



NATIONAL SECURITY
DATA AND POLICY
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Identification and Development of AI Talent in the United States

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Executive Summary

Education and retention of AI talent is critical for the United States to maintain dominance in AI development and deployment. While the US leads the AI race in compute and commercial support, several forecasters place the US behind India and China in AI talent. Restrictions on immigration reduces the talent pool available to American businesses and universities and creates a climate of uncertainty that may dissuade top researchers. As “AI work” shifts from coding to deep learning, traditional degree pathways may leave graduates without the skills needed by frontier labs and companies.

To fill current gaps and create the AI talent of the future, federal policy should:

- Create AI-specific immigration pathways
- Fund interdisciplinary programming at universities across the US

Problem Statement

“AI talent” remains an undefined term. Algorithms continue to grow in complexity and capability, and developer roles shift alongside them. Industry, academia and policy all face a growing need for individuals with AI skills. Demand for talent continues to outstrip the supply of graduates with AI-related degrees each year.ⁱ The type of “AI talent” needed varies widely, from marketing managers creating visual campaigns to deep learning. Critical components of AI infrastructure are also understaffed: in 2023 71 percent of data center managers struggled to fill open roles.ⁱⁱ To craft effective policy for talent development, it is necessary to understand how “AI talent” is categorized and where it is typically sourced.

Background

The Stanford AI vibrancy tool ranks the US number one globally for supercomputers and compute; however, when comparing “AI talent,” the US scores lower than India and several smaller nations like Singapore and Luxembourg.ⁱⁱⁱ However, it can be challenging to compare AI talent across nations, given differing measures. Several indices, such as the one previously mentioned, use mentions of AI skills on LinkedIn profiles as an approximate measure of the concentration of AI talent in each nation, while others use publications or the number of graduates in relevant fields.^{iv} Given the rapid rate of change in AI capabilities and integration, the usefulness of “AI skills” will likely change over time.

International Talent

Both immigrant talent and the prestige of American higher educational institutions play a strategic role in the race to attract top AI researchers. A 2025 study attempted to track the movement and origins of key researchers, focusing on 4,622 individuals that have been published at top AI conferences in the last year. By this metric, the People’s Republic of China is by far the world’s largest educator of top AI researchers and continues to extend its lead. In 2020,

29 percent of top AI researchers were Chinese; in 2025 38 percent of top researchers were Chinese.^v

However, China faces issues with retention; compared to the United States' retention rate of nearly 80 percent, only 11 percent of Chinese-educated top researchers are currently working in China.^{vi} In fact, the US is a top destination for Chinese-educated AI researchers, with 72 percent working at American higher ed institutions.^{vii} This trend may be exacerbated by recent changes requiring senior AI researchers and executives to inform the government anytime they wish to travel overseas, restrictions typically reserved for sensitive fields like defense technology.^{viii} These restrictions may damage recruitment efforts, as young Chinese AI talent weighs the risk that returning after graduation may leave them permanently unable to work abroad.^{ix}

Education

There are many degrees which could be considered "AI talent." Accordingly, the Council for Economic Advisors has created a framework that classifies 154 degree subjects as "AI-relevant," meaning they provide relevant skills for the development of AI hardware or software.^x Under this framework, engineering and computer sciences make up more than a third of relevant degrees respectively, followed by a small percentage of mathematics and humanities degrees.

^{xi} International talent remains critical, as international students earned more than 50 percent of AI-related master's degrees and nearly 60 percent of AI-related PhDs at American colleges and universities in the last decade.^{xii}

While useful for domestic analysis, differences in national degree classification make this framework unsuitable for international comparison. For example, public data from the People's Republic of China provides broad categories such as "science" for graduates, leaving most US categories without equivalent measures.^{xiii}

Non-Technical Talent

As AI roles shift from traditional coding to monitoring and deployment and the traditional talent pool is exhausted, companies have begun hiring from non-tech backgrounds.^{xiv} Companies are hiring neuroscientists to work in interpretability, which is the study of an AI model's inner workings.^{xv} As algorithms become more sophisticated, they make associations and develop neural connections on their own.^{xvi} As these algorithms continue to "build their own brain," they become increasingly difficult for human engineers to monitor and regulate. This makes safe AI development and deployment particularly difficult, as "hidden" neural processes can affect decision-making and may produce unanticipated negative outcomes.^{xvii} Neuroscientists bridge this gap, using theories and tests developed from studying human cognition to illuminate algorithms' reasoning and map associations.^{xviii}

Insights from neuroscience may also make AI more energy efficient. Human brains operate on the equivalent of 20 watts of energy, performing calculations and making decisions at a fraction

of the power required for AI.^{xxix} Neuroscientists work to understand how the brain prioritizes tasks and manages resources, which may provide a blueprint for AI to do the same.^{xxx}

There is also demand for philosophers to develop moral codes for algorithms. Anthropic has a “top philosopher” that helps create its “soul doc,” a set of rules and principles that prevent undesirable behavior like lying or blackmail.^{xxxi} Philosophers help models like ChatGPT use consequentialist frameworks, which weigh costs against benefit, such as the “least harmful” way for a car to crash.^{xxii} The development of consequentialist AI frameworks is especially relevant for autonomous vehicles and weapons systems, because they explicitly permit models to take harmful actions to avoid greater harm.^{xxiii}

Policy Implications

Current Policy

Current federal policy does not adequately support AI talent development in higher education or address the role of international talent. The White House’s 2025 AI Action Plan focuses primarily on infrastructure workers, encouraging upskilling and AI literacy programs by indicating eligibility for financial assistance. However, while there is a strong need for AI infrastructure workers, there are already several programs to meet this demand on the state and federal level. From apprenticeships to high school AI CTE programs, grassroots initiatives are closing the gap.^{xxiv} The federal government should expand its focus to meet strategic needs in immigration and educational reform.

Currently, students who graduate with AI-relevant degrees can enter the H1B lottery, wait for a green card (which can take a decade or more), or leave the country.^{xxv} While programs like the Optional Practical Training exist, which could give graduates up to three additional years in the US under the STEM extension, the instability this creates can be disconcerting.^{xxvi}

Given that the majority of domestic graduates from AI-relevant degree programs are international, as previously mentioned, this presents a real challenge for companies hiring AI talent. Friction in the immigration process harms high level AI researchers as well; according to the CEA, “60 percent of non-U.S. citizen AI PhDs in the United States report immigration difficulties, while only 12 percent of non-citizen AI PhDs in other countries report similar issues.”^{xxvii} A third of AI PhDs leaving the US stated difficulties with the US immigration system as a major factor in their departure.^{xxviii}

Across industry, academia, and policy, there is an increasing need for interdisciplinary skills to assist in AI development and navigate social change. As evidenced by the disappearance of coding jobs and a slow shift to nontraditional AI developers, the types of “AI talent” needed may not yet exist. Interdisciplinary research (such as neuroscience-machine learning) may lead to unexpected insights and innovation in the “AI race.” Federal policymakers should support this type of collaboration, given the strength of American higher education and the unique advantage it offers.

Policy Recommendations

Create an AI-specific immigration pathway

Restrictions on immigration and tenuous visa status prevents American industry and universities from taking full advantage of the AI talent pool. Creation of a separate pathway should expedite the hiring process, and signal to AI talent that moving their work to the US can be easy and efficient. Given the caps on H1B visas and the backlog of green card applications, it is likely simpler to create a new type of EB visa for AI workers, like that of religious or other “special immigrants.”^{xxix}

An example of this is the Canadian Express Entry program, which expedites the applications of individuals considered “highly skilled.” In its first two years, the program brought in approximately 24,000 immigrants, the majority of whom worked in software engineering or other tech fields.^{xxx}

Additionally, the White House should emphasize support for the attraction and retention of AI talent in the issuance of “extraordinary ability” visas. During the Biden administration, updated O-1 visa guidelines prioritizing workers with AI-related skills increased both application and approval rates.^{xxxi}

Fund interdisciplinary AI programming

The federal government should expand the FIPSE Special Projects Program’s Absolute Priorities to include a competition for programs that encourage interdisciplinary AI research and learning on university campuses.^{xxxii} These grants are typically given to programs that meet rising challenges in education or civic life, and ensuring that college graduates are nimble and prepared to work across relevant fields (such as neuroscience and philosophy) fits the spirit of the program. This could potentially include programs like the University of Washington’s interdisciplinary AI minor, the work of university-wide institutions, or even student led projects.

Implementing these policy changes will allow the United States to expand access to AI talent, increasing human capital in key strategic areas from defense to industry. Expansion of the AI talent pool is necessary to fill current vacancies in academia and the private sector, and to enable the US to remain at the forefront of AI development globally.

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