

Mapping Global Talent Flows in AI Research

Initial [Literature Review](#)

[Oppenheimer and After - Tianyu Fang](#) (On China's brain drain)

Thanks to Zhengdong Wang (and others) for comments.

We have this future-oriented discipline: a group of people who build, research, and engineer to create a vision of what the world could be. The aesthetics are more normative than descriptive. Can you claim that academia still has its merits when it isn't? This answer to this question in isolation, doesn't provide a ton of value, but there are likely valuable insights to extract in trying to do so.

The consensus is that the (in AI) industry is better than academia, and [Silicon Valley is pricing academics out of AI research](#). Academia is underrated within ML research, and there are good reasons for this. Papers, the key form of output for an academic researcher, are not exclusively written by them anymore. Nearly [40% of academic papers](#) have industry co-authors and the number should expect to increase as the lines separating academia and industry become less meaningful. Regardless, what essence of academia is valuable to preserve?

Things are moving fast and it's not a matter of what is the next breakthrough, but rather when and maybe we can also ask where.

(Summary) Ideas I am thinking about:

1. Breaking down the academic/industry divide between countries with many AI researchers.
 - a. The largest industry research labs are based in the US and the UK. Although China is making leaps in retaining and producing top-tier researchers, it's mainly within academia. If the most significant breakthroughs consistently come out of these industry research labs, it's essential to understand whether immigrant AI researchers are going to academia or industry.
2. Furthermore, on the question of industry research. VC funding is very consequential to progress. Any company that wants or has had a chance has been well-supported by initial capital. The US is leading in acquiring and transmitting this capital, but I want to explore this more.

Here are some questions that I am thinking about:

What are the merits of academia in an industry-focused ML world?

1. Academia teaches people to do research and idea curation, which is hard to get in the industry. Phillipe Aghion claims this in his [paper](#) on the area. Academia (particularly

tenure) is a “pre-commitment mechanism” that gives researchers creative control they couldn’t get elsewhere. Focused, later-stage research is better compensated in the private sector, with more resources to execute it.

- a. “Learning the responsibility and ownership of research project design that often takes way longer to get in the industry.” — Zhengdong Wang
 - i. *Why is that?* People expect that you have left academia with an understanding of how research gets done and then join the industry. So, in the long term, if people aren’t choosing academia in the first place, industry organizations need to be able to provide that initial training. *Are they doing this now? Do current organizations allow for this? What has to change to make this happen?*
2. A Ph.D. is valuable outside of industry.
 - a. I’m more skeptical of this claim because engineers acting as advisors or technical experts in policy decision-making serve their function largely based on their work experience and not their policy know-how. If you have two individuals with similar experience, one with a Ph.D. with slightly less experience and the other with equivalent industry experience, the individual with a Ph.D. will likely be chosen to give the testimony, etc.

Response to the [MacroPolo AI Talent Tracker](#).

- They look at how AI's talent balance has changed throughout the pandemic.
 - Some missing pieces are worth shedding light on.
 - Lingering effects of the Trump administration.
 - Chinese academic institutions are changing and working to be these global powerhouses while the US lags.
 - The general trend is an influx of talent in AI. Graduates, irrespective of their interests (sweeping claim), are lured in by these incentives. Even neglecting salary, a cultural shift alludes to the fact that this is the area you want to be in if you want to have an impact and have a say in the future.
- Key findings
 - The U.S. is still the top destination for top-tier talent to work.
 - The strict(er) immigration laws in other countries are more a product of their ability to retain than attract/keep foreign talent.
 - We may see a squeeze in the global AI talent market. Top Chinese (and maybe neighbouring?) talent decide to stay in their native countries. More countries, such as India, demonstrate their ability to retain talent. We see the same effect in smaller countries with fewer absolute exported researchers but a global presence, like [Japan](#).
 - Newer industry research talent are widening their destination pool (to the UK, Canada, [France](#)(?))
 - What do knowledge spillovers look like? Suppose these new players can do institution-building fast. In that case, the presumed merits of working at a long-standing, prestigious, elite institution

may be outweighed by the value these newer organizations can provide.

- It goes against my intuition that newer institutions can provide more resources, mentorship, signal, etc., than older institutions. But present times are proving something different. Endowments are examples of the fact that time = money and elite talent. Venture capital is shaking this narrative and needs to be more mappable, but it still presents cultural shifts in the community.
 - Are the bureaucracies at large organizations becoming too hard to bear?
 - Large firms like OpenAI, Anthropic, and DeepMind are relatively new but provide fast-paced, well-resourced environments. Are they anomalies?
 - Most well-resourced organs with an industry-equivalent tenure (i.e., Distinguished ICs) are at companies like Google, Meta, Amazon, etc., which move slower.
 - VC is changing dynamics here and is prudent here where the upfront costs of starting an organization are so high that it's prohibitory. *Talent question: Where and to whom is AI VC funding going?*

MacroPolo's Key questions:

1. Where do top AI researchers come from?
2. Where do top AI researchers work and study?
3. What are their career paths?

Doing translational research: help large firms extract key insights. For example, how should this work affect their hiring practices? Help this work serve as a basis for more academic, empirical economics research. AI is massively consequential, and even "traditional" labour, growth, and industrial organization economists need to account for this forceful global wave.