



DEMAND FOR DIGITAL GENERALIST SKILLS IN NEW ENGLAND

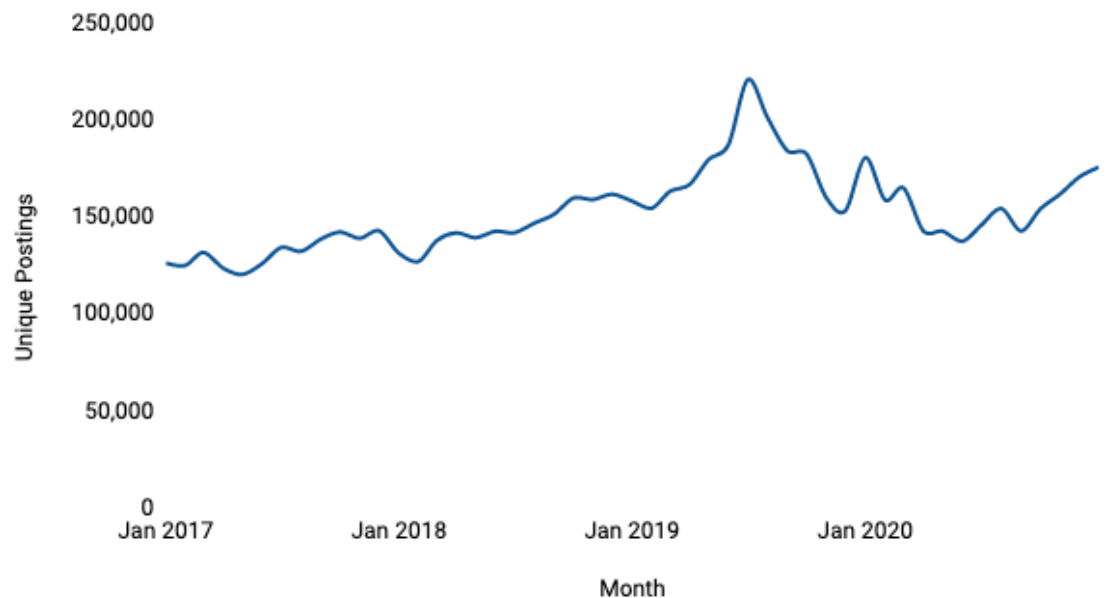
FEBRUARY 2021

EMPLOYERS' DIGITAL GENERALIST JOB POSTINGS

New England is home to technology-enabled enterprises spanning high-growth industries like life sciences, finance, advanced manufacturing and information technology.

Increasingly, occupations within such fields call for specialized technology skills like AI, machine learning, cybersecurity and more. However, many entry-level jobs also require core digital generalist knowledge, skills and abilities (KSAs).

Unique Monthly Postings January '17-January '21



Source: NEBHE analysis of Emsi's Job Postings data, extracted via Labor Analyst on February 18, 2021.

Employer-endorsed digital generalist KSAs (defined in the methodology section at the end of the brief) include computer literacy and storytelling, as well as data collection, analysis and visualization. Importantly, the acquisition of these in-demand KSAs represent entry points to growing career fields that offer family-sustaining wages.

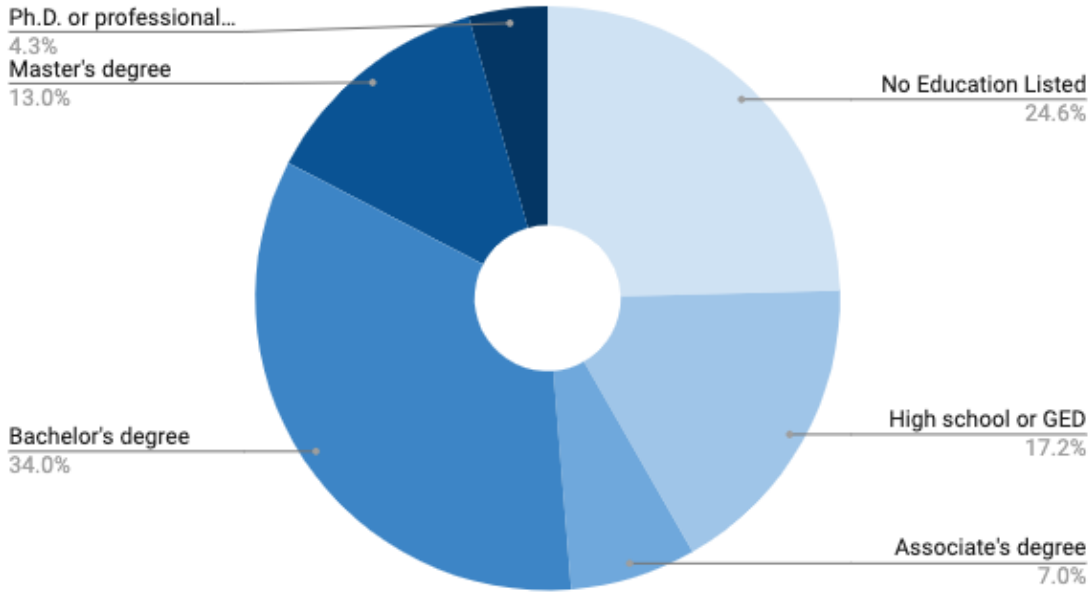
In the last three years, the monthly number of unique job postings that include at least one digital generalist KSA has grown **40%** across the region. In the last year, nearly **750,000** unique jobs were posted in New England. Employer demand for these jobs has been impacted by the COVID-19 pandemic, falling to 137,000 postings for the month of June 2020 as compared to the peak number of postings in July 2019 of **221,000**.

This brief analyzes the demand for digital generalist skills by required education level and industry and offers insights into how this analysis can shape economic recovery and workforce development decisions in New England.

About the New England Board of Higher Education (NEBHE)

Established in 1955 by six visionary New England governors, NEBHE is a regional compact that works to help leaders assess, develop and implement education practices and policies of regional significance; promote regional cooperation that encourages efficient sharing of resources; and strengthen the relationship between higher education and the regional economy.

Education Requirements for Job Postings with Digital Generalist Skills

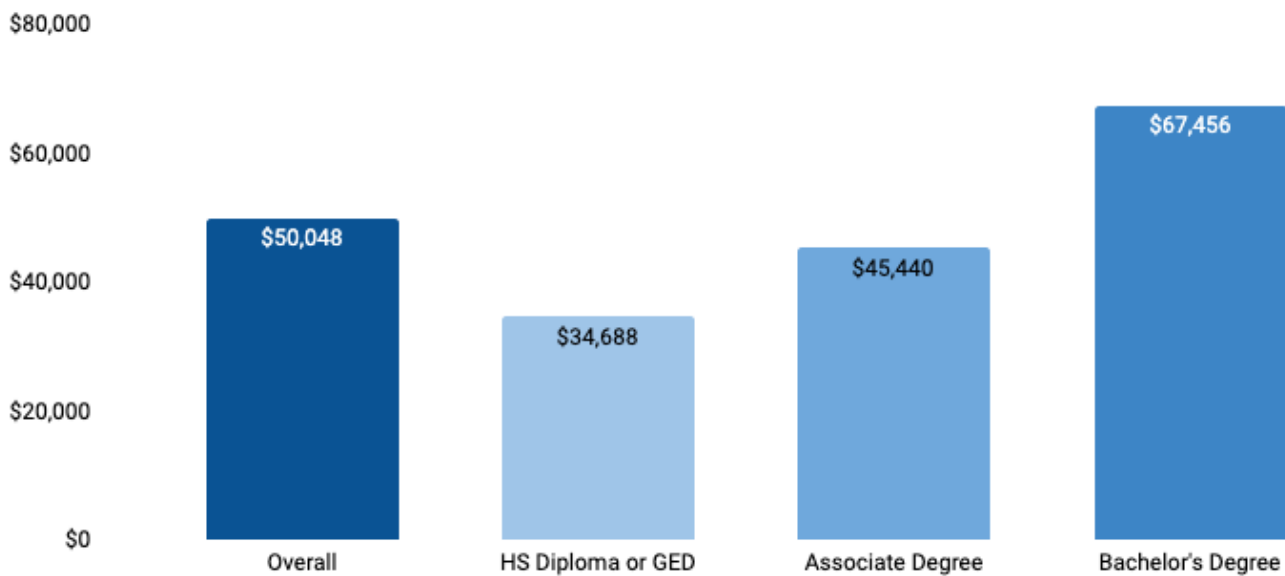


Source: NEBHE analysis of Emsi's Job Postings data, extracted via Labor Analyst on February 18, 2021.

The vast majority of digital generalist job postings that include an education requirement are geared toward 4-year degree or advanced degree holders. Less than one in four, or **181,000**, of such postings are advertised to individuals with a high school diploma or GED, some college but no degree or an associate degree. It is worth noting both the trend of degree inflation in our economy, as well as the specialized nature of some of these jobs.

There are notable wage premiums associated with education level for jobs that include at least one digital generalist KSA. The average advertised salary for digital generalist jobs is **\$50,048**. In New England, a family-sustaining wage for a single parent family with two children is approximately \$65,000. This wage threshold is met for job postings that require at least a bachelor's degree.

There is great potential to develop non-degree, skills-based training programs that target digital generalist KSAs, stack into degree pathways and are enhanced by work-based learning opportunities. Such programs accelerate the number of individuals prepared for entry-level digital generalist jobs, foster confidence in college-going and lead individuals to careers with promotional opportunities.



Advertised Median Salary by Education Level for Job Postings with Digital Generalist Skills

Source: NEBHE analysis of Emsi's Job Postings data, extracted via Labor Analyst on February 18, 2021.

TOP DIGITAL GENERALIST OCCUPATIONS

The mix of occupations associated with at least one digital generalist KSA varies greatly by required education level. Occupations requiring a high school diploma or GED are more likely to be considered service jobs in the retail, healthcare and professional, scientific and technical services industries. In comparison, occupations requiring a bachelor's degree are most frequently found in the professional, scientific and technical services, manufacturing, finance and insurance, and information industries.

Top Occupations Posted with Digital Generalist Skills by Education Level, January '20-January '21								
HS Diploma or GED			Associate Degree			Bachelor's Degree		
Occupation	Unique Job Postings	Median Annual Earnings	Occupation	Unique Job Postings	Median Annual Earnings	Occupation	Unique Job Postings	Median Annual Earnings
First-Line Supervisors of Retail Sales Workers	17,281	\$45,553	Registered Nurses	7,826	\$81,257	Software Developers and Software Quality Assurance Analysts and Testers	28,378	\$108,889
Customer Service Representatives	8,271	\$38,827	First-Line Supervisors of Retail Sales Workers	3,183	\$45,553	Marketing Managers	14,762	\$132,968
Security Guards	6,218	\$32,818	Medical Assistants	2,943	\$38,655	Computer Occupations, All Other	14,395	\$83,352
Stockers and Order Fillers	6,149	\$28,315	First-Line Supervisors of Office and Administrative Support Workers	1,885	\$62,086	Management Analysts	10,191	\$94,135
Retail Salespersons	5,454	\$27,145	Computer User Support Specialists	1,572	\$58,566	Industrial Engineers	9,000	\$94,597
First-Line Supervisors of Office and Administrative Support Workers	5,060	\$62,086	Customer Service Representatives	1,572	\$38,827	Personal Service Managers, All Other; Entertainment and Recreation Managers, Except Gambling; and Managers, All Other	8,851	\$120,553
Maintenance and Repair Workers, General	3,715	\$45,056	Medical and Health Services Managers	1,514	\$108,789	Financial Managers	8,410	\$136,116
Medical Secretaries and Administrative Assistants	3,547	\$41,232	Maintenance and Repair Workers, General	1,497	\$45,056	Accountants and Auditors	7,909	\$74,767
Medical Assistants	3,430	\$38,655	Nursing Assistants	1,322	\$33,069	General and Operations Managers	7,817	\$114,909
General and Operations Managers	3,175	\$114,909	Medical Secretaries and Administrative Assistants	1,243	\$41,232	Computer and Information Systems Managers	7,534	\$142,828

Source: NEBHE analysis of Emsi's Job Postings data, extracted via Labor Analyst on February 18, 2021.

DIGITAL GENERALIST CAREER PATHWAYS

Policymakers, employers and postsecondary education leaders, when considering economic recovery strategies and opportunities for individuals to improve job outlooks, must support education and career pathways with seamless transition points. Investing in digital generalist skills programs supports the upskilling of incumbent workers, job and industry transitions for un- and underemployed New Englanders and the development of new pipelines for in-demand workers.

Pathway for:	Customer Service Representative	Upskilling to: Computer User Support Specialist	Upskilling to: Web Developers/Digital Interface Designer	Upskilling to: Marketing Manager
Number of Jobs (2020)	127,386	36,066	8,255	25,842
Number of Job Postings (Jan '20-Jan '21)	50,410	20,926	10,179	40,397
Median Annual Earnings	\$38,827	\$58,566	\$76,737	\$132,968
Top Hard Skills	Merchandising Cash Register Customer Experience Call Centers Order Fulfillment	Technical Support Help Desk Operating Systems Active Directory Computer Science	JavaScript Java Cascading Style Sheets HTML Agile Methodology	Product Management New Product Development Business Development Strategic Planning Go-to-Market Strategy
Top Common Skills	Customer Service Sales Communications Operations Problem Solving	Communications Problem Solving/Troubleshooting Customer Service Management Operations	Communications Problem Solving Management Innovation Integration	Communications Sales Leadership Management Innovation
Typical Entry Level Education	High school diploma or equivalent	Some college, no degree	Associate's degree	Bachelor's degree
In-demand Industry Recognized Credential	N/A	Microsoft Certified Professional, CompTIA Network+, CompTIA A+	Salesforce Certification	Project Management Professional Certification

Source: NEBHE analysis of Emsi's Job Postings data, extracted via Labor Analyst on February 18, 2021.

Labor market analysis of common skills across digitally-enabled occupations shows how the acquisition of digital generalist KSAs, augmented over time with specialized digital skills and work-based learning, can open up opportunities for low-wage, entry-level workers to advance into well-paid, high-demand fields.

The challenge is to make it easier for individuals to obtain digital generalist skills affordably, while meeting work and family obligations, and in such a way that enables pathways to specialized skills and degrees. In addition to non-degree, skills-based programs, internships offer critical opportunities for work-based applications of skills and connections with employers that result in hiring relationships for interns and institutions, alike. However, of internship postings that list at least one digital general KSA and an education requirement, less than **40%** are marketed to individuals with a high school diploma or GED, some college but no degree or an associate degree.

In order to address the un- and underemployment created by the COVID-19 pandemic, as well as long-standing inequities in access to digital- and technology-related jobs, policymakers, employers and postsecondary education leaders must advocate for and invest in digital generalist skills and work-based learning opportunities, especially for New Englanders without postsecondary education credentials.

NEBHE is partnered with the Business-Higher Education Forum (BHEF) on a Connecticut-based initiative to create credit-bearing digital generalist microcredentials. BHEF created a list of digital generalist KSAs endorsed by employer partners across the U.S. NEBHE inputted these KSAs into Emsi's Skills Extractor to harvest the following Common and Hard Skills from its library:

- Hard Skill - Data Ethics
- Common Skill - Microsoft Excel
- Hard Skill - Access Controls
- Hard Skill - Data Analysis
- Hard Skill - Authentications
- Hard Skill - Big Data
- Hard Skill - Dashboard
- Common Skill - Decision Making
- Hard Skill - Computer Science
- Common Skill - Computer Literacy
- Hard Skill - Cyber Security
- Hard Skill - Data Collection
- Hard Skill - Data Engineering
- Hard Skill - Data Governance
- Hard Skill - Data Management
- Hard Skill - Data Manipulation
- Hard Skill - Data Mining
- Hard Skill - Data Modeling
- Hard Skill - Data Security
- Hard Skill - Model Validation
- Hard Skill - Content Strategy
- Hard Skill - Data Visualization
- Hard Skill - Design Of Experiments
- Hard Skill - Probability Distribution
- Hard Skill - Excel Pivot Tables And Charts
- Hard Skill - Statistical Hypothesis Testing
- Hard Skill - Statistical Inference
- Hard Skill - Information Assurance
- Hard Skill - Information Retrieval
- Hard Skill - Interaction Design
- Hard Skill - Network Security
- Hard Skill - Risk Management
- Common Skill - Operations
- Hard Skill - Probability
- Hard Skill - Visualization
- Hard Skill - Simple Linear Regression
- Hard Skill - Statistics
- Hard Skill - Storytelling
- Hard Skill - Unstructured Data
- Hard Skill - User Experience
- Hard Skill - Authorization (Computing)
- Hard Skill - Data Classification
- Hard Skill - Data Science

These skills, referred to in this brief as digital generalist KSAs, were used to analyze Emsi's job postings data for the six New England states during the period of January 2020-January 2021. Close to 750,000 job postings were associated with at least one digital generalist KSA.

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