BROOKINGS

RESEARCH

Mapping the AI economy: Which regions are ready for the next technology leap

Mark Muro and Shriya Methkupally

July 16, 2025

- → Artificial intelligence is transforming the U.S. economy, yet regional disparities in talent development, research capacity, and enterprise adoption are stark, and not yet fully understood.
- → AI activity remains highly concentrated, with the Bay Area alone accounting for 13% of all AI-related job postings.
- → However, the recent boom in generative AI and agentic systems is beginning to widen the geography of AI activity to a broader set of emerging metro areas.
- → To fully harness the power of AI, the U.S. should combine supportive national strategy with "bottom–up" economic development by regions.

Downloads

- ↓ Full report
- ↓ Executive summary

Artificial intelligence has emerged as a general purpose technology with far-reaching consequences for industries, places, and people.

AI systems promise to drive productivity by automating routine tasks or augmenting work, allowing humans to focus on higher-value activities. The technology is also accelerating the pace of discovery and innovation by analyzing vast datasets and identifying patterns humans might miss. And for that matter, AI enables more efficient resource allocation through intelligent forecasting and optimization.

As such, AI could heavily influence the nation's ability to achieve its larger goals, whether it be through faster drug development, personalized learning, or "virtual employees" optimizing supply chain complexities.

With that in mind, it matters a lot whether and which U.S. cities and regions are prepared to facilitate AI development in high-quality ways, and are therefore demonstrating a readiness to truly benefit from future AI build-out.

What does it mean to be 'ready' for AI?

The nation's general readiness to benefit from AI is critical, because the technology is going to play a significant role in economic development given its potential to drive efficiency, innovation, and productivity in every industry, both nationally and within regions.

Overall, readiness for AI—as an emergent, innovation-driven technology—will depend on the nation's ability to deliver on these critical pillars:

- The availability of abundant AI talent, since talent clusters are critical in generating self-reinforcing economic growth for people, firms, and places.
- The accessibility of AI innovation and innovation infrastructure, since technical progress plays a disproportionate role in economic growth and builds on itself.
- Actual adoption of AI by organizations, because broad technology adoption remains an important driver of productivity growth and living standards.

AI readiness also matters for regions

At the same time, AI adoption at the regional level matters equally for economic development, prosperity, and the flourishing of communities. Individual places must pay attention to the local presence of the three pillars of AI readiness to ensure their success.

After all, AI very much reflects the tendency of emerging digital industries to cluster in a short list of large, tech-focused "early-adopter" hubs, as Brookings has described in previous reports (https://www.brookings.edu/articles/superstars-rising-stars-and-the-rest-pandemic-trends-and-shifts-in-the-geography-of-tech/) .

At the same time, digital industries, including AI, tend to gradually diffuse across the country at varied speeds with varied adoption patterns.

In response, this analysis expands on an earlier study (https://www.brookings.edu/articles/the-geography-of-ai/) to examine the extent, location, and concentration of AI assets, capabilities, and activity in U.S. metropolitan areas.

Employing 14 basic measures, the report benchmarks regions based on their core AI assets and capabilities as they relate to three pillars of AI readiness: talent, innovation, and adoption. In doing so, the assessment categorizes 195 metro areas into six tiers of regional AI involvement and recommends starting points and strategies based on the level and type of involvement.

Read more about our data and methodology on page 6 of the full report. >> ↗

Turning to the results of the assessment, analysis of the 14 measures of AI economic activity across the U.S. yields several broad findings about the industry, its characteristics, and its geography.

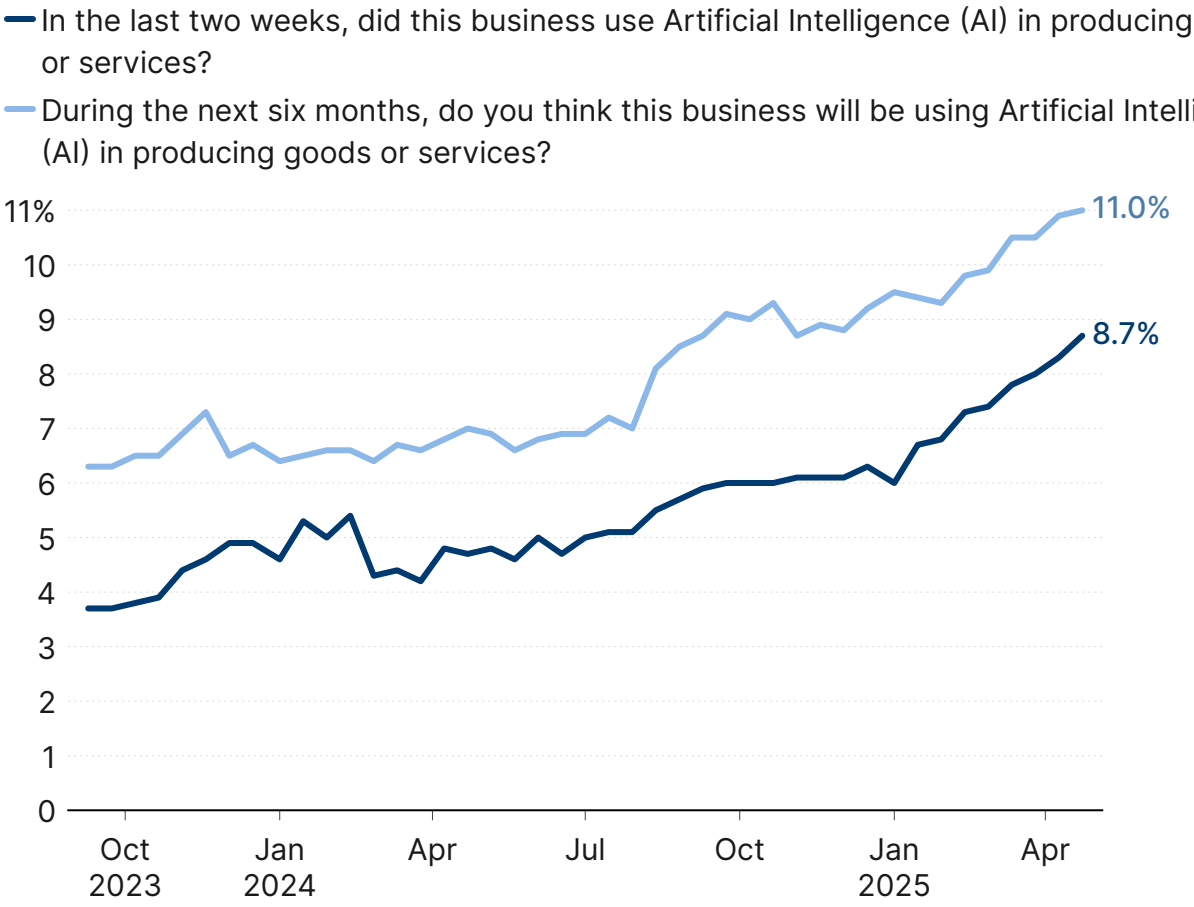
The nation's AI enterprise is growing rapidly, though it remains modest in size

One of the clearest indicators of AI's expanding footprint in the U.S. economy is the rising share of businesses reporting current or anticipated use of AI technologies.

FIGURE 1

AI enterprise-adoption is on the rise but remains low

Share of businesses responding 'Yes'



Source: Brookings' analysis of U.S. Census Bureau Business Trends and Outlook Survey

Brookings Metro

Download image

Read more about national AI growth trends on page 11 of the full report. >> ↗

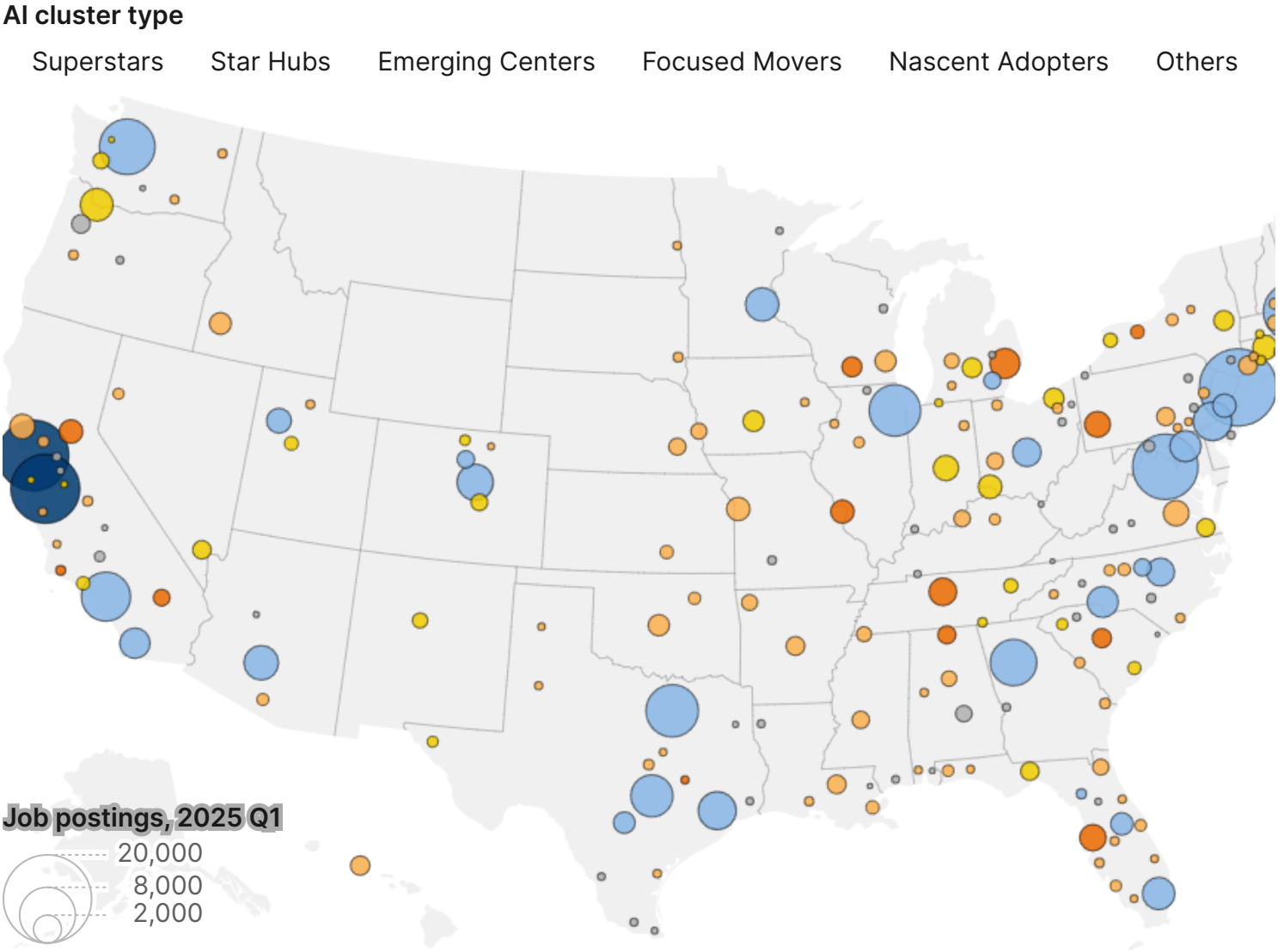
The main AI enterprise is concentrated in a limited number of metro areas, but numerous other regions are home to meaningful AI activity

Along these lines, the present analysis depicts an AI sector that remains concentrated in the nation's most familiar coastal tech centers, but is beginning to spread across the

country with varying degrees and types of local clustering.

INTERACTIVE MAP

Six different types of AI metro areas



Source: Brookings' analysis of job posting data from Lightcast.

Brookings Metro

Download image

Continuing the pattern Brookings reported in 2021 (https://www.brookings.edu/articles/the-geography-of-ai/) , the major AI community types revealed by the present cluster analysis include:

Superstars: The San Francisco and San Jose metropolitan areas exhibit unmatched strength across all three AI success pillars (talent, innovation, and adoption).

Star Hubs: This group of 28 metro areas forms a second echelon of uniformly strong AI ecosystems, balancing top-tier talent, research, and enterprise uptake.

Emerging Centers: This group of 14 metro areas combines top performance in two pillars with one developing area.

Focused Movers: This group of 29 metro areas excels in one AI pillar while maintaining foundations in the other two.

Nascent Adopters: This group of 79 metro areas shows moderate performance across all three pillars.

Others: This group of 43 metro areas currently lags on multiple pillars.

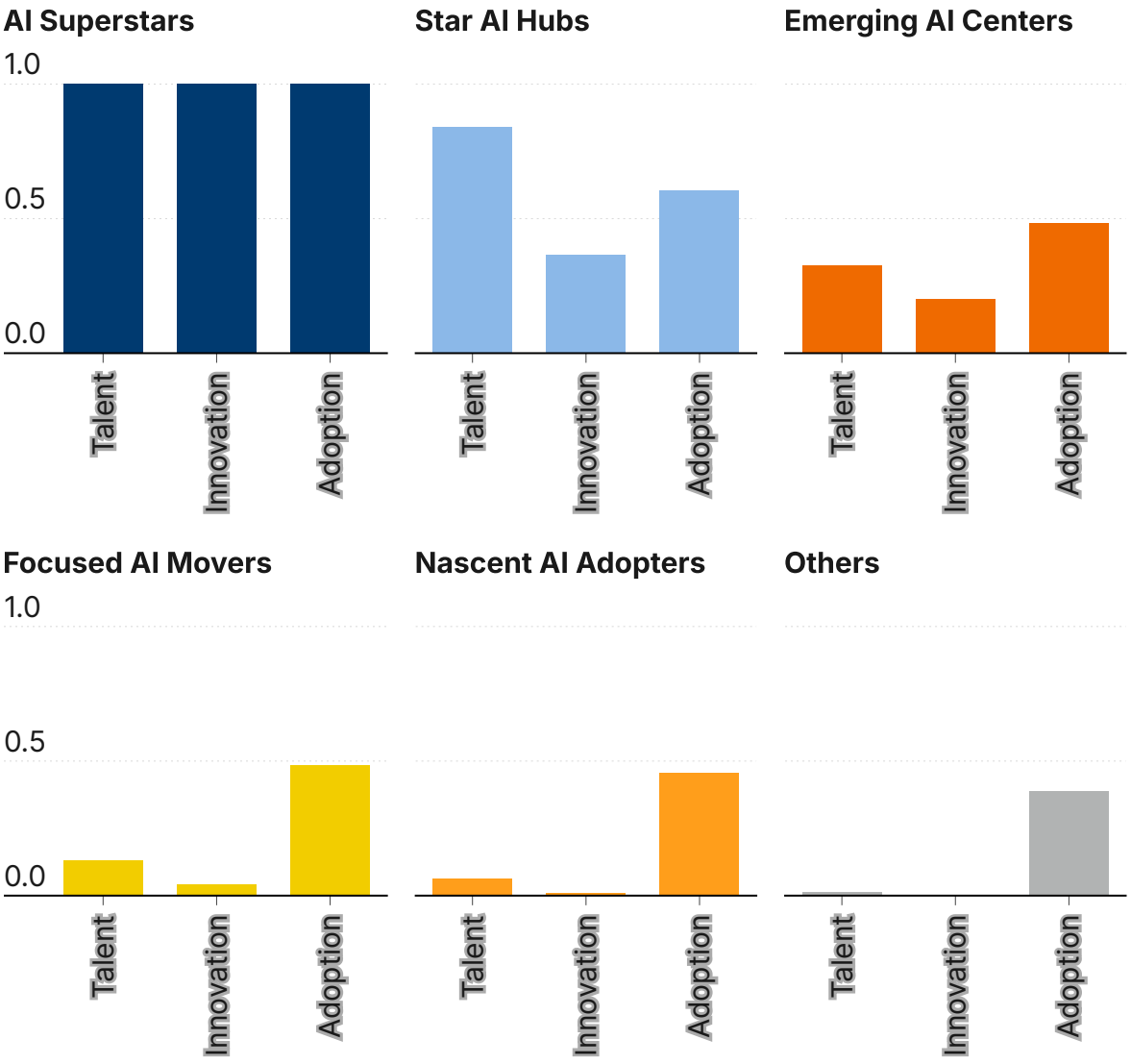
In addition, the analysis also touches on 192 of the nation's **smaller** metro areas.

As the above map shows, the six cluster types account for varied, disparate chunks of the AI economy, with wide scattering across Eastern, Midwest, and Sun Belt states.

The six cluster types are characterized by varied strengths across the three pillars. In this regard, the two Superstar metro areas reflect broad and dominant strength across all success pillars. Likewise, the Star Hubs group displays its own strong but less dominant balance across the three pillars. The rest of the cluster groups display varied configurations that all tend to reflect modest talent availability, thinner innovation resources, and somewhat stronger adoption activity.

Group strength by the three pillars of AI readiness

Average performance of U.S. metros across Talent, Innovation, and Adoption pillars



Note: Each pillar's value is calculated by scaling individual measures, averaging them, and then normalizing so that the top pillar is set to one.

Brookings Metro

Download image

Current and emerging regional AI performance is informed by varied local mixes of success factors

Zooming in on the distribution of individual success factors across the clusters reveals the varied presence of the 14 metrics across the six community types.

Again, the Superstars stand out for their dominant shares of talent, innovation, and adoption metrics, although in some cases the Star Hubs rival those shares. By contrast, the Nascent Adopters' ecosystems tend to lag on talent and innovation metrics but exhibit notable adoption activity.

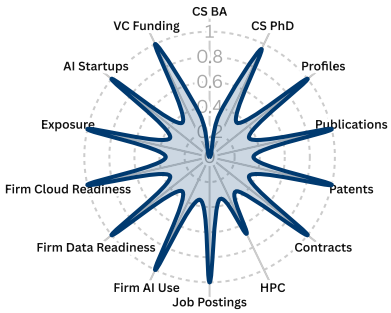
FIGURE 3

Cluster configurations for the six groups

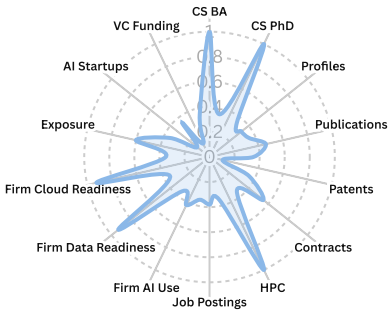
Normalized AI capacity levels, benchmarked to the top-performing metro area group; values range from zero (worst) to one (best)

Superstars Star Hubs Emerging Centers Focused Movers Nascent Adopters Others

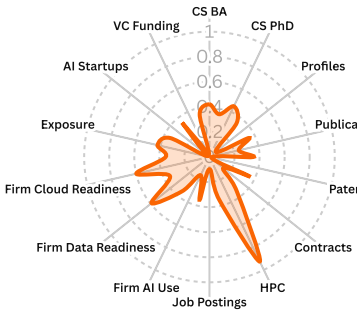
Superstars



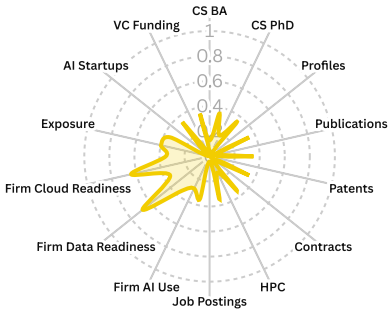
Star Hubs



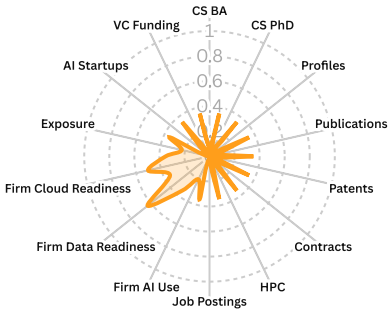
Emerging Cent



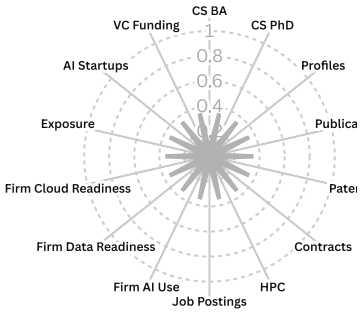
Focused Movers



Nascent Adopters



Others



Source: Brookings' analysis of data from US Census Bureau, Pitchbook, Crunchbase, Lightcast, NSF, Open AI, STAR Metrics, USPTO, AI Rankings

Read more about the six cluster types starting on page 26 of the full report. >> ↗

To view detailed data for a particular metropolitan area, select a metropolitan area in the interactive feature below.

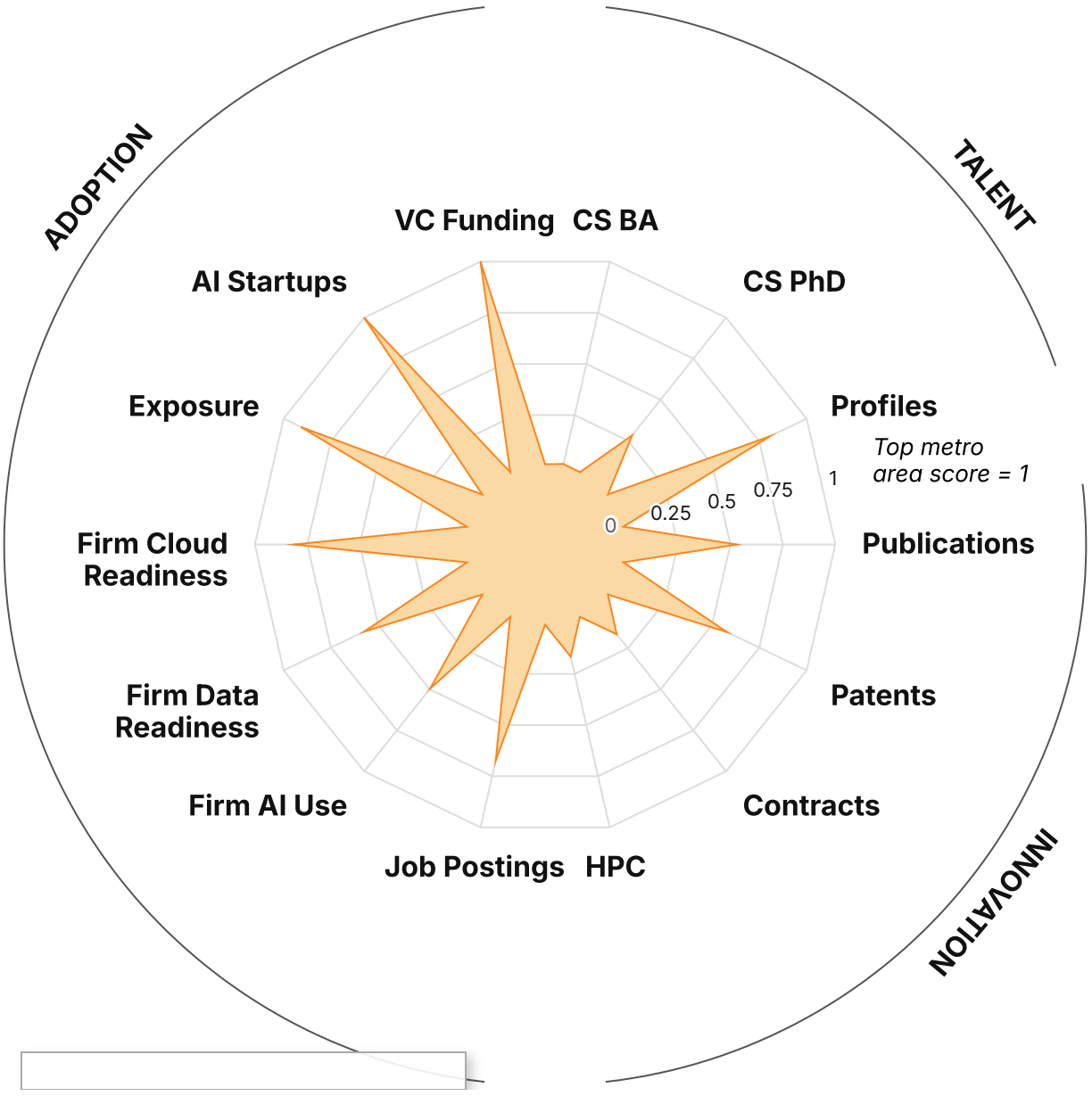
Select a metropolitan area:

San Francisco-Oakland-Fremont, CA

AI capacity levels in the San Francisco-Oakland-Fremont, CA metro area

Profile of AI capacity scores

Scaled raw values, benchmarked to the top-performing metro area; values range from zero (worst) to one (best)



Sources: CS BA: *U.S. Census: American Community Survey (ACS), (2023);* **CS PhD:** *NSF NCSES: Higher Education Research and Development Survey (HERD), (2023);* **Profiles:** *Lightcast, (2024);* **Publications:** *AI Rankings, (2024);* **Patents:** *USPTO, (2023);* **Contracts:** *USA Spending, (2024);* **HPC:** *NSF ACCESS, (2024);* **Job Postings:** *Lightcast (2024);* **Firm AI Use:** *U.S. census and NSF Annual Business Survey (2022) ;* **Firm Data Readiness:** *U.S. Census and NSF Annual Business Survey (2021);* **Firm Cloud Readiness:** *U.S. Census and NSF Annual Business Survey (2021);* **Exposure:** *OpenAI (2022);* **AI Startups:** *Crunchbase (2014-2024);* **VC Funding:** *Pitchbook (2023-2024)*

TALENT

CS BA: Number of computer science, engineering, and mathematics graduates
16,594 graduates

CS PhD: Number of computer science, engineering, and mathematics PhD graduates
1,612 enrolled

Profiles: Volume of U.S. worker online profiles with AI skills
25,533 profiles

INNOVATION

Publications: AI research papers published at top AI conferences
195 publications

Patents: AI patents granted
5,824 patent(s)

Contracts: Federal R&D contract spending on AI
34 contract(s)

HPC: High performance computing (HPC) usage from academic users through the NSF ACCESS program
28.8M ACCESS credits

ADOPTION

Job Postings: Number of job postings requiring AI skills
29,080 postings

Firm AI Use: Percentage of firms adopting AI technologies
7%

Firm Data Readiness: Percentage of firms with files in digital format
31%

Firm Cloud Readiness: Percentage of firms adopting cloud based tech
27%

Exposure: Share of jobs in a metro area exposed to generative AI
39%

AI Startups: Number of startups creating AI-driven products
3,641 startup(s)

VC Funding: Venture capital funding raised by AI startups
2,749 VC deal(s)

To be sure, the great AI Superstars in the Bay Area continue to dominate, but the broader map depicts both welcome decentralization and too many areas that lack significant AI activity.

It is the case that the low-cost and simple use of generative AI applications in business will enable its eventual wider diffusion. But the fact remains that the trends and data analysis reported here depict only modest diffusion beyond the primary AI centers. This pattern of "frontier" hubs and broad "hinterlands" reflects the relatively slow dispersion of activity across space that economist Nicholas Bloom, ourselves, and others say frequently characterizes the market and spatial structure of digital economies.

All of which raises the question of whether anything should be done about these trends. Some will deny the need, insisting on the sovereignty of the private market. For such observers, the unevenness of AI diffusion is a market-ordained inevitability of the vaunted U.S. innovation system, and, in any event, not likely a problem.

Yet it is possible that deficits in regional AI development in too many places will foreclose on opportunities for aggregate progress, which suggests the advisability of actions that might help AI spread to more places.

Lagging regions, in this vein, entail opportunity gaps that reduce workers' and communities' ability to reap the rewards of AI because:

- Pools of U.S. talent are lost.
- Promising research and innovation resources go undeveloped.
- Adoption is slowed because too many inventors, startups, and industry use cases remain peripheral.

Given that, it behooves both the nation and its regions (including state and municipal governments, philanthropies, and local businesses) to work together to augment and widen the reach of AI development in more areas.

To that end, the nation needs to **build out a strong AI-support platform** at the same time as cities, states, firms, and community actors **develop a region-by-region strategy** that begins with regions' individual starting points and uses them to shape local AI research agendas, foster regional cluster development, and build local talent in ways oriented to local needs. Both priorities need to be pursued to ensure U.S. AI development proves both dynamic and widespread.

Along these lines, each AI cluster's local starting point suggests various priorities for near-term strategies:

- **Superstars:** Support emerging "Little Tech" companies, maintain appeal to immigrant talent, invest heavily in local tech education, and consider options for worker-transition support.
- **Star Hubs and Emerging Centers:** Invest in developing regional clusters, increase access to high-speed and affordable computing resources, and intensify efforts in tech education.
- **Focused Movers:** Lean into signature strengths and invest in the computing infrastructure necessary to train and retain top talent, prioritize tech transfer and commercialization, and leverage local business environments to promote adoption.
- **Nascent Adopters and Others:** Promote broad AI literacy, demonstrate practical AI applications in routine tasks, and think about AI career pathways.

In sum, the emergence of AI as a general purpose technology presents an inflection point for regional economic development in the United States. Leaders should move urgently to promote local development that will contribute to more evenly distributed AI growth from coast to coast.

See a detailed list of benchmarked metropolitan areas with rank positions and groups in the interactive table below:

Performance tiers of all benchmarked metropolitan areas

Talent, innovation, and adoption tiers correspond to the top 25% ("T"), middle 50% ("M"), and bottom 25% ("B") of the combined scores within each category. These codes combine to yield a three-letter tier profile for each metro area.

Search in table

Cluster name	Metropolitan Area	Population	Employment	Talent tier	Innovation tier	Adoption tier
Superstars	San Francisco-Oakland-Fremont, CA	4,518,695	2,436,078	T	T	T
Superstars	San Jose-Sunnyvale-Santa Clara, CA	1,932,366	1,152,574	T	T	T
Star Hubs	New York-Newark-Jersey City, NY-NJ	19,486,735	9,514,216	T	T	T
Star Hubs	Boston-Cambridge-Newton, MA-NH	4,926,000	2,734,096	T	T	T
Star Hubs	Los Angeles-Long Beach-Anaheim, CA	12,674,134	6,240,667	T	T	T
Star Hubs	Washington-Arlington-Alexandria, DC-VA-MD-WV	6,326,186	3,207,329	T	T	T
Star Hubs	Chicago-Naperville-Elgin, IL-IN	9,239,810	4,465,599	T	T	T
Star Hubs	Atlanta-Sandy Springs-Roswell, GA	6,370,689	2,927,957	T	T	T
Star Hubs	Seattle-Tacoma-Bellevue, WA	4,053,291	2,125,589	T	T	T
Star Hubs	Austin-Round					

Star Hubs	Austin-Round Rock-San Marcos, TX	2,533,250	1,309,831	T	T	T
Star Hubs	San Diego-Chula Vista-Carlsbad, CA	3,252,555	1,558,681	T	T	T
Star Hubs	Dallas-Fort Worth-Arlington, TX	8,236,987	4,087,814	T	T	T
Star Hubs	Philadelphia-Camden-Wilmington, PA-NJ-DE-MD	6,266,940	2,883,521	T	T	T
Star Hubs	Ann Arbor, MI	364,386	219,622	T	T	T
Star Hubs	Houston-Pasadena-The Woodlands, TX	7,618,468	3,307,622	T	T	T
Star Hubs	Phoenix-Mesa-Chandler, AZ	5,103,660	2,394,360	T	T	T
Star Hubs	Baltimore-Columbia-Towson, MD	2,838,179	1,359,884	T	T	T
Star Hubs	Salt Lake City-Murray, UT	1,272,750	837,244	T	T	T
Star Hubs	Boulder, CO	326,150	198,314	T	T	T
Star Hubs	Miami-Fort Lauderdale-West Palm Beach, FL	6,193,386	2,821,899	T	T	T
Star Hubs	Denver-Aurora-Centennial, CO	3,013,870	1,647,345	T	T	T
Star Hubs	Minneapolis-St. Paul-Bloomington, MN-WI	3,724,755	1,946,784	T	T	T
Star Hubs	Raleigh-Cary, NC	1,538,372	744,815	T	T	T

Star Hubs	Durham-Chapel Hill, NC	614,647	350,509	T	T	T
Star Hubs	Gainesville, FL	357,570	153,601	T	T	T
Star Hubs	Columbus, OH	2,193,907	1,098,324	T	T	T
Star Hubs	Orlando-Kissimmee-Sanford, FL	2,865,660	1,424,661	T	T	T
Star Hubs	Charlotte-Concord-Gastonia, NC-SC	2,847,691	1,364,949	T	T	T
Star Hubs	Trenton-Princeton, NJ	383,275	266,497	T	T	T
Star Hubs	San Antonio-New Braunfels, TX	2,743,066	1,138,124	T	T	T
Emerging Centers	Pittsburgh, PA	2,423,989	1,101,720	T	T	M
Emerging Centers	Madison, WI	701,254	412,213	T	T	M
Emerging Centers	Santa Maria-Santa Barbara, CA	440,145	219,686	T	T	M
Emerging Centers	College Station-Bryan, TX	286,792	137,919	T	T	M
Emerging Centers	Sacramento-Roseville-Folsom, CA	2,428,466	1,100,418	T	T	M
Emerging Centers	Detroit-Warren-Dearborn, MI	4,341,264	1,918,218	T	T	M
Emerging Centers	Tampa-St. Petersburg-Clearwater, FL	3,386,092	1,456,808	T	M	T
Emerging Centers	Nashville-Davidson--Murfreesboro--Franklin, TN	2,136,895	1,126,515	T	M	T

	Franklin, TN					
Emerging Centers	Rochester, NY	1,051,954	494,159	T	T	M

DOWNLOADS

Read the full report

Read the executive summary

AUTHORS

Mark Muro Senior Fellow - Brookings Metro @markmuro1

Shriya Methkupally Senior Research Assistant - Brookings Metro
shriya-methkupally
