Immigration Policy and the Global Competition for AI Talent
Established in January 2019, the Center for Security and Emerging Technology (CSET) at Georgetown’s Walsh School of Foreign Service is a research organization focused on studying the security impacts of emerging technologies, supporting academic work in security and technology studies, and delivering nonpartisan analysis to the policy community. CSET aims to prepare a generation of policymakers, analysts, and diplomats to address the challenges and opportunities of emerging technologies. During its first two years, CSET will focus on the effects of progress in artificial intelligence and advanced computing.
Immigration Policy and the Global Competition for AI Talent
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The authors are solely responsible for the views expressed in this piece and for any errors.

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The United States has historically led the world in technological innovation through its internationally renowned education institutions, innovative industries, top-tier research laboratories and, critically, its unique ability to attract talent worldwide.

Immigrants play a key role in sharpening America’s technological edge. In recent years, the demand for artificial intelligence talent has greatly exceeded domestic supply, leading to a large share of foreign-born AI students, workers and entrepreneurs in the United States. Although important, efforts to increase the domestic AI workforce are insufficient to fill the immediate demand for AI talent. At the same time, other countries are developing their own capabilities and institutions in AI and aggressively recruiting AI talent through new immigration policies. In this competitive environment, current U.S. immigration policies, many of which date back decades, may work against the country’s historic strength in attracting and retaining international talent.

Although various factors shape any country’s AI competitiveness, this paper will focus solely on immigration policies relevant to AI talent in the United States and four sample economic competitor nations: the United Kingdom, Canada, France, and Australia. These countries were selected for their unique policies on attracting international talent in AI and other tech fields. The United States may be able to evaluate lessons learned from these countries to inform domestic policy. On the other hand, if the United States fails to adapt to an increasingly competitive global technology talent landscape, other countries may begin to draw AI talent away from American schools and employers.
This paper analyzes policies relevant to four categories of immigrants: students in AI-related fields of study, workers in AI-related industries, distinguished AI workers (that is, individuals internationally renowned for their achievements in AI), and AI entrepreneurs. These groups represent the range of backgrounds and experience levels that nations need to compete in AI. We explore trends that, taken together, may be making the U.S. immigration system less attractive to these groups relative to other countries’ systems:

• Within the last five years, the UK, Canada, France, and Australia have adopted major immigration reforms to attract talent in AI and other technical fields. The United States has not.

• Despite growing job opportunities, recent graduates and others may be restrained from contributing to the U.S. AI workforce to their full potential—partly due to current caps, backlogs, and sponsorship processes at the expense of the employer for temporary work visas and permanent residency. In contrast, Canada’s new immigration policies quickly bring in skilled migrants and integrate graduates into the workforce. The UK is proposing similar changes to ease and expedite the immigration process for technically skilled migrants.

• The United States’ per-country quotas on permanent residency—which remain unchanged for decades—have created a significant bottleneck, especially for Indian nationals who make up the 25 percent of Silicon Valley’s technical workforce. The other countries in this analysis forego quotas on permanent residency status and allow immigrants who meet permanent residency requirements to apply.

• Although data is scarce and important trends are in nascent stages, empirical indicators suggest that some new AI-focused immigration policies in other countries are successful.

• The United States has long attracted immigrant entrepreneurs with its innovative culture, but does not offer an entrepreneur visa. Entrepreneur visas offered by other countries in this analysis have largely failed due to unrealistic and vague metrics for business success or long processing times. The United States could learn from the mistakes of competitor countries and design its own visa to increase its immigrant entrepreneur population and create jobs for Americans.
The United States historically and presently benefits from a strong baseline of technological innovation through existing institutions. Immigration trends alone are unlikely to eliminate the U.S. advantage in the near term. However, the global landscape is shifting, and restrictive immigration policies threaten to undermine U.S. AI progress in the long term. To ensure America remains competitive for AI talent in the coming years, U.S. policymakers should consider reforms to current immigration statutes, regulations, and agency guidance. Other countries’ immigration reforms suggest three main lessons:

• **Improve temporary visa options for skilled workers.** The structure of the H-1B temporary work visa prevents AI talent from contributing to the United States to their full potential. In particular, workers seeking permanent residency while on H-1B status—a process that could take years or decades—would need another sponsorship if they wished to switch positions or employers. Further, the H-1B lottery occurs only once a year, forcing employers to wait until the annual draw on April 1 to learn whether critical employees have been selected. In contrast, Canada has no cap on the number of work permits that can be provided year-round and issues these permits in as little as two weeks.

• **Expand opportunities for permanent residency.** Allocating permanent residency status based on decades-old caps and immigrants’ countries of origin, rather than the skills they bring to the United States, has created a bottleneck for highly skilled AI workers who wish to contribute to the U.S. AI workforce in the long term. Specifically, the employment-based green card wait time for Indian nationals, who make up 25 percent of Silicon Valley’s technical workforce, is 89 years. There are no formal caps or quotas on permanent residency in the UK, France, Australia, and Canada. Instead, immigrants are eligible to apply once they have lived or worked in the country for a set number of years.

• **Expand opportunities for entrepreneurs.** While each of the other four countries in this analysis offers some form of an entrepreneur visa, initial results suggest they have been relatively unsuccessful. The United States should strengthen AI innovation by adopting an entrepreneur visa informed by the flaws of competitor nations to better attract and retain AI entrepreneurs.
Introduction

Since World War II, the United States has led in scientific and technological innovation, attracting the world’s best and brightest through unparalleled higher education institutions, Silicon Valley, and research laboratories. However, recent trends indicate that demand for artificial intelligence talent in the United States exceeds domestic supply. Although scholars debate the existence of a general STEM “skills gap,” clear and diverse evidence indicates that particularly in AI, the gap is large and important. It is expected to grow and is not unique to the United States; many countries are adjusting immigration policies to recruit and retain AI talent.4

Today, early signs are emerging that the U.S. immigration system is an obstacle to AI innovation and development. Ian Goodfellow, Director of Machine Learning at Apple, has stressed that “visa restrictions have been one of the largest bottlenecks to our collective research productivity over the last few years.”5 Accumulating anecdotal evidence also indicates that many tech companies are setting up operations outside the United States, motivated in some cases by more friendly immigration policies allowing them to quickly and easily hire skilled foreign workers.6

While the United States has long attracted the world’s best and brightest in AI and other emerging technologies, outdated immigration policies may put this historic advantage at risk. America must understand how its policies stand up to those of competitor countries and reform them for a new era of AI competition.7
METHODOLOGY
This paper compares the United States with a sample of key competitors in AI: Canada, Australia, the UK, and France. Like the United States, these are technologically advanced, economically vibrant democratic nations with universities and private sectors active in AI; in other words, they are among America’s leading competitors for globally mobile AI talent. In addition, each is working to develop its AI capabilities and has recently enacted or announced policy changes designed to attract highly skilled immigrants.8

The analysis first defines four relevant populations seeking opportunities outside their countries of origin. Taken together, they represent the full range of talents countries hope to attract to advance AI development:

1. **Students**: Students pursuing higher education, undergraduate or graduate, in a field of study related to AI.

2. **Workers**: Individuals with higher education degrees who are employed or seeking AI-related positions.

3. **Distinguished workers**: Individuals already internationally recognized for their achievements in AI or related fields, as evidenced (for example) by major AI-related prizes, patents, or publications.

4. **Entrepreneurs**: Individuals planning to start AI-related businesses.

For each country, we reviewed immigration policies relevant to these populations from government websites that explain visa processes and provide text of national laws and regulations. The analysis is in question-and-answer format: for each population, we pose questions an individual might consider in deciding where to move, study, or start a business, and compare how the answers differ from country to country. These sources may not fully reflect the practical realities of the immigration process, such as processing delays and unwritten trends in adjudication and interpretation of relevant laws. To address these possible gaps, practitioners with experience in the immigration laws of the relevant countries reviewed this report. We also reviewed articles written by reputable law firms, journalists, and consultants discussing the practicalities of countries’ visa programs.

This report analyzes only immigration policies. While significant, we recognize that immigration policy alone is not the sole determinant for where AI talent chooses to move and is unlikely to be the single factor that challenges America’s technological leadership. Other inputs—such as institutional prestige, cost of living, perceived
degree of opportunity, health of the economy, and societal and cultural factors—are important, but not addressed in this paper.⁹

The report is organized into sections corresponding to the four categories of talent. Each section begins with key insights from our analysis, a narrative discussion of the major differences identified between U.S. policies and policies in the other countries, and then presents a color-coded chart with country-specific answers to common immigration questions. The report concludes with recommendations for improving U.S. competitiveness for international talent and suggestions for further reading.
International students will play an important role in the future of AI talent in the United States. While significant domestic initiatives seek to connect more native-born Americans to STEM training and employment, these efforts will not be sufficient to ensure U.S. AI competitiveness in the near term. Currently, 66 percent of graduate students in America’s top AI PhD programs are foreign born. And to the benefit of the United States, a large majority stay after graduating, filling a critical domestic talent gap. Meanwhile, data from leading online hiring platforms suggests that demand for AI talent will continue to exceed supply, at least in the near term. To this end, the United States must ensure its immigration policies are competitive in attracting and retaining international students.

International students are defined as individuals pursuing higher education, undergraduate or graduate, outside their country of origin. The five countries included in this report hosted 56 percent of all international students globally in 2017, with the United States as the most popular destination. However, the United States experienced a decline in foreign student enrollment from 2016 to 2017—the first decline in a decade—and again from 2017 to 2018 and 2018 to 2019. Meanwhile, other countries experienced an increase in enrollment. This trend indicates students are considering and pursuing higher education in competitor countries, where they may eventually integrate into the workforce and further AI advancements outside the United States.

**KEY TAKEAWAYS**

Each country offers a clear path for international students to pursue higher education, but international students’ legal options for staying
and integrating into the workforce upon graduation vary significantly from country to country:

- **Canada** and **France** offer graduates clear pathways into the workforce and permanent residency, with fewer numerical restrictions, more support resources, and less complicated application processes.

- The **United States** offers international graduates up to three years of work experience through the Optional Practical Training (OPT) program. However, current caps on the temporary work visa and a large backlog of employment-based green card applications may hinder graduates from integrating into and contributing to the U.S. workforce to their greatest potential in the long run.

- Like the United States, **Australia** allows graduates to work for a limited time after graduation. However, many Australian graduates struggle to find a job in their field on the post-study work visa, which ultimately puts them at a disadvantage when applying for permanent residency.

- The **United Kingdom** does not offer a post-study work visa comparable to OPT, but PhD graduates may stay for a year and all other graduates may stay for four to six months to find an employer sponsor for a separate work visa. Recently, the UK government proposed reinstating a two-year post-study work visa by 2021.

- The **United States** is the only country in this comparison where dependents of international students cannot work.

**DISCUSSION**

**Canada** provides a relatively secure and streamlined pathway to permanent residency after graduation.\(^6\) In recent years, the United States has experienced declines in international student enrollment from 903,127 in 2017 to 872,214 in 2019.\(^7\) Meanwhile, Canada exceeded its 2022 goal to enroll 450,000 international students.\(^8\) **Canada** offers the Post Graduate Work Permit Program (PGWPP), similar to the U.S. OPT (discussed below), allowing graduates to work for three years. However, graduates can only use the PGWPP once. This limit poses a potential challenge to graduates with bachelor’s degrees, who may struggle to compete with workers with graduate degrees for higher-end jobs (i.e., jobs for which graduate education is preferred or required).\(^9\) They are unable to use the PGWPP again if they choose to pursue a Canadian graduate degree. Those with master’s degrees or higher may be more likely to find highly skilled positions that would improve their standing in Canada’s points-based Express Entry (EE) system for permanent residency, giving them significantly better and earlier chances
to settle in Canada over the long term (discussed in the “worker” section). Furthermore, many Canadian provinces offer programs to retain higher education graduates, such as Manitoba’s International Education Stream, which prioritizes employing STEM graduates, and the Study and Stay program in Nova Scotia, which supports graduates transitioning into the workforce.

Similarly, students in France encounter a fairly open immigration system. Foreign-born students in French universities are granted renewable long-term stay visas (VLS-TS) in their first year of study. The VLS-TS serves both as a residence card and work permit, lasting until graduation. After graduation, students can apply for a temporary work permit, which provides them a year to find a job or start a company. If they succeed, they would likely qualify for the uncapped French Tech Visa, a category within a broader immigration status known as the Talent Passport. This program grants residency for four years with the opportunity for renewal. Once on the Talent Passport (or any legal status) for five years, individuals may apply for either uncapped permanent residence or citizenship.

In the United States, full-time students usually have little trouble obtaining student visas, but they may struggle to stay and work after graduating. Student visa holders who studied STEM (science, technology, engineering, or mathematics) disciplines can use the STEM OPT program to work in the United States for up to three years without obtaining another visa. However, to stay longer, they need to find a job with an employer who is able and willing to sponsor an H-1B temporary work visa. H-1Bs are currently capped at 85,000 annually and distributed through a lottery-based system. Historically, U.S. Citizenship and Immigration Services (USCIS) has reached the H-1B cap within a week of beginning to accept petitions. In 2019, it took only five days.

Graduates may also apply directly for an employment-based green card, which grants permanent residency. But since waiting and applying for an employment-based green card can be time-consuming, most graduates apply for a temporary status first. The United States issues only 140,000 employment-based green cards per year, including dependents (for context, the U.S. tech sector employed an additional 183,033 people from 2018 to 2019). Employment-based green cards are further restricted in that no more than seven percent can be issued to individuals from one country, resulting in varying wait-times for individuals depending on country of origin.

In late 2018, the Trump administration announced plans to impose unspecified time limits on student visas and possibly eliminate OPT status. This change could deter prospective students and cause serious problems for students already in the United States who need additional time to complete their studies. More recently, hundreds of international students have experienced unusual delays in visa process-
ing, known as “administrative processing,” resulting in high-profile problems at top U.S. universities as students’ academic work is put on hold.\textsuperscript{28}

**Australia** offers a post-study work visa, known as the Temporary Graduate (subclass 485) visa. The visa is similar to the PGWPP in Canada and OPT in the United States, except graduates do not need to be employed to use it. The permitted length of stay depends on the degree obtained: bachelor’s graduates may stay for two years, master’s graduates for three years, and PhD graduates for four years.\textsuperscript{29} While the subclass 485 provides graduates with work opportunities, a recent study found that, in practice, up to 56 percent of subclass 485 graduates were unemployed or working outside their field of study, with many reporting that employers preferred to hire permanent residents or citizens. Consequently, many graduates end up taking low-skilled positions—which undermines their chances of eventually gaining permanent residence, typically requiring skilled work experience in one’s field of study—or leaving Australia entirely.\textsuperscript{30}

The **United Kingdom’s** current system is arguably less favorable than those of Canada, France, the United States, and Australia, though this may soon change. The UK currently has no automatic post-study work status for most graduates. PhD graduates have one year to seek and/or accept full-time work, and most other graduates have four months to seek employment before they must leave.\textsuperscript{31} However, in December 2018, the UK Home Office proposed a new skills-based immigration system, to take effect in 2021, that would allow all graduates of UK universities to seek employment for up to six months. More recently, Prime Minister Boris Johnson stated a two-year post-study visa will be available to all graduates by 2021.\textsuperscript{32} Furthermore, PhD-level occupations were recently exempted from the 20,700 annual cap on the Tier 2 (General) work visa, alleviating its high demand.\textsuperscript{33} This exemption has widened the pathway for highly educated students to stay in the UK after graduation.

After living in the UK for five years, individuals are eligible to apply for indefinite leave to remain, otherwise known as permanent residency. Unlike the United States, there are no quotas or caps on permanent residency. After one year as a permanent resident, graduates can then apply for British citizenship. Overall, the lack of a post-study work visa seems to be the most significant challenge for recent graduates who wish to stay in the UK. However, proposed measures may create a clearer and more certain student-to-worker pathway, and ultimately, a work-to-citizenship pathway.\textsuperscript{34}
International Student Immigration Pathways

Answers to international students’ hypothetical questions are color-coded in red, yellow, green, or gray. Red indicates a policy that would significantly restrict AI talent from migrating in the first place or settling in the long term. Yellow reflects a moderately restrictive policy, and green indicates a policy favorable to incoming foreign-born AI talent. Gray indicates “not applicable” (for example, where the visa in question is unavailable in the given country).

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<tr>
<th>Can I get a student visa?</th>
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<td>Yes, if the applicant has been accepted to an approved institution.</td>
<td><strong>Yes, if the applicant has been accepted to an approved institution.</strong></td>
<td>Yes, if the applicant has been accepted to an approved institution.</td>
<td><strong>Yes, if the applicant has been accepted to an approved institution.</strong></td>
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<th>How long can I stay?</th>
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<td>For the duration of the program of study.</td>
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<td>Yes, for up to 20 hours per week. In most cases, students can only work on campus.</td>
<td><strong>Yes, for up to 20 hours per week. Students may work on or off campus.</strong></td>
<td>Yes, for up to 20 hours per week. Students may work on or off campus.</td>
<td>No. There is currently no post-study work permit, but the UK government plans to introduce one in 2021. At present, PhD graduates may stay for a year and all other students have four to six months to find a job after graduating. Employers must sponsor graduates for a general work visa.</td>
<td>Yes, if the applicant has been accepted to an approved institution.</td>
<td>Yes, if the applicant has been accepted to an approved institution.</td>
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<th>Is there a post-study work visa?</th>
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<td>Yes. Science, Tech, Engineering, and Mathematics (STEM) graduates can work for three years on Optional Practical Training (OPT) status.</td>
<td><strong>Yes. All graduates whose programs are two or more years may obtain a three-year work permit.</strong></td>
<td>Yes. Graduates with bachelor’s degrees can work for two years, master’s degrees for three years, and PhD degrees for four years.</td>
<td>No.</td>
<td>Yes, if the applicant has been accepted to an approved institution.</td>
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<th>Can I switch jobs on the post-study work visa?</th>
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<td>Yes.</td>
<td><strong>Yes.</strong></td>
<td>Yes.</td>
<td>N/A</td>
<td><strong>Yes.</strong></td>
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<th>Can I continue working after my post-study visa expires?</th>
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<td><strong>Maybe.</strong> Current caps and backlogs on the H-1B work visa and permanent residency may hinder graduates from staying in the long term.</td>
<td>Yes. Graduates can apply for permanent residency (numerically uncapped) through Express Entry. Some provinces may also offer programs for STEM graduates, providing additional pathways to permanent residency.</td>
<td><strong>Maybe.</strong> Most graduates struggle to find jobs in their field of study, putting them at a disadvantage when applying for permanent work visas.</td>
<td>N/A</td>
<td>N/A</td>
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<th>Can I become a citizen?</th>
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<th>Canada</th>
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<th>UK</th>
<th>France</th>
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<td><strong>Maybe.</strong> Only green card holders can become citizens. It could take graduates years or even decades to obtain a green card. Indian and Chinese graduates face the longest waits.</td>
<td>Yes. Graduates must be a permanent resident for at least three out of the five years preceding their application for citizenship; Time spent in Canada on a study permit can be counted toward the citizenship requirement as half time, for up to one year.</td>
<td><strong>Maybe.</strong> Graduates must have lived in Australia for four years, including one year of permanent residence status. Graduates may struggle to obtain permanent residence because it requires skilled work experience and many cannot find a skilled job on the post-study work visa.</td>
<td><strong>Maybe.</strong> Graduates must have lived in the UK for five years, including one year of permanent residency. While student visas do not lead to permanent residency, upcoming reforms may smooth the pathway for graduates to switch onto a general work visa, which can lead to permanent residency after five years.</td>
<td><strong>Yes.</strong> Graduates must have worked continuously in France for five years.</td>
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<th>Can my family members work?</th>
<th>U.S.</th>
<th>Canada</th>
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<td>No, family members cannot work.</td>
<td><strong>Yes, family members can work.</strong></td>
<td>Yes, family members can work.</td>
<td>Yes, family members can work.</td>
<td>Yes, family members can work.</td>
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he United States’ AI workforce is dynamic, booming in recent years due to advances in machine learning. Although the existence of a general STEM “skills gap” has been debated, current data indicates that for AI in particular, the gap is large and expected to grow. Considering that more than 50 percent of computer scientists employed in the United States are foreign born, as are about 65 percent of Silicon Valley computer and mathematics workers, it is clear immigrants play an important role in the U.S. AI workforce. As such, the United States must take every opportunity to maintain a competitive AI sector; a crucial aspect of this strategy is ensuring current immigration policies are best positioned to compete for AI talent.

This analysis defines foreign workers as individuals with higher education degrees who are employed or seeking employment in AI positions outside their country of origin. Immigration pathways for AI workers vary widely among the five countries analyzed. Much of the variation comes from structural differences between the countries’ systems. Australia and Canada use points-based systems to select employment-based immigrants; the points are tied to education, work experience, and known contacts in the country. The UK also uses a points system, but in practice, the system is effectively open to all applicants who meet the minimum threshold of requirements. The United States uses a lottery-based system to select highly skilled workers at random. France uses a more open system where any holder of a residence card is able to work.
KEY TAKEAWAYS

• **Canada**’s points-based Express Entry system manages applications for various work programs, designed for highly skilled workers. All programs within EE are uncapped, grant permanent residency, and are processed in six to nine months—significantly faster than in other countries. Canada can also process temporary work permits (also uncapped) in two to eight weeks.

• **France** grants tech workers four years of temporary residency and offers a clear and accessible path to permanent residency.

• The **United Kingdom**’s five-year Tier 2 (General) work visa is effectively uncapped due to exemptions, and highly skilled tech workers easily qualify. Visa holders may be eligible for permanent residency after working in the UK for five years.

• **Australia** offers many visa options for skilled workers. Temporary work visas can last two to four years. Permanent visas are also available to skilled workers, but are capped annually and those caps were recently reduced from 190,000 to 160,000.

• The **United States** offers the three-year H-1B temporary work visa, which is lottery-based and capped at 85,000. Depending on a worker’s country of origin, they may have to wait months, years, or decades to obtain permanent residency.

DISCUSSION

**Canada** is geographically well positioned to attract highly skilled workers from the United States, and has even erected billboards in Silicon Valley encouraging foreign nationals disillusioned by the U.S. immigration process to bring their skills north of the border. Its immigration system facilitates these efforts. Canada has no fixed cap on foreign-born workers (whether for temporary or permanent status) as long as applicants are competitive based on eligibility requirements. It offers multiple pathways for highly skilled technical workers to immigrate.

The Express Entry program processes applications granting permanent residency for workers in six to nine months. The system ranks workers based on factors such as age, educational credentials, and work experience; matches applicants to the appropriate work program; then issues invitations to apply for those who accrue the most points. Workers can also pursue the Provincial Nomination Program (PNP), which grants permanent residency and allows provinces to nominate workers with skills specifically needed in the province. Since 2015, EE has brought in 319,135 highly skilled workers. If a worker is not competitive for EE or PNP, or if EE or
PNP’s processing remains too long, they can pursue a work permit, conferring a temporary right to stay in Canada. In most cases, work permits are processed in less than 10 weeks; tech workers may also qualify for the Global Skills Strategy (GSS) fast-track program, which processes work permits for highly skilled occupations in less than two weeks. Individuals can earn extra points while on a work permit, increasing their competitiveness in the EE system. GSS has attracted 24,000 highly skilled workers to Canada since the program’s inception in 2017.

France offers a relatively open and clear immigration pathway for AI workers. In 2016, the French government created the French Tech Visa within the Talent Passport program. The visa serves as a residence permit allowing highly skilled and innovative workers to operate in France for four years. To apply, workers must secure a job for at least three months with a tech company eligible to recruit for the French Tech Visa. The Talent Passport offers a “shortcut” to a multiannual stay, foregoing the requirement for workers to obtain a one-year residence permit. The visa is uncapped and lasts four years with opportunity to renew. Unfortunately, the number of individuals who have been granted the French Tech Visa is not published, so the success of this program cannot be assessed here. After living in France for five continuous years, individuals may apply for either permanent residency or citizenship.

The United Kingdom technically caps its principal skilled worker visa, the Tier 2 (General) work visa, but in practice, the Tier 2 is effectively uncapped due to exemptions of highly desired occupations. For example, in October 2019, PhD-level occupations were exempted from the cap and most IT and engineering positions were added to the Shortage Occupation List, allowing employers to hire foreign workers without first searching for a qualified British candidate. As a result of these changes, 113,958 workers were granted the Tier 2 work visa in 2019, an 11 percent increase from 2018 and the highest number on record. The UK has proposed a broader overhaul of the skills-based immigration system—to be implemented in 2021—that will remove the cap on the Tier 2 visa altogether and abolish the domestic search requirement in all cases. These measures may create a clearer and more accessible pathway for AI workers.

Australia frequently introduces new work visa categories, eliminates existing ones, and changes numerical caps, making the system confusing to outsiders. Most permanent and temporary work visas in Australia require a nomination by an employer, state, or territory government. Selecting which visa to apply for depends on the position location and the specific occupation. In nearly all cases, however, applicants must score a minimum number of points on education, age, work experience, and other factors. Processing times vary from one month (for temporary visas) to eight months or more (for permanent visas). The most desir-
able visa to obtain is the subclass 189 visa, which grants permanent residency and the ability to work and move throughout Australia. Australia recently reduced its overall annual cap on permanent migration, but it remains unknown whether the reduction will significantly affect skilled applicants’ chances. For now, it’s unclear whether immigration through the subclass 189 visa is increasing or decreasing; from 2017 to 2018, 15,042 subclass 189 visas were granted and 22,403 recipients arrived (the discrepancy could be due to recipients arriving with visas granted in prior years), and from 2018 to 2019, 14,403 subclass 189 visas were issued and 13,896 recipients arrived.

The United States offers the three-year H-1B temporary work visa, which is distributed on a lottery-based system that randomly selects a limited number of recipients from a pool of qualified applicants. To apply for an H-1B visa, the most suitable temporary option for a majority of foreign workers, an individual must find a sponsor employer, who then completes an extensive and expensive administrative process on the worker’s behalf. The H-1B is capped at 85,000 per year, and there are hundreds of thousands of applications. Consequently, small companies and start-ups may not have the resources to compete for H-1Bs, especially if selection is not guaranteed, narrowing the pool of employers to larger companies able and willing to sponsor foreign nationals. As used in the broader tech sector, the H-1B program has attracted significant controversy, with critics alleging that it facilitates outsourcing, depresses wages, and crowds out native-born workers. The empirical evidence for these arguments is mixed and may not apply equally to specific, high-demand subfields within the tech sector, such as AI. Regardless, the H-1B remains an important resource for AI employers.

Those who secure H-1B temporary status can seek employment-based green cards, which confer permanent residency. However, permanent residency is numerically capped: each nationality receives no more than seven percent of the 140,000 employment-based green cards distributed annually. These caps have not changed in decades, though the sources of immigration have changed; for instance, Indian migration to the United States has significantly increased. In fact, of all the foreign workers in Silicon Valley, 25 percent originate from India. Yet the average wait time to even apply for an employment-based green card is 89 years for Indian nationals. The current Indian backlog is so severe that the Cato Institute predicts 205,665 Indians currently waiting for a green card will die before their application is processed.
### Foreign Worker Immigration Pathways

Answers are color-coded in red, yellow, green, or gray. Red indicates a policy that would significantly restrict AI talent from migrating in the first place or settling in the long term. Yellow reflects a moderately restrictive policy, and green indicates a policy favorable to incoming foreign-born AI talent. Gray indicates “not applicable” (for example, where the visa in question is unavailable in the given country).

<table>
<thead>
<tr>
<th>Question</th>
<th>U.S.</th>
<th>Canada</th>
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<tbody>
<tr>
<td><strong>Can I apply for a temporary work permit/visa without a job offer?</strong></td>
<td>No. 110</td>
<td>No. 111</td>
<td>No. 112</td>
<td>No. 113</td>
<td>No. 114</td>
</tr>
<tr>
<td><strong>How long can I stay on a temporary work permit/visa?</strong></td>
<td>Three to six years. Most AI workers would qualify for the H-1B temporary work visa, which lasts three years and can usually be renewed once. 115</td>
<td>No limit. The length of a worker’s temporary work permit is determined by their employer. 116</td>
<td>Four years, in most cases. Australia offers many short-term skilled work visas ranging from six months to four years. An AI worker would likely qualify for a two- to four-year visa. 117</td>
<td>Five to six years. Most workers need to obtain a Tier 2 (General) work visa, which lasts up to five years and can be extended by one year. 118</td>
<td>Four years. Most AI workers would qualify for the French Talent Passport, which lasts four years and can be renewed. 119</td>
</tr>
<tr>
<td><strong>Is the temporary work permit/visa uncapped?</strong></td>
<td>No. 120</td>
<td>Yes. 121</td>
<td>Yes. 122</td>
<td>Yes. 123</td>
<td>Yes. 124</td>
</tr>
<tr>
<td><strong>How long will my application for a temporary work permit/visa take to process?</strong></td>
<td>Several months to one year. Although application processing can be expedited for a fee, applicants must wait for the annual H-1B lottery. 125</td>
<td>Two to eight weeks. Processing times depend on the country from which a worker applies and the position they will fill. Work permits are issued throughout the year. 126</td>
<td>One to two months. Processing times depend on the work visa. Temporary work visas are issued throughout the year. 127</td>
<td>One day to 10 weeks. For most individuals applying from outside the UK, the process takes eight to 10 weeks. 128</td>
<td>One to three months. 129</td>
</tr>
<tr>
<td><strong>If I’m on a temporary work permit/visa, how soon can I apply for permanent residence?</strong></td>
<td>It depends. Workers do not need a work visa before applying. But current quotas result in varying wait times for workers originating from different countries. Workers from China and India may wait years or even decades before being allowed to apply for an employment-based green card. 130</td>
<td>Immediately, but chances are better if a worker waits at least a year to gain more experience and education before applying. 131</td>
<td>Three years, for most temporary workers. Some temporary work visas do not have a path to permanent residency, but workers could later switch to another temporary visa that does. 132</td>
<td>Five years. 133</td>
<td>Five years. 134</td>
</tr>
<tr>
<td>U.S.</td>
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<tr>
<td><strong>How can I gain permanent residency?</strong></td>
<td>Sponsored workers may apply for an employment-based green card, but these are capped at 140,000 annually (including dependents) and subject to a seven percent per-country quota. Some workers may have to wait years or decades to apply.</td>
<td>Workers may apply to Express Entry, which operates on a points-based system and grants permanent residency to highly skilled workers. Some applicants may struggle to meet the points threshold, as it varies depending on the relative skills of other applicants.</td>
<td>Workers may apply for one of Australia’s permanent work visas. Most require a nomination from an employer, state, or territory government.</td>
<td>Workers may apply for indefinite leave to remain, or permanent residency, after working in the UK for five years.</td>
<td>Workers may apply for permanent residency after working in France for five years.</td>
</tr>
<tr>
<td><strong>Can I apply for permanent residency without a job offer?</strong></td>
<td><strong>Maybe.</strong> Skilled workers likely qualify for the EB-2 or EB-3 employment-based green cards, which require an employer sponsor. The EB-1 employment-based green card does not require a sponsor, but is reserved for extraordinary talent.</td>
<td><strong>Yes.</strong> Workers applying through the Express Entry system do not need a job offer.</td>
<td><strong>Maybe.</strong> Some permanent work visas require a job offer and others do not. The visa workers apply for depends on their position and/or the location of their job.</td>
<td><strong>Yes.</strong> A job offer is not required to apply for permanent residency. However, workers must have lived or worked in the UK for five years before applying.</td>
<td><strong>Yes.</strong> A job offer is not required to apply for permanent residency. However, workers must have lived or worked in France for five years before applying.</td>
</tr>
<tr>
<td><strong>How long will my permanent residence application take to process?</strong></td>
<td><strong>Ten to 19 months.</strong></td>
<td><strong>Five to nine months.</strong></td>
<td><strong>Eight to 18 months.</strong></td>
<td><strong>One day to six months.</strong></td>
<td><strong>Unknown.</strong></td>
</tr>
<tr>
<td><strong>Can I apply for permanent residency without previously holding temporary work status?</strong></td>
<td><strong>Maybe.</strong> While you can apply without previous work status, in practice, virtually all applicants already have temporary status, since employers prefer to sponsor employees already working in the United States.</td>
<td><strong>Yes.</strong> It is possible and common for highly skilled workers to apply for a permanent work visa without previously holding temporary status.</td>
<td><strong>Yes.</strong> It is possible and common for highly skilled workers to apply for a permanent work visa without previously holding temporary status.</td>
<td><strong>No.</strong> To get permanent residency, workers must have legally worked in the UK for at least five years.</td>
<td><strong>No.</strong> To get permanent residency, workers must have legally worked in France for at least five years.</td>
</tr>
<tr>
<td><strong>Can I become a citizen?</strong></td>
<td><strong>Yes.</strong> Workers are eligible to apply after five years of permanent residence status. However, current caps on employment-based green cards could effectively bar many from obtaining permanent residence.</td>
<td><strong>Yes.</strong> Workers are eligible to apply after five years of living in Canada, including three years of permanent residence status.</td>
<td><strong>Yes.</strong> Workers are eligible to apply after four years of living in Australia, including one year of permanent residence status.</td>
<td><strong>Yes.</strong> Workers are eligible to apply after five years of living in the UK, including one year of permanent residence status.</td>
<td><strong>Yes.</strong> Workers are eligible to apply after five years of continuous residence.</td>
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<td>U.S.</td>
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<tr>
<td><strong>Can my family members work?</strong></td>
<td>No, family members generally cannot work.160</td>
<td>Yes, family members can work.161</td>
<td>Yes, family members can work.162</td>
<td>Yes, family members can work.163</td>
<td>Yes, family members can work.164</td>
</tr>
<tr>
<td><strong>Can I change jobs?</strong></td>
<td>Maybe. For those on temporary visas, changing jobs requires USCIS approval, which may be withheld.165</td>
<td>Maybe. Workers may switch jobs if they are on an open permit. If a worker is on an employer-sponsored permit, they will need to find a new sponsor for the new position.166</td>
<td>Maybe. Workers may switch jobs if they are on an independent visa. If a worker is on an employer-sponsored visa, they must find another sponsor.167</td>
<td>Maybe. Changing jobs requires applying for another Tier 2 visa and Home Office approval.168</td>
<td>Yes, after two years of working with the initial employer.169</td>
</tr>
<tr>
<td><strong>Can I stay if I lose my job?</strong></td>
<td>Maybe. If a worker is on the H-1B visa, they must leave within 60 days. However, if the worker has an employment-based green card, they can stay indefinitely.170</td>
<td>Yes. Workers may stay until their work permit expires, which is determined by the employer. Workers may find a new employer to sponsor a new permit before their current permit expires.171</td>
<td>Maybe. Generally, if workers are on a sponsored temporary work visa, they have 60 days to either find a new employer, be granted a different visa, or leave.172</td>
<td>Maybe. The Home Office will issue a 60-day notice for the worker to leave the UK or find a new job. If the worker finds a new job, they must apply to have their sponsorship transferred to the new employer.173</td>
<td>Yes. Workers may stay until their residence card expires or they find a new job.174</td>
</tr>
</tbody>
</table>
Distinguished AI workers represent a relatively small talent population but will be a critical asset to any country’s AI advancements. This report defines distinguished workers as individuals already internationally recognized for their achievements in AI or related fields, as evidenced (for example) by major AI-related prizes, patents, or publications. These workers are scarce, perhaps numbering in the thousands or low tens of thousands worldwide. Many countries have favorable immigration policies for these individuals, but applicable regulatory criteria are often vague and subjective, making distinguished talent visas uniquely complex and challenging for prospective applicants. This presents an opportunity for the United States, the UK, and Australia to specify eligibility criteria geared toward attracting high-demand AI talent.

KEY TAKEAWAYS

- **Canada** and **France** do not offer and do not need specific visas for exceptional talent; each country already has one or more uncapped work visa programs that can quickly and easily bring in exceptionally skilled individuals.

- **Australia’s** Distinguished Talent visa, which grants permanent residency, used to attract about 100 individuals annually. In an effort to increase awareness of the visa, Australia launched the Global Talent Program in November 2019 to actively recruit talent across seven sectors, including advanced digital and data science.

- The **United Kingdom** offers the uncapped Global Talent Visa, which aims to attract STEM talent by expediting the application
process, offering recipients a fast track to permanent residency and granting their dependents work rights. However, the Global Talent Visa is new and it remains to be seen what successes or challenges applicants may experience.

- The **United States** offers the O-1 temporary visa and EB-1 employment-based green card to those who have demonstrated exceptional talent in a particular field. Thousands of immigrants enter the United States on O-1 visas each year and can later apply for the EB-1 or apply for the EB-1 directly. However, processing times for the EB-1 could take several years due to backlogs.

**DISCUSSION**

The United States, UK, and Australia offer special distinguished talent visas. Canada and France have no need for such visas as their general worker visa programs easily and quickly accommodate distinguished workers. Any internationally recognized AI worker would very likely qualify for permanent residence in Canada through Express Entry or for the uncapped Talent Passport in France.

In **Australia**, uncapped Distinguished Talent visas are available to individuals with internationally recognized achievements in certain target sectors, including data science and cybersecurity. Recipients of these visas automatically receive permanent residency and may apply for citizenship after one year. But given limited knowledge about the visa, from 2017 to 2018, only 109 individuals migrated to Australia on Distinguished Talent visas; from 2018 to 2019, that number dropped to 70. In an effort to increase these numbers, the Australian government is boosting outreach efforts, including placing talent recruiters overseas and providing personalized service to visa candidates.

The **United Kingdom** recently introduced the Global Talent visa for recognized and emerging leaders and top research scientists. Recognized leaders are those who have achieved national or international acclaim, while emerging leaders are those who demonstrate future potential. All applicants must be endorsed by an approved endorsing body before applying to the Global Talent visa, and the endorsement process could take up to eight weeks to process (though technologists and research scientists are promised faster processing). The Global Talent visa also includes a separate, fast-tracked pathway for research scientists. This pathway is uncapped. Applicants need an endorsement, but not a job offer to apply. Additionally, research scientists and their dependents are exempted from certain restrictions related to foreign travel for work-related purposes, ensuring they are not disadvantaged during the permanent residency process (previous rules restricted prolonged absence outside the UK).
Since the Global Talent visa replaced the Tier 1 (Exceptional Talent) visa in February 2020, there is little known about the successes or failures of the new pathway. However, the two visas share many similarities, so the results of the Tier 1 visa may indicate how the Global Talent visa will fare in the future. The Tier 1 visa was capped at 2,000 (though the cap was never reached), with 200 spots reserved for digital technologists and a possibility for more to be granted within the 2,000 cap. From 2018 to 2019, there was a 50 percent increase in Tier 1 (Exceptional Talent) visas granted (1,176), and nearly half were granted to digital technology applicants. This trend indicates that under the prior system, the UK was experiencing an influx of technical talent; the new features of the Global Talent visa may bolster this growth.

In the United States, immigrants with “extraordinary talent” may apply for the O-1 temporary visa or the EB-1 employment-based green card. An individual seeking an O-1 must demonstrate “sustained national or international acclaim” through highly selective or prestigious awards, degrees, or affiliations. While uncapped, the criteria for O-1 eligibility are vague, dependents of the O-1 visa holder cannot work, and the recipient may have to wait several years to obtain an employment-based green card if seeking to stay permanently. In 2018, 16,904 individuals were granted O-1 visas and in 2019, the number rose to 17,751—the highest level within the past five years. Exceptional talent can also apply directly to the EB-1 green card, which grants permanent residency but is subject to an annual 40,040 cap (including dependents). As a result, processing times for the EB-1 typically exceed that of the O-1 visa.
Distinguished Talent Immigration Pathway

Answers are color-coded in red, yellow, green, or gray. Red indicates a policy that would significantly restrict AI talent from migrating in the first place or settling in the long term. Yellow reflects a moderately restrictive policy, and green indicates a policy favorable to incoming foreign-born AI talent. Gray indicates “not applicable” (for example, where the visa in question is unavailable in the given country).

<table>
<thead>
<tr>
<th>Does this country offer a visa for especially talented or accomplished workers?</th>
<th>U.S.</th>
<th>Canada</th>
<th>Australia</th>
<th>UK</th>
<th>France</th>
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<tr>
<td>Yes. The O-1 temporary visa and EB-1 employment-based green card are available to individuals of “extraordinary ability.”</td>
<td>Yes. While there is no distinguished talent visa specifically, exceptionally talented individuals will have a strong advantage in the general system and may also qualify for provincial fast-track programs.</td>
<td>Yes. The subclass 124 &amp; 858 Distinguished Talent permanent visas are available only for people who are internationally recognized with exceptional achievements in an eligible field.</td>
<td>Yes. The Global Talent Visa is available for recognized or emerging experts and research scientists endorsed by the UK Research and Innovation (UKRI) or Tech Nation.</td>
<td>Yes, while there is no distinguished talent visa specifically, exceptionally talented tech workers could easily obtain a Talent Passport, which lasts for four years with the opportunity for renewal.</td>
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</table>

| Can I apply to the distinguished talent visa without a job offer? | Maybe. The O-1 temporary visa is almost always employer sponsored. The EB-1 employment-based green card allows “self-petitioning,” but is relatively uncommon in practice. | N/A. | Maybe. Applicants do not need a job offer, but they must be nominated by an Australian citizen, permanent resident, or Australian organization with a renowned reputation in the field. | Maybe. Applicants do not need a job offer, but they need an endorsement, which requires an extensive application demonstrating expertise and could take up to eight weeks to process. | N/A. |

| Is this visa uncapped? | It depends. O-1 temporary visas are uncapped. However, EB-1 employment-based green cards are capped at roughly 40,000 per year, including applicants’ dependents. Some nationalities face further delays. | N/A. | No. The Distinguished Talent visas are included in the 160,000 cap on permanent migration. | N/A. |

| How quickly are visa applications processed? | Six to seven months for O-1, with further delays possible; 18 to 20 months for the EB-1 green card. | N/A. | Unknown due to low volume of applications. | Eleven weeks, including receiving the endorsement and processing the visa application. Applicants with technical skills are promised faster processing times, so this number could be lower for many. | N/A. |

| Can my family members work? | Maybe. Dependents of the O-1 visa cannot work, while dependents of the EB-1 visa can work. | N/A. | Yes, your family members can work. | N/A. |

<p>| Can I switch jobs? | Maybe. Those on O-1 status will likely fulfill the requirements for the EB-1 employment-based green card, which has a relatively short wait time compared to other employment-based green card categories, but entails a lengthy and uncertain application process. | N/A. | Yes. | N/A. |</p>
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<tr>
<th>How long can I stay?</th>
<th>U.S.</th>
<th>Canada</th>
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<tr>
<td>Three years on the O-1, though extensions may be available in some cases. <strong>Permanently</strong> on the EB-1 green card.</td>
<td>N/A.</td>
<td>Permanently</td>
<td><strong>One to five years</strong>, with the unlimited opportunity to extend for additional terms of one to five years.</td>
<td>N/A.</td>
<td></td>
</tr>
<tr>
<td>Can I transition to permanent residence?</td>
<td><strong>Maybe.</strong> Those on O-1 status will likely fulfill the requirements for the EB-1 employment-based green card, which has a relatively short wait time compared to other employment-based green card categories, but entails a lengthy and uncertain application process.</td>
<td>N/A.</td>
<td>Yes. This visa automatically grants permanent residency.</td>
<td>Yes. STEM applicants can apply for permanent residency after three years.</td>
<td>N/A.</td>
</tr>
<tr>
<td>Can I become a citizen?</td>
<td><strong>Maybe, eventually.</strong> Once an applicant obtains a green card, they will be eligible for citizenship after five years.</td>
<td>N/A.</td>
<td>Yes. Applicants may be eligible for citizenship after four years of living in Australia, including one year of permanent residency.</td>
<td>Yes. Applicants may apply for citizenship after five years, including one year of permanent residency.</td>
<td>N/A.</td>
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The United States’ innovative and risk-tolerant environment has attracted entrepreneurs from around the world. In fact, immigrants are twice as likely to start businesses as native-born citizens and start-ups typically yield almost 30 percent of gross employment gains for Americans each year. However, the United States does not offer an entrepreneur visa, and immigrants with entrepreneurial aspirations sometimes attempt to start businesses on different visa statuses, such as the F-1 student visa or the H-1B temporary worker visa. Unfortunately, stretching these visas to fit an entrepreneur’s needs and activities can pose challenges.

This report defines entrepreneurs as individuals leaving their country of origin to start AI-related businesses. Although Canada, France, Australia, and the UK offer tailored visas for these individuals, most of the relevant programs are new, and applicants and recipients have encountered challenges that often push them to pursue alternative visas. To this end, the United States can further strengthen its AI competitiveness by learning from these flawed visas—such as unrealistic business metrics and long processing times—to design one that actually works for entrepreneurs.

**KEY TAKEAWAYS**

- **Canada** offers a start-up visa that immediately grants permanent residency to entrepreneurs who have established or intend to establish a qualifying business, which is determined by an endorsement from Canadian industry. Strikingly, if the entrepreneur’s business fails, they will not lose permanent residency status. However, the endorsement process has attracted criticism due to poten-
tial industry biases. Stringent application requirements and long processing times have also deterred applications.

- **Australia** offers two entrepreneur visas and an opportunity to extend and eventually apply for permanent residency if the visa holder’s business remains successful after four to six years. However, as of early 2019, very few immigrants have applied to these visas.

- The **United Kingdom** has two new visa options for entrepreneurs, depending on their level of experience. Experienced entrepreneurs have a clear pathway to permanent residency, while less experienced entrepreneurs must demonstrate business success before applying for permanent residency. However, as of late 2019, the application processes still are not finalized, pushing many entrepreneurs to seek other visa options.

- **France** offers a start-up visa for entrepreneurs with business plans endorsed by approved incubators or accelerators. However, little is known about how challenging it is to gain endorsement. The visa lasts for four years and is renewable, allowing the entrepreneur to apply for permanent residency after living in France for five years.

- **The United States** is the only country in this comparison that does not offer a visa specifically for entrepreneurs. Many entrepreneurs from other countries have overcome this obstacle to start businesses in the United States, but immigration obstacles have likely blocked many others. The United States should incorporate the lessons learned from failed visas in competitor countries and build on enduring U.S. strengths by creating an entrepreneur visa targeted to the American system, removing obstacles for foreign-born entrepreneurs and generating new jobs.

**DISCUSSION**

In the past few years, every country in this comparison except for the United States has introduced a start-up visa. The results have been mixed. For example, although Canada’s start-up visa has many attractive features (including automatic permanent residency for recipients), it falls short in practice. Canadian immigration lawyers have stated they no longer refer clients to the start-up visa due to the lengthy and costly process. From 2013 to 2016, only 100 immigrants (including entrepreneurs and their dependents) migrated to Canada on the start-up visa. The visa’s endorsement process, which requires applicants to secure support from private-sector investor groups, has yielded significant criticism due to biases of endorsement organizations. If they are willing to migrate to specific provinces,
entrepreneurs may have other options: some provinces, such as British Columbia and Manitoba, have special fast-track programs for entrepreneurs and businesspeople.  

**Australia** has several start-up visas, though none have gained traction. The subclass 188 Entrepreneur Stream is a temporary visa that allows an entrepreneur to stay for four years. In order to obtain permanent residency, entrepreneurs must demonstrate business success on the subclass 188 before applying to the subclass 888 Entrepreneur Stream, which grants permanent residency. From its introduction in September 2016 through January 2019, only 25 subclass 188 applications were submitted and eight granted. Immigration practitioners have attributed these low numbers to high business funding requirements, long processing times, and general lack of awareness of the visas. The province of South Australia is currently testing an entrepreneur visa with lower funding requirements for businesses in very early stages. If successful, the Australian government intends to roll out the visa program nationwide.

In the **United Kingdom**, entrepreneurs face similar challenges. As of March 2019, there are two UK entrepreneur visas: the Start-Up Visa and the Innovator Visa. The Start-Up visa is a temporary visa designed for early-stage, high-potential entrepreneurs, whereas the Innovator Visa is geared toward more experienced entrepreneurs. Both routes require endorsements by an approved endorsing organization. Once on the Innovator Visa, an entrepreneur may become eligible for permanent residency after three years. Both visas were launched in March 2019, replacing the Tier 1 (Graduate Entrepreneur and Entrepreneur) visas. The new visas have been heavily criticized because of the suboptimal endorsement system and the difficulty of transitioning to permanent residence. In fact, in the first three months after the Innovator Visa launched, only four individuals applied, compared to the 1,900 applications for the earlier Tier 1 (Entrepreneur) visa in 2018. Experienced entrepreneurs may be able to pursue a Tier 1 (Exceptional Talent) visa instead, but early-career entrepreneurs have few other options.

**France’s** French Tech Visa program includes a special track for start-up founders. To qualify, entrepreneurs must develop an economically innovative business plan reviewed and supported by a French Tech Visa partner incubator or accelerator. The French Tech Visa lasts four years and is renewable. After five years of continuously living in France, an entrepreneur may be eligible for permanent residence or citizenship. Little information is available on how the “economically innovative business plan” requirement is applied, how challenging the process is to secure support from an incubator or accelerator, or how many applicants the program has attracted.
The United States stands out for its lack of a special visa for international entrepreneurs. To address this omission, the Obama administration in January 2017 enacted the International Entrepreneur Rule (IER), which used preexisting statutory authority to allow select entrepreneurs into the country temporarily. However, the Trump administration effectively blocked the rule in July 2017 and has since proposed formally eliminating it. Without other options, immigrant entrepreneurs in the United States seek alternative visas such as the employer-sponsored, investor, or student visas, depending on personal circumstances. Since these visas are not designed for entrepreneurs, many founders struggle to qualify for them or balance the requirements of the visa with the demands of starting a business.
Entrepreneur Immigration Pathways

Answers are color-coded in red, yellow, green, or gray. Red indicates a policy that would significantly restrict AI talent from migrating in the first place or settling in the long term. Yellow reflects a moderately restrictive policy, and green indicates a policy favorable to incoming foreign-born AI talent. Gray indicates “not applicable” (for example, where the visa in question is unavailable in the given country).

<table>
<thead>
<tr>
<th>Does this country offer a start-up or entrepreneur visa?</th>
<th>U.S.</th>
<th>Canada</th>
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<th>UK</th>
<th>France</th>
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<tr>
<td>No. 216</td>
<td>Yes. However, few entrepreneurs apply due to long processing times and high funding thresholds. 237</td>
<td>Yes. However, very few entrepreneur visas have been applied for or issued, indicating that many entrepreneurs do not pursue entrepreneur-specific visas. 218</td>
<td>Yes. There is an early-career Start-Up visa and more experienced Innovator visa. Both require applicants to have their business plan endorsed, but this process is not fully operational, deterring many from applying. 239</td>
<td>Yes, if the applicant has been accepted to an approved institution. 240</td>
<td></td>
</tr>
<tr>
<td>How long can I stay?</td>
<td>N/A.</td>
<td>Permanently. 241</td>
<td>Four years and three months, with the option to convert to permanent residency if the business succeeds. 242</td>
<td>Two to five years. The early-career Start-Up visa lasts for two years and is designed for less experienced entrepreneurs. More experienced entrepreneurs and those who proved successful on the early-career visa may apply to the Innovator visa and stay for three years with a path to permanent residency. 243</td>
<td>Four years, with potential for renewal. 244</td>
</tr>
<tr>
<td>How long will the visa take to process?</td>
<td>N/A.</td>
<td>One year to 16 months. 245</td>
<td>Unknown, due to low volume of applications. 246</td>
<td>Three weeks. However, entrepreneurs must be endorsed by an approving body before their application is processed, which could add time. 247</td>
<td>Up to three months. 248</td>
</tr>
<tr>
<td>Can I gain permanent residency?</td>
<td>N/A.</td>
<td>Yes. The visa is permanent by default. 249</td>
<td>Yes. Entrepreneurs may apply for permanent residency after holding the temporary entrepreneur visa for four years if their business has demonstrated success. 250</td>
<td>Yes. Entrepreneurs may be eligible for permanent residency after five years of living/working in the UK. 251</td>
<td>Yes. Entrepreneurs may apply for permanent residency after five years of continuous residence. 252</td>
</tr>
<tr>
<td>Can I become a citizen?</td>
<td>N/A.</td>
<td>Yes. Most are eligible to apply after five years of living in Canada. 253</td>
<td>Yes. Most are eligible to apply after four years of living in Australia. 254</td>
<td>Yes. Most are eligible to apply after five years of living in the UK. 255</td>
<td>Yes. Most are eligible to apply after five years of continuous residence. 256</td>
</tr>
<tr>
<td>Can my family members work?</td>
<td>N/A.</td>
<td>Yes. Family members who want to work or study must apply for the appropriate permits, which are easy to obtain. 257</td>
<td>Yes. Family members can work or study. 258</td>
<td>Yes. Family members must apply for dependent visas, which allow them to work. 259</td>
<td>Yes. Family members can work. 260</td>
</tr>
<tr>
<td>What if my start-up doesn’t work out?</td>
<td>N/A.</td>
<td>Applicant’s immigration status is not affected. 261</td>
<td>Applicants must either start a new business, seek a new visa, or leave the country once their entrepreneur visa expires. 262</td>
<td>Entrepreneurs must apply for a new endorsement for a new business before their original visa expires. 263</td>
<td>An applicant may switch to another legal status (if they fulfill the applicable conditions) or stay until their Talent Passport expires. 264</td>
</tr>
</tbody>
</table>
From its exceptional higher education institutions to its booming industry, the United States has been a beacon for the world’s best and brightest since World War II. In recent years, other countries have demonstrated their eagerness to tap into the same globally mobile skilled workforce through specially designed immigration programs. An AI strategy includes many factors and immigration is a crucial one that cannot be overlooked. As the United States continues to work to maintain AI leadership, it must also explore how to strengthen immigration policies and adapt to a growing competitive environment for AI talent. To this end, the United States should consider the following options:

**Improving temporary visa options:** The current cap and distribution method for the H-1B temporary work visa hinders AI talent from contributing their full potential to the U.S. workforce. This is especially true for workers seeking permanent residency while on H-1B status, which makes switching positions or employers a challenging feat as the worker would need another sponsorship. Further, the H-1B lottery occurs only once a year, forcing employers to wait until the annual draw on April 1 to learn whether critical employees have been selected. The United States could evaluate Canada’s system and consider removing caps on temporary work visas for specific groups of high-demand tech workers and distribute those visas year-round.

**Expanding opportunities for permanent residency:** The United States imposes numerical caps on permanent residency status. In addition to overall caps that have not changed for decades, employment-based green cards are subject to a seven percent per-country quota. This restric-
tion has yielded especially long wait times for workers from India and China because most of the U.S. foreign technical workforce originates from these countries. In contrast, France and Canada do not have numerical caps on permanent residency status. In France, anyone who has legally lived in the country for five continuous years may apply for either permanent residency or citizenship. Canada’s Express Entry system allows highly qualified workers to apply directly for permanent residency, even without a job offer. The United States should reconsider outdated caps on green cards to facilitate targeted immigration of AI-skilled workers. This could be done by either raising numerical caps, creating variable numerical caps, exempting qualified AI talent from the caps, or eliminating per-country caps, allowing AI talent meeting permanent residency criteria to obtain it.

**Expanding opportunities for entrepreneurs:** The United States currently lacks an entrepreneur visa. While the other countries’ entrepreneur visas have proven flawed, the United States could learn from their weaknesses—including unrealistic metrics for business success and long processing times—and build on its enduring strength to develop a new entrepreneur visa that attracts talent from around the world. In so doing, entrepreneurs will seek opportunities and grow vibrant, job-creating companies in the United States rather than in key competitor nations.

As industries across all sectors begin adopting AI, these measures will strengthen the U.S. ability to recruit the necessary talent to meet growing demand for AI skilled workers and researchers. The United States has always uniquely attracted global talent and should complement this strength with targeted immigration policies. While immigration is only one of many factors in the United States’ overall AI posture, it is a crucial component if America aspires to maintain global AI leadership.
Selected Reading

Sources on U.S. immigration law

Sources on foreign-born talent in the United States

Sources on science and engineering in the United States
Selected sources on foreign-born talent in other countries


1. We use the term “immigrants” colloquially in this paper, referring to individuals who originate outside the United States and are studying or working in the United States. U.S. immigration law distinguishes between permanent “immigrants” (i.e., green card holders) and temporary “nonimmigrants.” See “What is the Difference Between and Immigrant Visa vs. Nonimmigrant Visa?,” U.S. Customs and Border Protection, https://help.cbp.gov/app/answers/detail/a_id/72/~/what-is-the-difference-between-an-immigrant-visa-vs.-nonimmigrant-visa-%3F.


4. There are academic debates about whether a shortage of STEM workers exists in the United States. While not all STEM fields are experiencing a shortage of workers or researchers, this does not appear to hold true for artificial intelligence. AI is a relatively emerging field due to recent advances in deep machine learning. Consequently, demand for AI workers has quickly risen while the supply of workers has not. Education pipelines are not flexible enough to meet the increased demand in the immediate future. Eventually, markets will adjust (through domestic education programs and other similar efforts), but in the short term, the world will experience an AI talent shortage. See Bernard Marr, “The AI Skills Crisis and How to Close the Gap,” Forbes, June 25, 2018, https://www.forbes.com/sites/bernardmarr/2018/06/25/the-ai-skills-crisis-and-how-to-close-the-gap/#7c3e0a7e31f3; Remco Zwetsloot, Roxanne Heston, and Zachary Arnold, “Strengthen the U.S. AI Workforce” (Center for Security and Emerging Technology, September 2019), 1-2, https://cset.georgetown.edu/wp-content/uploads/CSET_U.S._AI_Workforce.pdf; Michael Teitelbaum, Falling Behind?: Boom, Bust, and the Global Race for Scientific Talent (Princeton, NJ: Princeton University Press, 2014).


7. It is important to note that there will likely be shifts in immigration flows and policies as a result of the COVID-19 pandemic, which developed after this paper was written. Current immigration trends
may accelerate, slow, or stop altogether depending on how countries are currently coping with the pandemic and their recoveries post-pandemic.

8. The legal conditions delineated in this report regarding France and the United Kingdom apply only to non-EU nationals.


10. Efforts are underway to increase the domestic AI workforce in the United States, which are necessary but not sufficient to ensure America’s long-term AI leadership. When it comes to innovation in emerging technologies, absolute numbers of scientists and engineers play a pivotal role. China’s efforts to expand its domestic AI talent pipeline may exceed that of the United States simply because China’s population is four times that of the United States. See Remco Zwetsloot and Dahlia Peterson, “The US-China Tech Wars: China’s Immigration Disadvantage,” The Diplomat, December 31, 2019, https://thediplomat.com/2019/12/the-us-china-tech-wars-chinas-immigration-disadvantage/; “Join the Movement to Bring Computer Science to ALL Students,” CS for ALL, last accessed April 14, 2020, https://www.csforall.org/.


19. Many undergraduates who apply to the PGWP struggle to find highly skilled jobs that would make them competitive for Express Entry. Unfortunately, if these graduates pursue a Canadian master’s or PhD program, they are unable to re-apply for PGWP, meaning they must either find a job immediately after graduation or leave Canada. Stephanie Fraser, MA Immigration and Settlement Studies, email to author, November 14, 2019; Also see “Work in Canada After You Graduate: Who Can Apply,” Government of Canada, last updated October 3, 2019, https://www.canada.ca/en/immigration-refugees-citizenship/services/study-canada/work/after-graduation/eligibility.html.


22. Further discussed in the “Worker” section.


45. In some exceptions, students may be able to work off-campus. See “Other U.S. Student Visas,” Exchange Visitor Program, last accessed December 9, 2019, https://j1visa.state.gov/basics/other-u-s-visas/.


57. Stephanie Chu, Australia Global Talent Officer for North America, email to author, October 28, 2019.


69. Dependents of students in master’s degrees or higher have full work rights, see “Australian Visas for Partners and Families,” StudyOptions, last accessed December 11, 2019, https://www.studyoptions.com.australian-visas-partners-and-families.


75. Kim Vowden, Senior Associate at Kingsley Napely LLC, email to author, November 8, 2019


80. The PNP application can be processed either through EE or at the provincial level, though the latter has a longer processing time of 12 to 16 months. See “How the Provincial Nominee Program (PNP) Works,” Government of Canada, last updated March 21, 2019, https://www.canada.ca/en/immigration-refugees-citizenship/services/immigrate-canada/provincial-nominees/works.html.


83. The Global Skills Strategy reduces the processing time for workers to two weeks if they worker: 1) is applying outside Canada; 2) is exempt from the LMIA requirement, where employers demonstrate that Canadian citizens cannot fill the roles; 3) the position is listed in the NOC 0 or A occupation lists for the highly skilled and; 4) the work permit is employer specific and the employer has submitted the appropriate paperwork. See “Global Skills Strategy: About the Process,” Government of Canada, last updated March 18, 2018, https://www.canada.ca/en/immigration-refugees-citizenship/services/work-canada/hire-foreign-worker/temporary/global-skills-strategy.html; Further, some employers can recruit highly-skilled tech workers through the Global Talent Stream, which also grants work permits and promises “timely, responsive, and predictable client-focused service” to assist employers in building a skilled workforce. See “Program Requirements for the Global Talent Stream,” Government of Canada, last updated November 25, 2019, https://www.canada.ca/en/employment-social-development/services/foreign-workers/global-talent/requirements.html; “Hire a Top Foreign Talent Through the Global Talent Stream,” Government of Canada, last updated November 25, 2019, https://www.canada.ca/en/employment-social-development/services/foreign-workers/global-talent.html.


89. According to the Campaign for Science and Engineering, from December 2017 to March 2018, 6,080 Tier 2 applicants were rejected due to the cap (20,700), 1,638 of which were in engineering or technology roles. In response, the United Kingdom removed doctors and nurses (1,880 of which were rejected) from the cap in July 2018 and the cap is rarely reached. See “UK Government Moves to Exempt Doctors and Nurses from Tier 2 Visa Cap, Freeing Up Visas for Other Sponsors,” EY, June 2018, https://www.ey.com/gl/en/services/people-advisory-services/hc-alert--uk-government-moves-to-exempt-doctors-and-nurses-from-tier-2-visa-cap--freeing-up-visas-for-other-sponsors.


102. We focus on H-1B status in this paper because it is the most common visa pathway for highly skilled workers. There may be a smaller AI worker population that may use more specialized visas such as Ls and Js.

103. The H-1B Visa Program: A Primer on the Program and Its Impact on Jobs, Wages, and the Economy,” (American Immigration Council, 2019), 2, https://www.americanimmigrationcouncil.org/sites/default/files/research/the_h-1b_visa_program_a_primer_on_the_program_and_its_impact_on_jobs_wages_and_the_economy.pdf; Further, many reforms to the H-1B program have been rejected. For example, in 2013 the Senate introduced a bill, which would have increased the H-1B cap, that was later rejected in the House. See Border Security, Economic Opportunity, and Immigration Modernization Act, S. 744, 113th Cong. (2013 – 2014).


105. The H-1B program has been criticized in light of IT services companies using the program to hire foreign nationals for entry-level work, hurting employment and income prospects for Americans. These criticisms have resulted in high-profile lawsuits against such companies. See Nicole Torres, “The H-1B Visa Debate, Explained,” Harvard Business Review, May 4, 2017, https://hbr.org/2017/05/the-h-1b-visa-debate-explained.

106. Workers may also apply directly to an employment-based green card but this is less common.


120. The 85,000 cap includes the 20,000 master’s degree or higher petitions who are exempted from the 65,000 cap. See “H-1B Specialty Occupations, DOD Cooperative Research and Development Project Workers, and Fashion Models,” U.S. Citizenship and Immigration Services, last updated March 19, 2019, https://www.uscis.gov/working-united-states/temporary-workers/h-1b-specialty-occupations-dod-cooperative-research-and-development-project-workers-and-fashion-models.

121. Stephanie Fraser, MA Immigration and Settlement Studies, email to author December 16, 2019.

122. Stephanie Chu, Australia Global Talent Officer for North America, email to author, October 28, 2019.

123. Kim Vowden, Senior Associate at Kingsley Napley LLP, email to author, November 11, 2019.


130. Bier, “Backlog for Skilled Immigrants Top 1 Million.”


167. Stephanie Chu, Australia Global Talent Officer for North America, Email to author, October 28, 2019


Bruno Cruchant, Migration counsellor at the French Permanent Representation to the European Union, email to author, November 29, 2019.


188. Stephanie Fraser, MA Immigration and Settlement Studies, email to author, January 2, 2020.


220. Critics charge that these groups are biased when selecting endorsees and take too long to process requests for endorsement; Stephanie Fraser, MA Immigration and Settlement Studies, email to Tina Huang, November 17, 2019.


227. UK Visas and Immigration, Start-up Endorsing Bodies, (United Kingdom, October 25, 2019), https://www.gov.uk/government/publications/endorsing-bodies-start-up/start-up; UK Visas and

228. Applicants who are not qualified for the Innovator visa can apply to the Start-Up visa and transition to the Innovator Visa after two years if their business succeeds. If entrepreneurs obtained the Innovator visa first, they must renew their Innovator visa to meet the five-year minimum to be eligible for permanent residency. See Saadiya Saadat, “The UK’s New Start-up and Innovator Visas: A Detailed Explanation of How They Work,” Investment Migration Insider, April 20, 2019, https://www.imidaily.com/europe/the-uk-s-new-start-up-and-innovator-visas-a-detailed-explanation-of-how-they-work/.


255. One of the five years must be on permanent residence status in order to be eligible for citizenship. See “Check if you can become a British citizen,” UK Government, last accessed December 9, 2019, https://www.gov.uk/british-citizenship.


258. Stephanie Chu, Australia Global Talent Officer for North America, email to author, October 23, 2019;

259. Kim Vowden, Senior Associate at Kingsley Napley LLC, email to author, October 20, 2019;


262. Stephanie Chu, Australia Global Talent Officer for North America, email to author, October 28, 2019.

263. Kim Vowden, Senior Associate at Kingsley Napley LLC, email to author, October 20, 2019.
