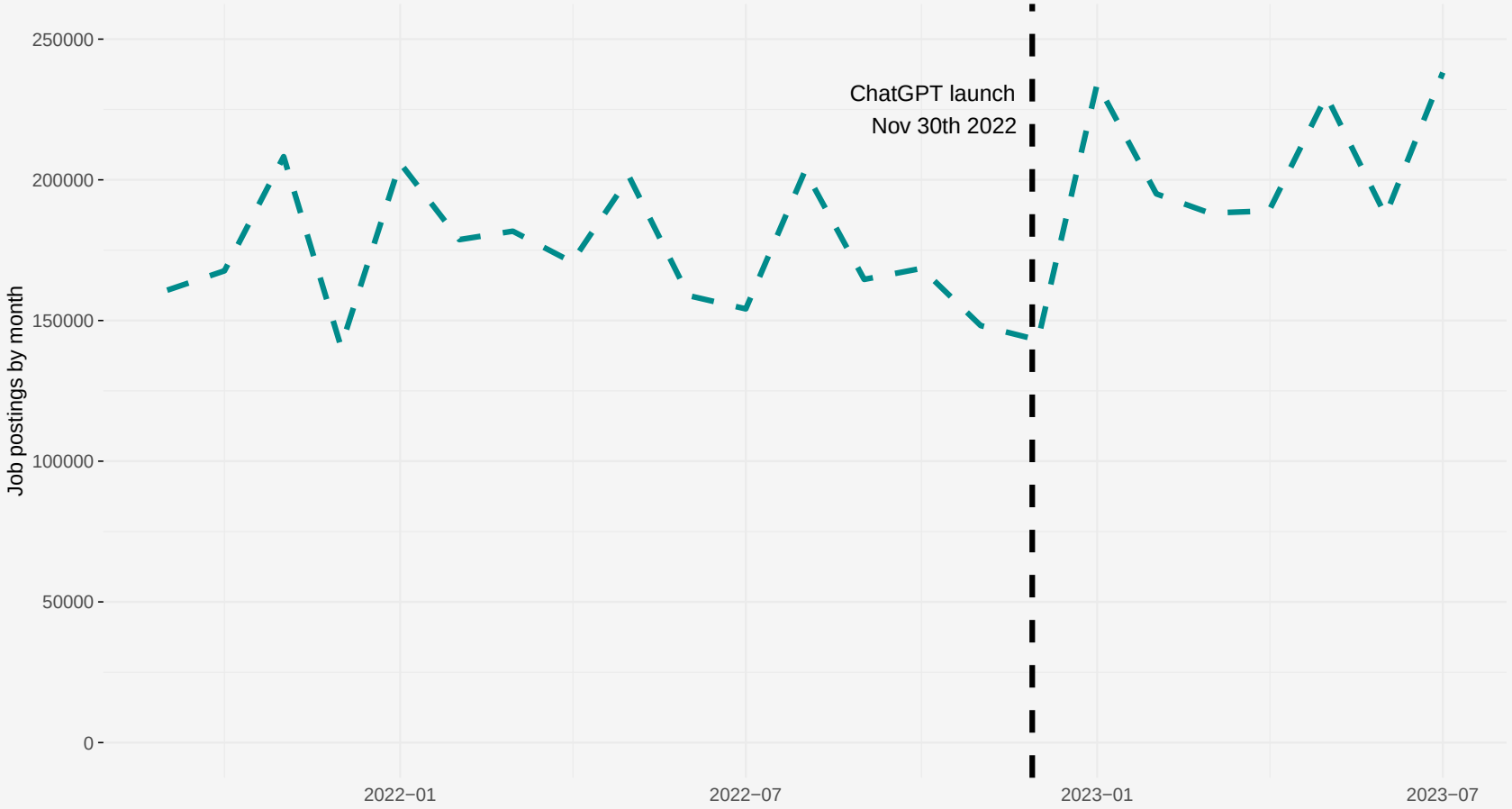
Total job postings



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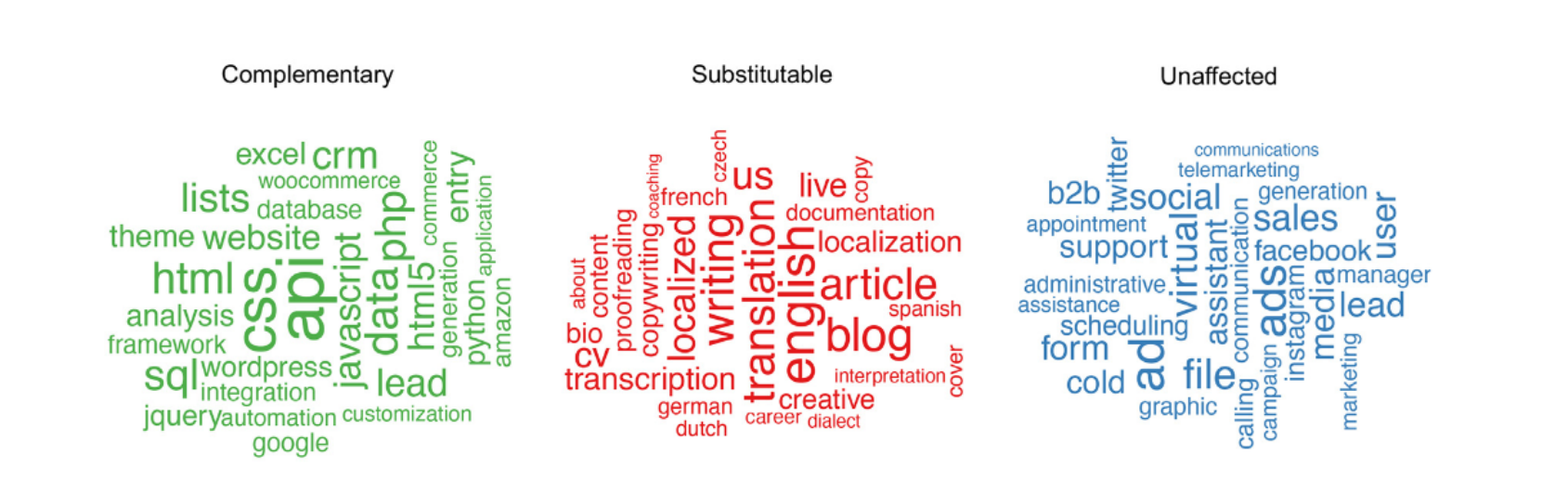
AI Exposure Labels

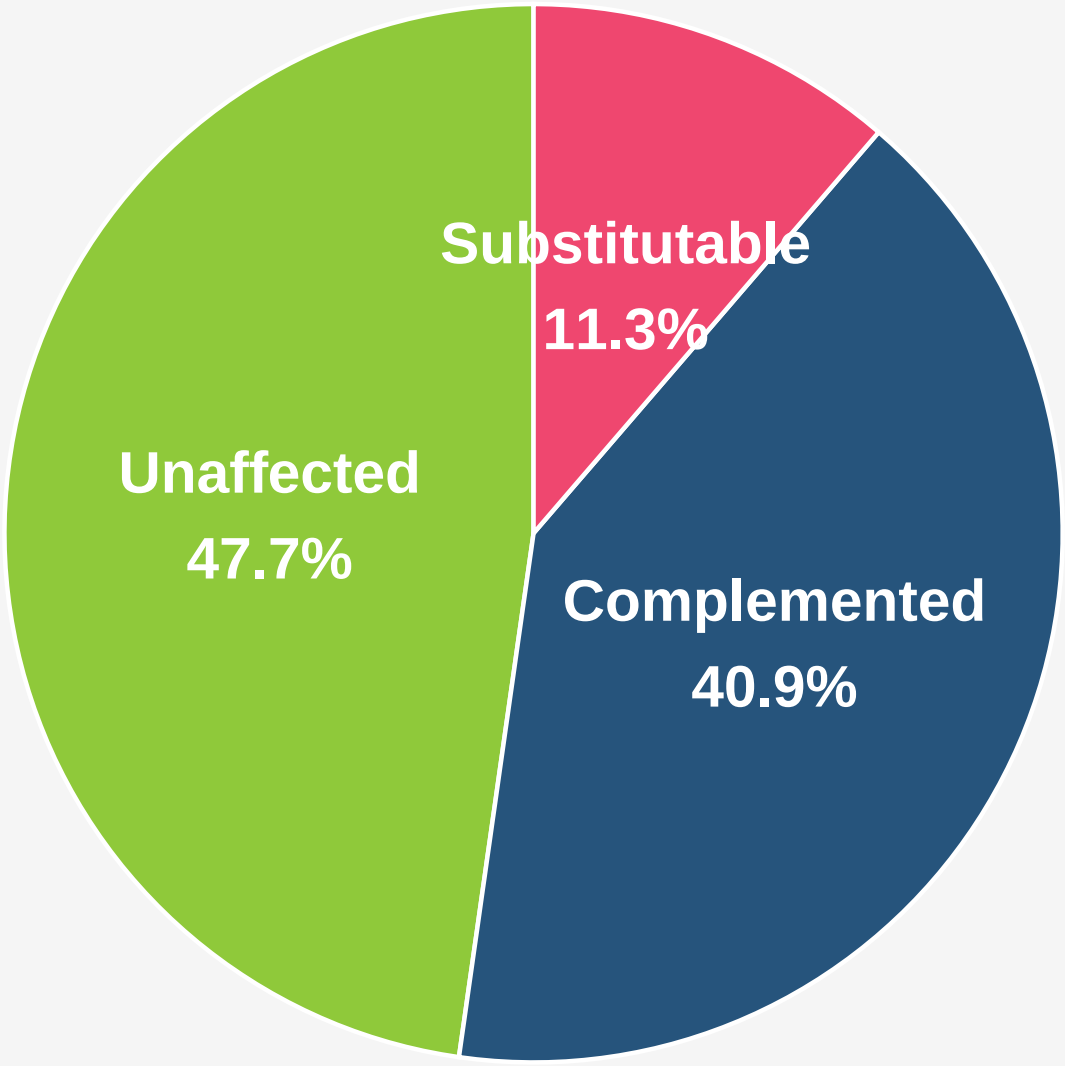


Substitutable: A non-expert person can use Large Language Models to complete these tasks with a similar level of quality without the help of an expert.

Complemented: A non-expert cannot use Large Language Models to complete these tasks without significantly compromising the quality of execution. However, an expert freelancer can use Large Language Models to reduce the time it takes them to complete these tasks by at least half and without significantly compromising quality.

Unaffected: While non-experts and experts may be able to use Large Language Models to help in these tasks, Large Language Models can only provide limited help. In other words, having access to a large language model will not reduce the time it takes an expert freelancer to complete the job by more than half.

Label shares in data



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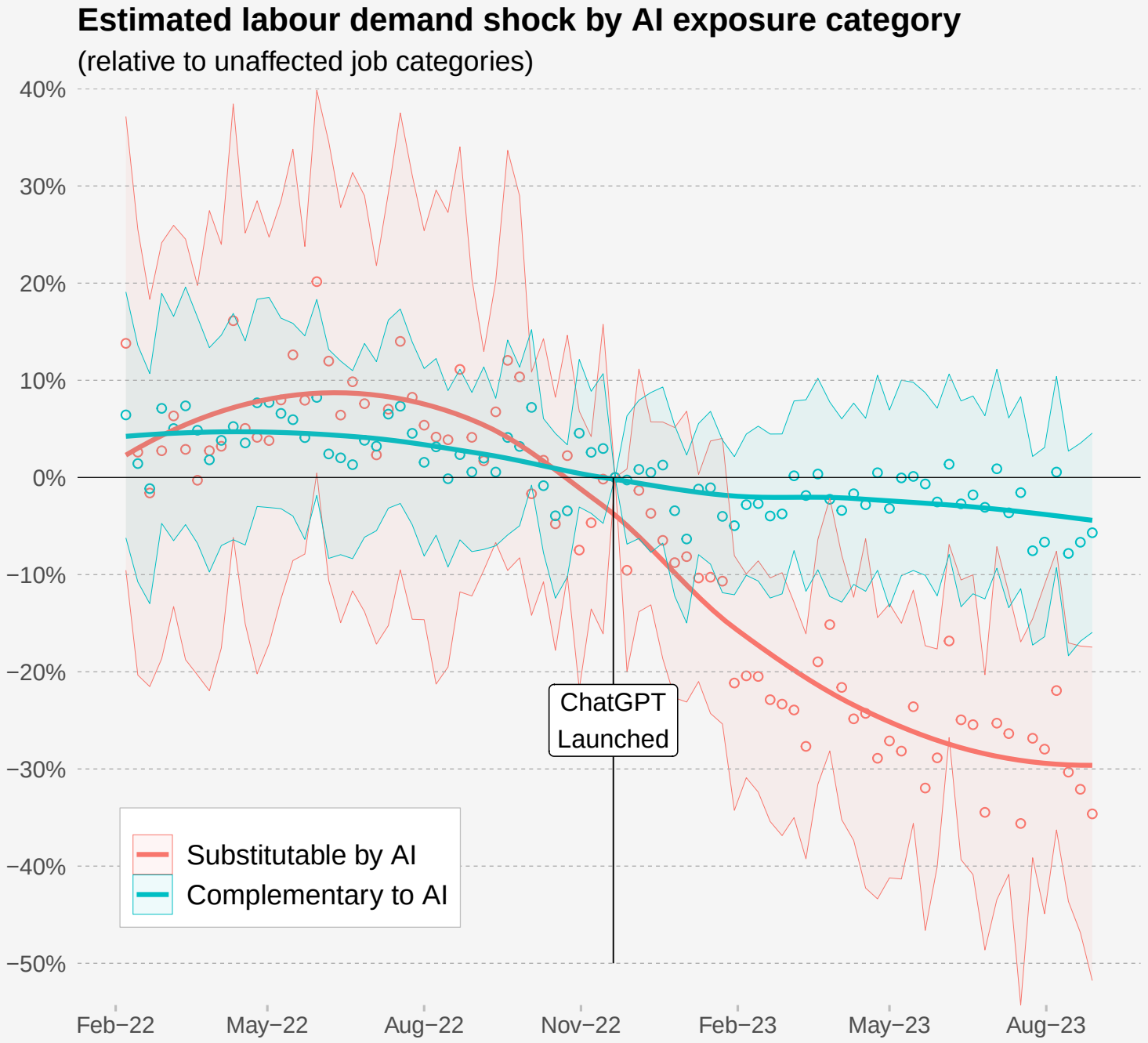
Event study plot



Summary of findings

- ChatGPT did not lead to aggregate reduction in labour demand
- Negative demand shock limited to a handful of most substitutable clusters
- A large share of the workers are able to adjust the demand shock by concentrating on less exposed jobs
- Existing studies that look at traditional labour markets (e.g. Kauhanen 2024; Humlum & Vestergaard 2025) find even smaller effects

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Discussion

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- But how about the future? E.g. deep research, automated science, agentic AI models

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- But how about the future? E.g. deep research, automated science, agentic AI models

- Outside of programming, real scalable use cases so far very limited
- Previous structural technological shifts - electricity, microprocessors - took 30+ years to mature

2 trends that will emerge, regardless of AI

1. Finland - like most other OECD coutnries - has rapidly aging population
   - By 2055, there will likely be over 1.7 million over 65 year olds (+25% compared to today)
2. Climate change will require considerable investments in building and infrastructure