

Fastest Growing Tech Skills in Massachusetts

Prepared By:

MTLC and FourOne Insights

Fastest Growing Tech Skills in Massachusetts (2023-2025)

The Massachusetts Technology Leadership Council (MTLC) and FourOne Insights partnered to analyze the fastest-growing tech skills in Massachusetts.

The research highlights how artificial intelligence is driving dramatic shifts, but also underscores that growth is not limited to Al. Data, security, and modern development practices are advancing quickly as companies adapt to an Al-centric future.



The fastest-growing skill in Massachusetts is Generative AI, which has expanded 682% since 2023. Broader AI and machine learning skills are also on the rise, including large language models (LLMs) and MLOps.

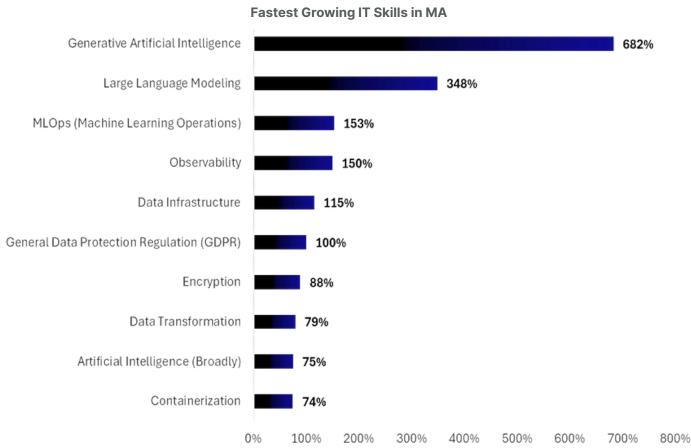
Yet the story is not solely about AI. Traditional skills remain vital, with data infrastructure and data transformation seeing major increases in demand as organizations build the foundations required to apply AI effectively.

Security and encryption skills are also rising sharply, reflecting the heightened need to safeguard sensitive data and comply with evolving privacy requirements.

These trends show that while AI is the attention-grabber, Massachusetts employers still rely heavily on core technical capabilities to grow and compete.

Skills





MA vs. National

When compared to national patterns, Massachusetts presents a mixed picture. The state is ahead in some areas and behind in others. Generative AI demand is 8% higher than the U.S. overall, demonstrating strong early adoption and leadership.

But growth in other AI skills trails the national average by 42%, suggesting that Massachusetts may already be reaching a saturation point in certain areas or that faster growth is occurring in regions with expanding tech hubs. At the same time, data transformation and encryption stand out as skills where Massachusetts is exceeding national demand, highlighting local strengths in data and privacy-oriented roles. This suggests the state is not falling behind broadly but rather developing a distinct skills profile within the larger U.S. tech ecosystem.



Job Posting Growth by Digital Tool in MA Tech Jobs: 2023 to Last 12 Months

Skill	MA Growth	MA Growth VS National Growth	
GenAl	682%	8%	
Large Language Modeling	348%	-33%	
Machine Learning Ops	153%	0%	
Observability	150%	33%	
Data Infrastructure	115%	86%	
General Data Protection Regulation	100%	-30%	
Encryption	88%	205%	
Data Transformation	79%	304%	
Al (Broadly)	75% -42%		
Containerization	74% 6%		

The Case for Upskilling

One of the most pressing challenges is that demand for emerging skills far exceeds the current supply of workers. **Out of the top 10 fastest-growing skills, only two have enough available workers in Massachusetts to meet employer needs.** Observability is a clear example: it carries a salary premium of more than \$32,000 per year, yet only 20% of the required workforce is available for open positions. Containerization and GDPR expertise face similar shortages. Employers can recruit talent from elsewhere, but the premium costs of hiring are steep. In contrast, upskilling current employees provides a more cost-effective and sustainable solution, enabling companies to build the skills they need while retaining talent already embedded in their organizations.



Available Workers Per Opening & Salary Premium by Skill (2023 to Last 12 Months)

Skill	MA Growth	Available Workers Per Opening	Salary Premium
GenAl	682%	0.8	\$36,736
Large Language Modeling	348%	1.0	\$40,832
Machine Learning Ops	153%	0.5	\$26,496
Observability	150%	0.2	\$32,384
Data Infrastructure	115%	0.4	\$25,472
General Data Protection Regulation	100%	0.4	\$20,352
Encryption	88%	1.0	\$16,256
Data Transformation	79%	0.7	\$11,136
Al Broadly	75%	0.9	\$26,496
Containerization	74%	0.3	\$16,256

IN SUMMARY

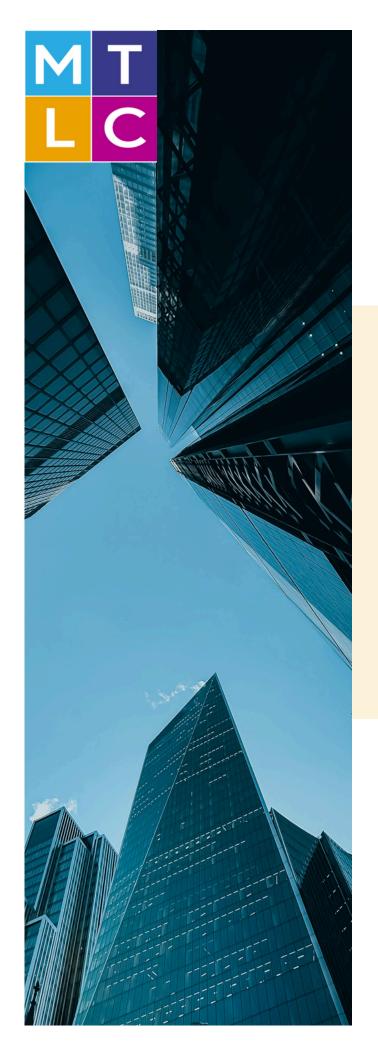


The overall picture is not that AI will replace every job in tech. Instead, new roles are emerging that extend and evolve traditional skills. Massachusetts companies will continue to need strong data, security, and infrastructure talent alongside advanced AI expertise. For employers, the prudent strategy is to invest in their current workforce by providing training, reskilling, and career pathways that build capacity in undersupplied, high-value skills. This approach is not only more cost-effective but also strengthens retention and positions Massachusetts as a leader in the next wave of technological innovation.



END NOTES & METHODOLOGY

- This report analyzes the fastest-growing skills in tech jobs in Massachusetts from 2023 to the last 12 months (August 2024 to July 2025).
- The fastest growing skills are broken out into tech skills that represent competency or knowledge areas (e.g. "generative artificial intelligence" or "data infrastructure") and digital tools that represent specific technologies or products (e.g. "Databricks" or "Oracle Cloud").
- Skill demand is quantified by analyzing the number of unique job postings in tech jobs in Massachusetts. Tech jobs are defined as one of 19 SOC occupations referenced by CompTIA as "tech" occupations.
- Skills included in this analysis had to be tech or tech-related skills requested in at least 1% of tech job postings in MA over the past 12 months.
- All analyses included in this report were developed and delivered by FourOne Insights.
 Underlying data were sourced from job postings and professional social profiles sourced from Lightcast.



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