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Welcome to Tech Talent 2023

OCTOBER 27, 2023

What a difference a year makes. When we convened leaders from our state’s business, education, government, and social sectors last November to address the challenges faced by employers in hiring appropriately skilled tech talent, the disparity between employer demand and available supply was significant. Since then, the pace of hiring for IT roles in Minnesota has cooled considerably, with just 6,180 unique job postings in September 2023 compared to 16,213 in the same period last year.

At a time when companies are tapping the brakes on new tech hiring, it’s critically important we don’t take our eye off the ball and remain focused on the long-term workforce challenges we face. In fact, the number of new technologists needed to fill projected job openings in Minnesota over the next 10 years has increased, mostly as a function of changing demographics and reduced labor force participation. Recent data from CompTIA/Lightcast projects a need to fill more than 92,000 tech job openings through 2033, which nearly equates to the total number of IT professionals working in Minnesota today.

In the pages that follow, we’re pleased to share current data on the size, scale, and composition of Minnesota’s tech workforce, the most in-demand jobs, and highlight opportunities to improve how we inspire, hire, and develop tech talent.

The tech workforce challenges we face as a state are not inconsequential. It will take all of us, working together, to develop the more accessible and equitable pathways into technology careers that will expand Minnesota’s supply of homegrown tech talent, meet the business needs of tech-enabled employers, and fuel our state’s innovation economy for years to come.

Let’s make it happen!

Jeff Tollefson
President & CEO
Minnesota Technology Association
About MnTech

The Minnesota Technology Association (MnTech) is a coalition of nearly 200 member companies united in building a stronger tech ecosystem and innovation economy in Minnesota. MnTech works to ensure that Minnesota’s technology-driven companies have access to exceptional talent, dedicated public policy advocates, and are part of an innovative, inclusive technology community. Learn more at mntech.org and meet our board members below.

Dan Abdul  
Chief Technology Officer  
Medica

Sameer Badlani  
Chief Information Officer  
Fairview Health Systems

Matt Bailey  
Senior Executive  
IBM

Teddy Bekele  
Chief Technology Officer  
Land O’Lakes

Andy Bingenheimer  
Chief Information Officer  
U.S. Bank

Tawanna Black  
CEO  
Center for Economic Inclusion

Kevin Boeckenstedt  
VP - Commercial Operations  
Thrivent

Robin Brown  
Chief Information Officer  
Cirrus Aviation

Doug Carnival  
Partner  
McGrann Shea Carnival

Julie Durham  
Chief Technology Officer  
United HealthCare

Lucinda DuToit  
VP Human Resources  
Digineer

Sarah Engstrom  
Chief Information Security Officer  
CHS, Inc.

Amy Fisher  
SVP Technology  
Padilla

Amka Hodzic  
Director - Technology Center  
Microsoft

Chris Howe  
CEO  
Rise & Shift, Turnberry Solutions

Tammylynne Jonas  
Chief Information Officer  
Donaldson

Pat Joyce  
CISO (retired)  
Medtronic

Sri Koneru  
Chief Information Officer  
Winnebago Industries

Jake Krings  
VP – Digital  
Target

Wolf Lewis  
Vice President  
Comcast Business

Rachel Lockett  
Chief Information Officer  
Pohlad Companies

Rebecca Martin  
Chief Marketing Officer  
Total Expert

Cy Morton  
Partner  
Robins Kaplan

Meredith Murphy  
Principal  
Grant Thornton

Hany Omar  
Managing Director  
Accenture

Anudeep Parhar  
Chief Information Officer  
Entertrust

Tim Peterson  
Chief Information Officer  
Xcel Energy

Rakhi Purohit  
VP of Technology  
Thomson Reuters

Matt Reck  
Chief Financial Officer  
Fortra

Chris Rence  
Chief Digital Officer  
Equus Holdings

PJ Ritters  
Partner  
PwC

Sarah Seger  
Sr. Director Talent Transformation  
Best Buy

Jamie Thingelstad  
Chief Technology Officer  
SPS Commerce

Jeff Tollefson  
CEO  
Minnesota Technology Association

Beth Tschida  
Chief Technology Officer  
Jamf

Sharon Kennedy Vickers  
CEO  
Software for Good

Paul Weirtz  
State President (retired)  
AT&T
Role of the Tech Sector in MN’s Economy

Within Minnesota, the tech sector continues to play a vital role in the overall state's economy and total employment. Technology also plays a driving role in new business creation, and Minneapolis ranks 2nd in the Midwest for startups, building our next generation of tech innovators and fueling Minnesota’s innovation economy.

- **108,638** Tech Occupation Jobs (ex. software developer)
- **$36.1B** Economic Impact (estimated direct impact of tech sector)
- **7.7%** Economic Impact of Tech as % of Overall State Economy
- **72,547** Unique Tech Occupation Job Postings over Last 12 Months
- **11,332** Tech Business Establishments (firms with payroll)
- **6.2%** Net Employment as a % of Overall Workforce
- **$101,365** Estimated Median Tech Wage • 106% Higher than Median State Wage

*mn:tech - Minnesota Technology Association*
Minnesota Talent: Current and Future

Minnesota has historically been a home for strong tech employment. This position is receding. **This trend is expected to continue as technology job growth in our state is low.**

**NET TECH EMPLOYMENT RANK**

18th

**SLIPPING FROM**

12th IN 2018

It will take a collective effort from companies investing in current employees and modifying their hiring practices combined with a rapid increase in the equitable development of new technologists to meet this demand.

**NUMBER OF TECHNOLOGY WORKERS NEEDED OVER THE NEXT 10 YEARS (2023-2033)**

<table>
<thead>
<tr>
<th>Description</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Projected number of new technologists needed due to new job growth</td>
<td>8,932</td>
</tr>
<tr>
<td>Projected number of replacement technologists needed due to workers retiring, leaving tech or leaving the region</td>
<td>83,600</td>
</tr>
<tr>
<td><strong>Total projected number of new technologists needed in Minnesota by 2033</strong></td>
<td><strong>92,537</strong></td>
</tr>
</tbody>
</table>

*Source: Lightcast | US Bureau of Labor Statistics | CompTIA*
Top Occupations

Technologists work in diverse roles and areas within organizations. Each has a different participation level, education level requirements. The following chart highlights the top 10 tech occupations in Minnesota ranked by current employment along with compensation levels and the number of projected job openings needing to be filled over the next ten years.

<table>
<thead>
<tr>
<th>OCCUPATION</th>
<th>2023 JOBS</th>
<th>WAGE RANGE 25TH-75TH PERCENTILE</th>
<th>ESTIMATED 2033 JOBS</th>
<th>TOTAL ESTIMATED DEMAND THROUGH 2033 (GROWTH + REPLACEMENT)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Software Developers</td>
<td>38,136</td>
<td>$95k - $136k</td>
<td>43,189</td>
<td>32,086</td>
</tr>
<tr>
<td>Computer Systems Analysts</td>
<td>13,661</td>
<td>$83k - $127k</td>
<td>13,998</td>
<td>10,079</td>
</tr>
<tr>
<td>Computer User Support Specialists</td>
<td>13,233</td>
<td>$49k - $75k</td>
<td>13,560</td>
<td>10,713</td>
</tr>
<tr>
<td>Computer and Information Systems Mgrs</td>
<td>9,238</td>
<td>$126k - $174k</td>
<td>10,114</td>
<td>7,989</td>
</tr>
<tr>
<td>Network Support Specialists</td>
<td>6,687</td>
<td>$59k - $86k</td>
<td>6,791</td>
<td>5,315</td>
</tr>
<tr>
<td>Network and Computer Systems Administrators</td>
<td>4,589</td>
<td>$77k - $109k</td>
<td>4,690</td>
<td>3,234</td>
</tr>
<tr>
<td>Computer, Automated Teller, &amp; Office Machine Repairers</td>
<td>3,031</td>
<td>$34k - $50k</td>
<td>2,782</td>
<td>2,880</td>
</tr>
<tr>
<td>Information Security Analysts</td>
<td>2,793</td>
<td>$88k - $135k</td>
<td>3,385</td>
<td>2,831</td>
</tr>
<tr>
<td>Computer Network Architects</td>
<td>2,711</td>
<td>$101k - $139k</td>
<td>2,738</td>
<td>1,728</td>
</tr>
<tr>
<td>Web Developers</td>
<td>2,570</td>
<td>$62k - $109k</td>
<td>2,837</td>
<td>2,283</td>
</tr>
<tr>
<td>All Information Technology Employment in Minnesota</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TOTAL 2023 JOBS</td>
<td>112,450</td>
<td></td>
<td>121,383</td>
<td>92,537</td>
</tr>
<tr>
<td>MEDIAN TECH WAGE</td>
<td>$101,365</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ESTIMATED 2033 JOBS</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Roles in Demand

The average number of postings per month for a particular role can change significantly based on different factors. However, the mismatch between postings and hirings can demonstrate difficulty to hire for a specific role.

<table>
<thead>
<tr>
<th>OCCUPATION</th>
<th>AVG MONTHLY POSTINGS</th>
<th>AVG MONTHLY HIRES</th>
<th>GAP</th>
</tr>
</thead>
<tbody>
<tr>
<td>Software Developers</td>
<td>4364</td>
<td>1241</td>
<td>-3,123</td>
</tr>
<tr>
<td>Computer Occupations, All Other</td>
<td>2,462</td>
<td>178</td>
<td>-2,284</td>
</tr>
<tr>
<td>Computer User Support Specialists</td>
<td>1,533</td>
<td>505</td>
<td>-1,028</td>
</tr>
<tr>
<td>Computer Systems Analysts</td>
<td>1,258</td>
<td>405</td>
<td>-853</td>
</tr>
<tr>
<td>Web Developers</td>
<td>627</td>
<td>90</td>
<td>-537</td>
</tr>
<tr>
<td>Database Administrators</td>
<td>579</td>
<td>48</td>
<td>-531</td>
</tr>
<tr>
<td>Information Security Analysts</td>
<td>548</td>
<td>116</td>
<td>-432</td>
</tr>
<tr>
<td>Software Quality Assurance Analysts and Testers</td>
<td>528</td>
<td>92</td>
<td>-436</td>
</tr>
</tbody>
</table>
Current Hiring Trends

Technology job postings nationally have fallen dramatically in 2023. Roles that are posted showed evidence of employers gravitating towards more experienced candidates. Simultaneously, some major employers continue to eliminate 4-year degree requirements for tech roles they are posting.

**JOB POSTINGS 5-YEAR TREND**

Technology job postings in Minnesota hit their lowest level in more than 10 years in September 2023. There were 6,213 unique roles posted, which is down 62% from September 2022.

**JOB POSTINGS BY EDUCATIONAL ATTAINMENT**

Minnesota employers continue to ease degree requirements for roles posted in 2023 in better alignment with national trends.
Diversity

Like other industry clusters, diversity remains a challenge within the tech sector. This is true from both a racial and gender perspective. Full inclusion will require all parts of the ecosystem to work together to inspire, hire, develop, and retain diverse technologists.

**OVERALL MINNESOTA TECH SECTOR INCLUSION**

<table>
<thead>
<tr>
<th>Percent of Tech Workforce</th>
<th>Percent Across All Occupations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Women</td>
<td>27%</td>
</tr>
<tr>
<td>Hispanic or Latino</td>
<td>2.4%</td>
</tr>
<tr>
<td>Black or African American</td>
<td>3.5%</td>
</tr>
</tbody>
</table>

If representation in tech fields mirrored representation across all occupations, the additional 23% of women, 2.3% of Hispanic/Latino, and 1.9% of Black or African Americans would result in an additional **28,000 TECHNOLOGISTS**

**GENDER AND RACIAL REPRESENTATION FOR HIGH DEMAND ROLES**

<table>
<thead>
<tr>
<th>Role</th>
<th>Women</th>
<th>Black or African American</th>
<th>Hispanic or Latino</th>
</tr>
</thead>
<tbody>
<tr>
<td>Software Developers</td>
<td>21%</td>
<td>2%</td>
<td>2%</td>
</tr>
<tr>
<td>Computer Occupations, All Other</td>
<td>30%</td>
<td>5%</td>
<td>3%</td>
</tr>
<tr>
<td>Computer User Support Specialist</td>
<td>28%</td>
<td>5%</td>
<td>3%</td>
</tr>
<tr>
<td>Computer Systems Analyst</td>
<td>39%</td>
<td>4%</td>
<td>2%</td>
</tr>
<tr>
<td>Web Developers</td>
<td>35%</td>
<td>3%</td>
<td>3%</td>
</tr>
</tbody>
</table>
K-12 Education

Minnesota employers will not be able to remain competitive in the future without a strong tech talent pipeline. According to Code.org, Minnesota continues to rank last in the country in computer science offerings at public high schools. Our state must continue to make progress in terms of policy, inclusion, and enablement in education.

8% of MINNESOTA HIGH SCHOOL STUDENTS ENROLLED IN A COMPUTER SCIENCE COURSE IN 2021-2022

MINNESOTA RANKS 50th IN % OF HIGH SCHOOLS OFFERING COMPUTER SCIENCE COURSEWORK, 28% VS 57% NATIONALLY

ENROLLMENT BY RACE/ETHNICITY, AND GENDER

<table>
<thead>
<tr>
<th>Race/Ethnicity</th>
<th>Percent Enrolled</th>
</tr>
</thead>
<tbody>
<tr>
<td>American Indian or Alaska Native</td>
<td></td>
</tr>
<tr>
<td>Native Hawaiian or Pacific Islander</td>
<td></td>
</tr>
<tr>
<td>Black</td>
<td></td>
</tr>
<tr>
<td>Hispanic/Latino/a</td>
<td></td>
</tr>
<tr>
<td>Multiracial</td>
<td></td>
</tr>
<tr>
<td>White</td>
<td></td>
</tr>
<tr>
<td>Asian</td>
<td></td>
</tr>
<tr>
<td>Students who identify as female</td>
<td></td>
</tr>
<tr>
<td>Students who identify as male</td>
<td></td>
</tr>
</tbody>
</table>

Minnesota passed its first ever computer science legislation in 2023. Work has begun on a statewide plan to get Minnesota out of last place.

COMPARATIVE ACCESS TO COMPUTER SCIENCE COURSES

(Percenage of high schools offering)

<table>
<thead>
<tr>
<th>State</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Minnesota</td>
<td>28%</td>
</tr>
<tr>
<td>South Dakota</td>
<td>42%</td>
</tr>
<tr>
<td>Wisconsin</td>
<td>56%</td>
</tr>
<tr>
<td>North Dakota</td>
<td>59%</td>
</tr>
<tr>
<td>Iowa</td>
<td>83%</td>
</tr>
</tbody>
</table>

Code.org
REFERENCES

2023 State of Computer Science Education. Code.org


eIMPACT Minnesota Tech Workforce. eIMPACT.


The Economic Status of Minnesotans 2023. Minnesota State Demographic Center Department of Administration.