Closing the Digital Skill Divide

Digital Skill Saturation and Policy Implications

July 12, 2023

The views expressed today are my own and do not necessarily represent the views of the Federal Reserve Bank of Atlanta or the Federal Reserve System
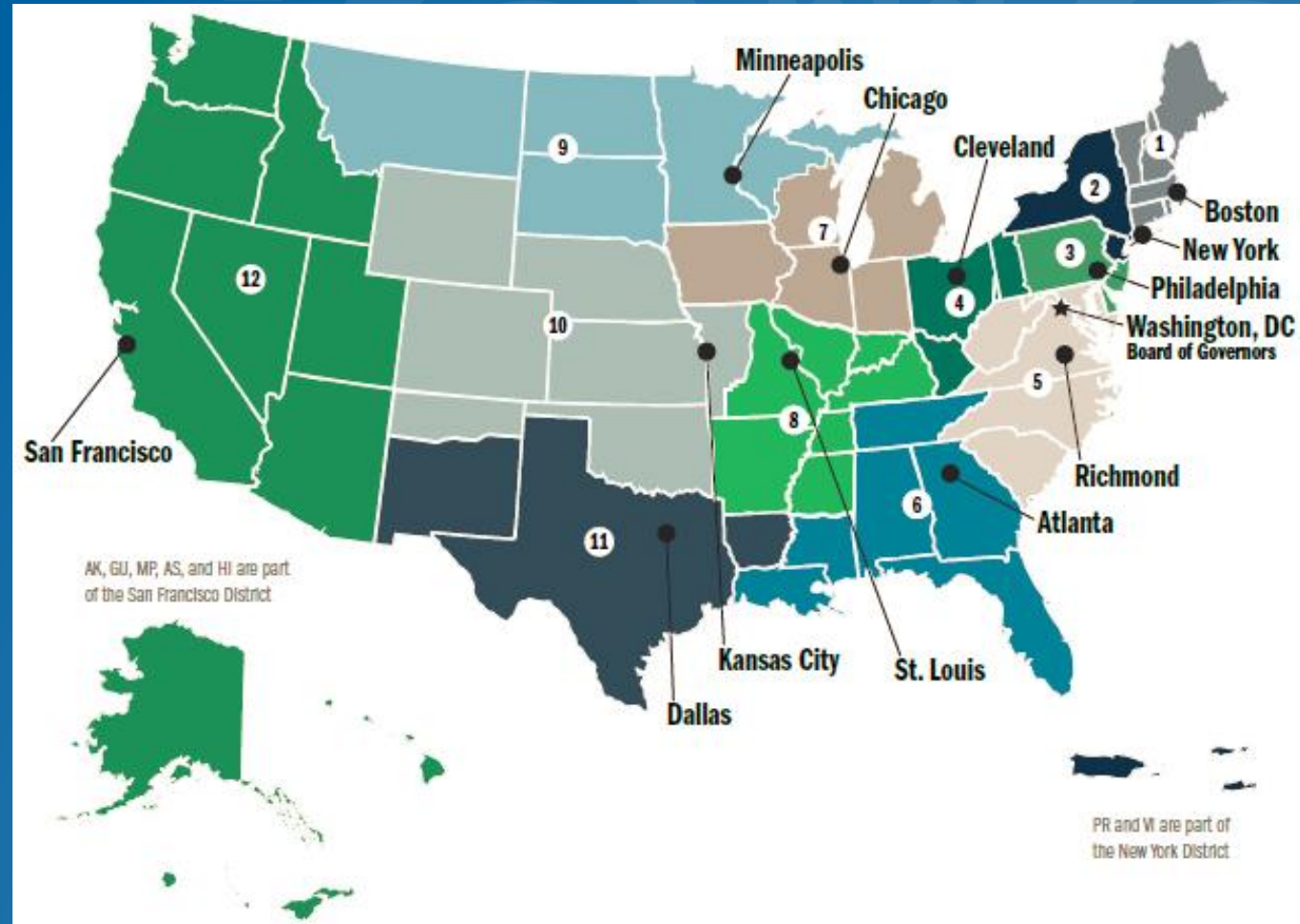
Atlanta Fed
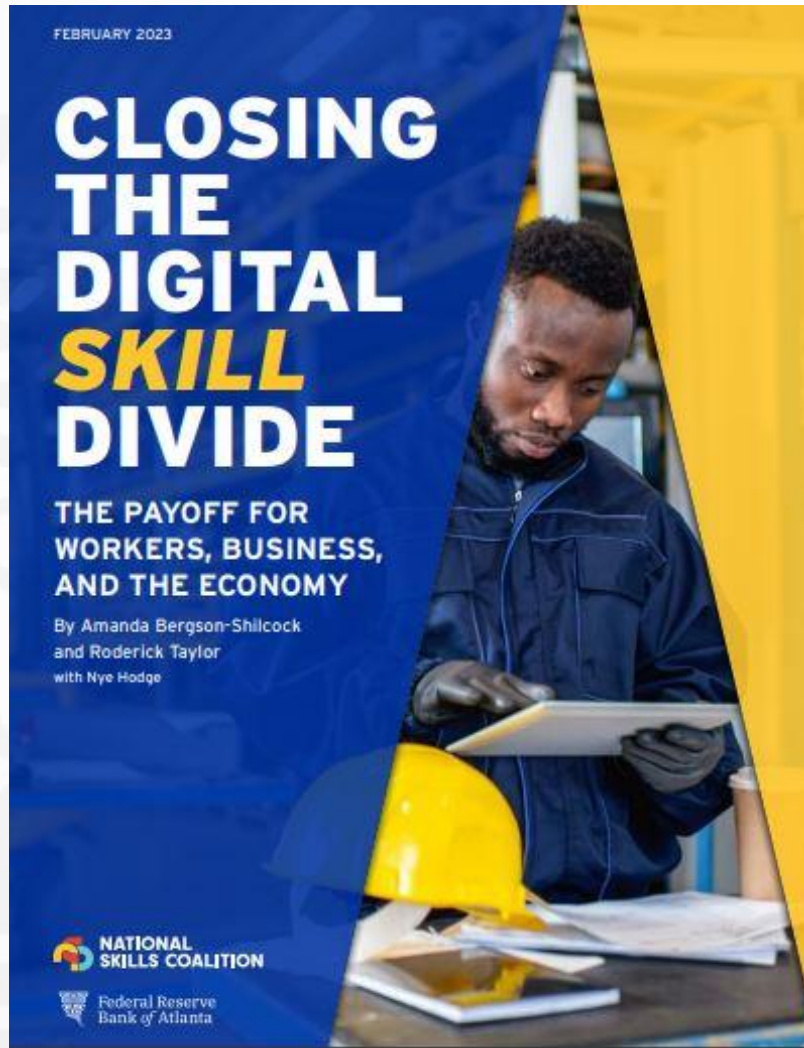Center for Workforce &
Economic Opportunity

The Federal Reserve

Responsible for monetary policy, supervision and regulation of banks, and payment systems.

The Dual Mandate
1. Stable Prices
2. Maximum Employment
   a. Community Development
      - EMAR

Federal Reserve
Bank *of* Atlanta

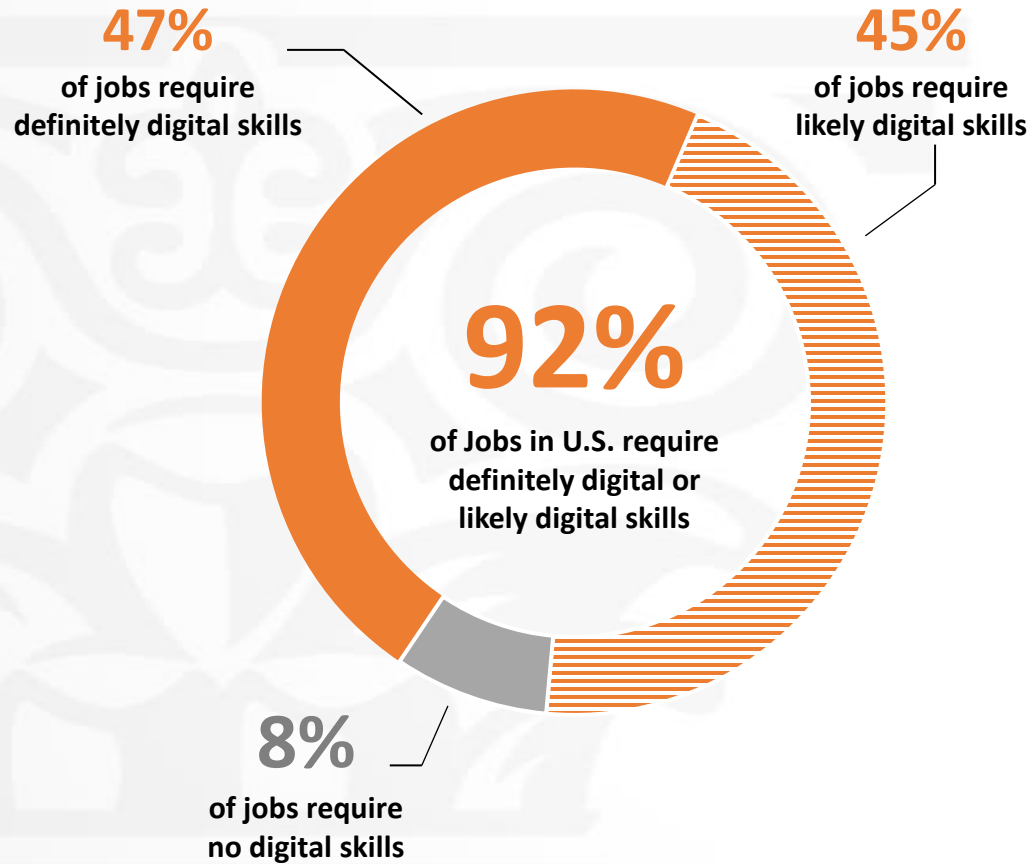# Today's Conversation Highlights Key Findings

- Digital Equity Act

- Federal Reserve Bank of Atlanta and National Skills Coalition (NSC) partnership

- Presenting published and unpublished results from the report

- Lightcast data underlie the analysis
  - 43 million online job ads from 2021

National Skills Coalition
https://tinyurl.com/DigitalSkillDivide

Virtually All Jobs Require Digital Skills...

Yet 1/3 workers lack basic digital literacy.

47%
of jobs require
definitely digital skills

45%
of jobs require
likely digital skills

92%
of Jobs in U.S. require
definitely digital or
likely digital skills

8%
of jobs require
no digital skills

Based on analysis of 43 million online job ads from 2021 Lightcast data.

*National data. For details, see full report: **Closing the Digital Skill Divide** (National Skills Coalition, 2023.)*

Definitely Digital	Likely Digital	Not Digital
Microsoft Office	Scheduling	Self-Starter
Computer Literacy	Teaching	Problem Solving
Salesforce	Patient Care	Creativity
Information Security	Inventory Management	Leadership
Machine Learning	Key Performance Indicators (KPIs)	Cardiopulmonary Resuscitation (CPR)

How were skills categorized?
15,000 distinct skills in the 2021 Lightcast data.
Authors manually coded the top half (7,500), which accounted
for 99.99% of job postings.

Demand for Digital Skills is Saturated Across U.S.
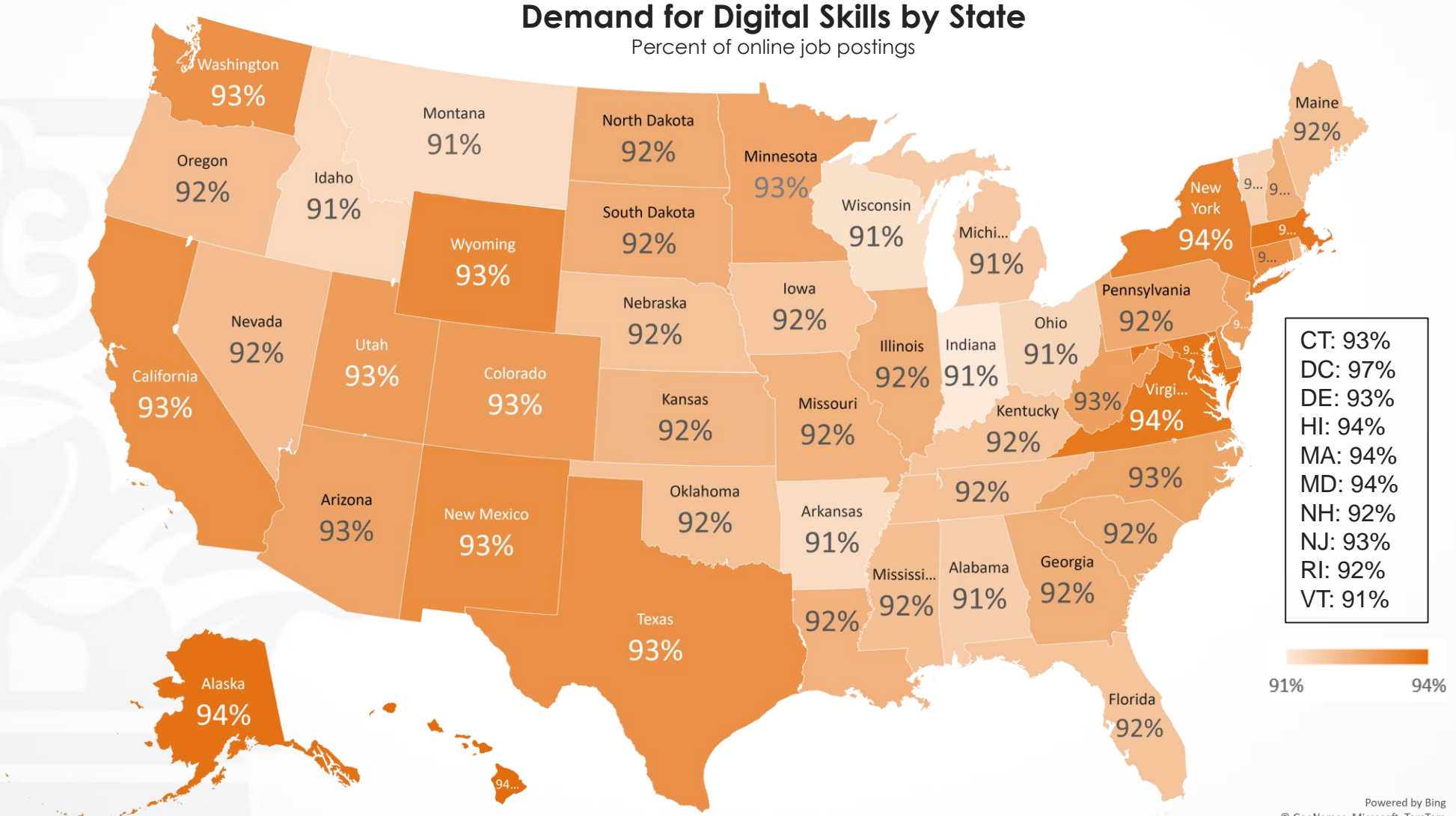
Demand for Digital Skills by State
Percent of online job postings

CT: 93%
DC: 97%
DE: 93%
HI: 94%
MA: 94%
MD: 94%
NH: 92%
NJ: 93%
RI: 92%
VT: 91%

91% — 94%

National data. For details, see full report: **Closing the Digital Skill Divide** *(National Skills Coalition, 2023.)*

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All Industries Require Digital Skills

Demand for Digital Skills by Industry
Percent of online job postings

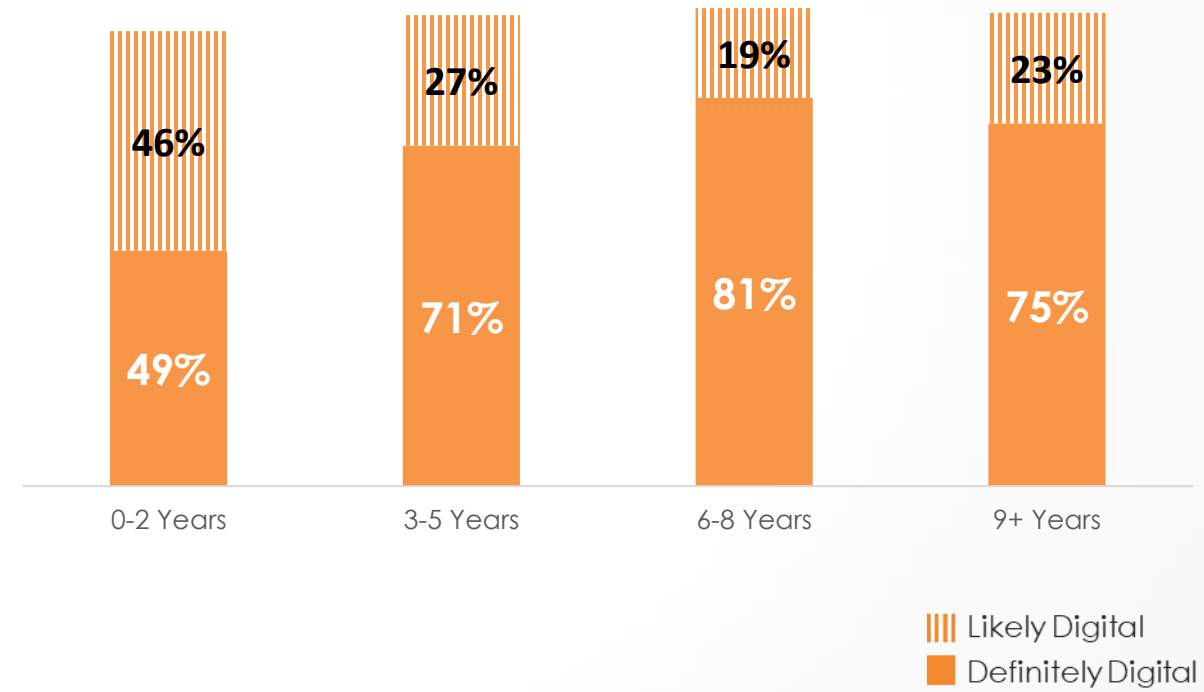| Industry	%
Information	99%
Finance and Insurance	99%
Professional, Scientific, and Technical Services	98%
Educational Services	96%
Public Administration	96%
Management of Companies and Enterprises	96%
Retail Trade	95%
Wholesale Trade	95%
Health Care and Social Assistance	95%
Real Estate and Rental and Leasing	94%
Manufacturi...	93%
Mining, Quarrying, and Oil and Gas Extraction	92%
Utilities	91%
Construction	91%
Arts, Entertainment, and Recreation	90%
Administrative and Support and Waste Management and Remediation Services	89%
Agriculture, Forestry, Fishing and Hunting	86%
Other Services	86%
Accommodation and Food Services	85%
Transportation and Warehousing	77%

National data. For details, see full report: **Closing the Digital Skill Divide** *(National Skills Coalition, 2023.)*

Digital Skills Required Regardless of Education or Experience

Demand for Digital Skills by
Education Requirement
Percent of job postings
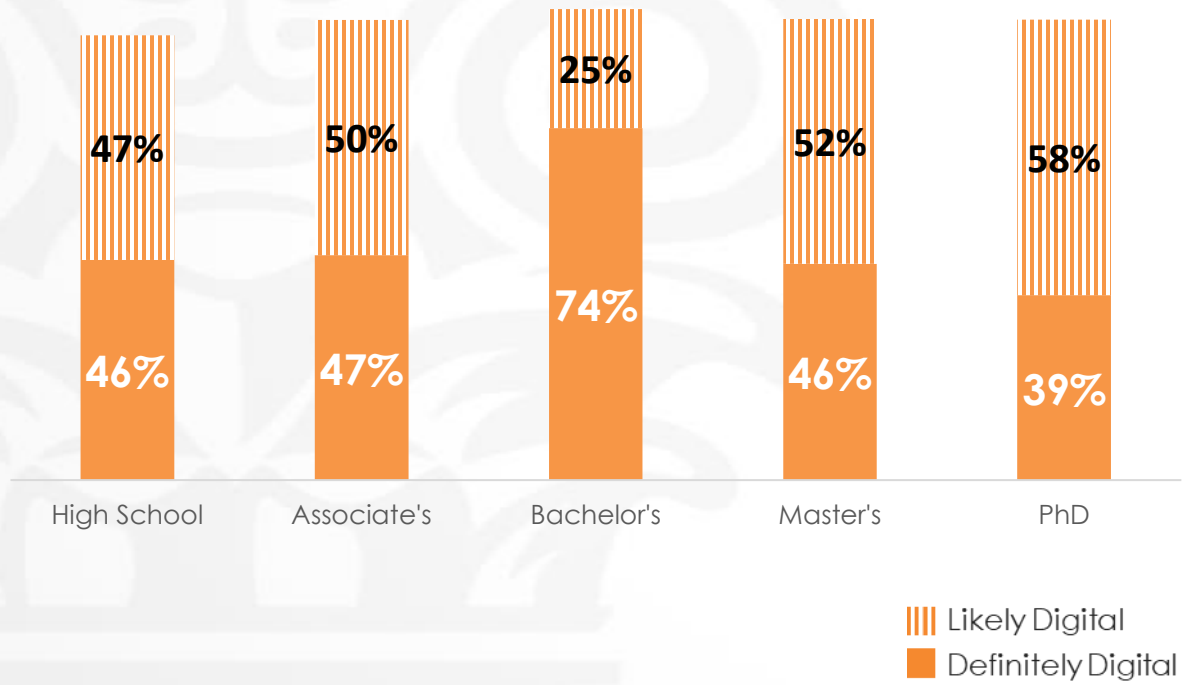
Demand for Digital Skills by
Years of Experience Requirement
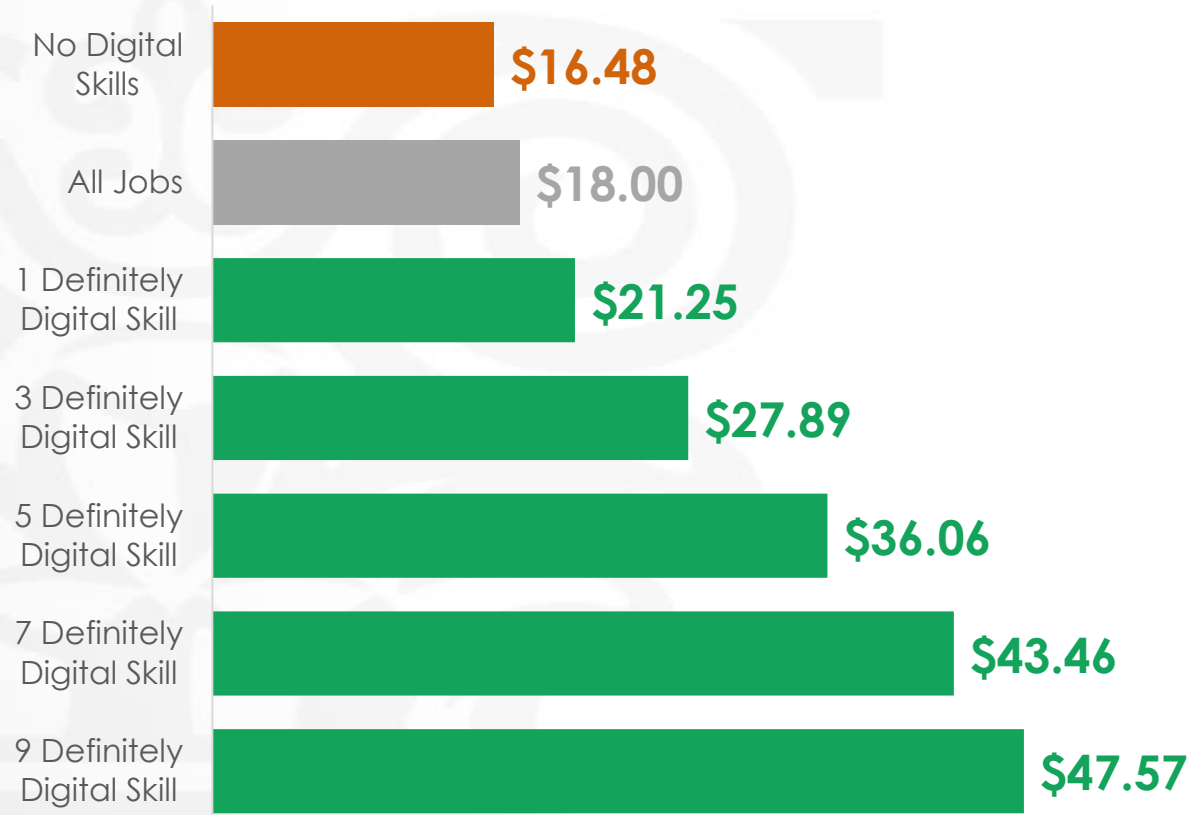Percent of jobs postings

Education Requirement chart:

Education	Likely Digital	Definitely Digital
High School	47%	46%
Associate's	50%	47%
Bachelor's	25%	74%
Master's	52%	46%
PhD	58%	39%

||| Likely Digital
■ Definitely Digital

Years of Experience Requirement chart:

Experience	Likely Digital	Definitely Digital
0-2 Years	46%	49%
3-5 Years	27%	71%
6-8 Years	19%	81%
9+ Years	23%	75%

||| Likely Digital
■ Definitely Digital

*National data. For details, see full report: **Closing the Digital Skill Divide** (National Skills Coalition, 2023.)*

Digital Skills Pay

Workers in GA Earn More…

When they acquire more digital skills

National Median Hourly Earnings

Category	Earnings
No Digital Skills	$16.48
All Jobs	$18.00
1 Definitely Digital Skill	$21.25
3 Definitely Digital Skill	$27.89
5 Definitely Digital Skill	$36.06
7 Definitely Digital Skill	$43.46
9 Definitely Digital Skill	$47.57

▲ **29%:** No Digital Skills to One

▲ **70%:** One Digital Skill to Five

▲ **32%:** Five Digital Skills to Nine

▲ **189%:** No Digital Skills to Nine

Workers Can Contribute More…

To State and Federal Taxes
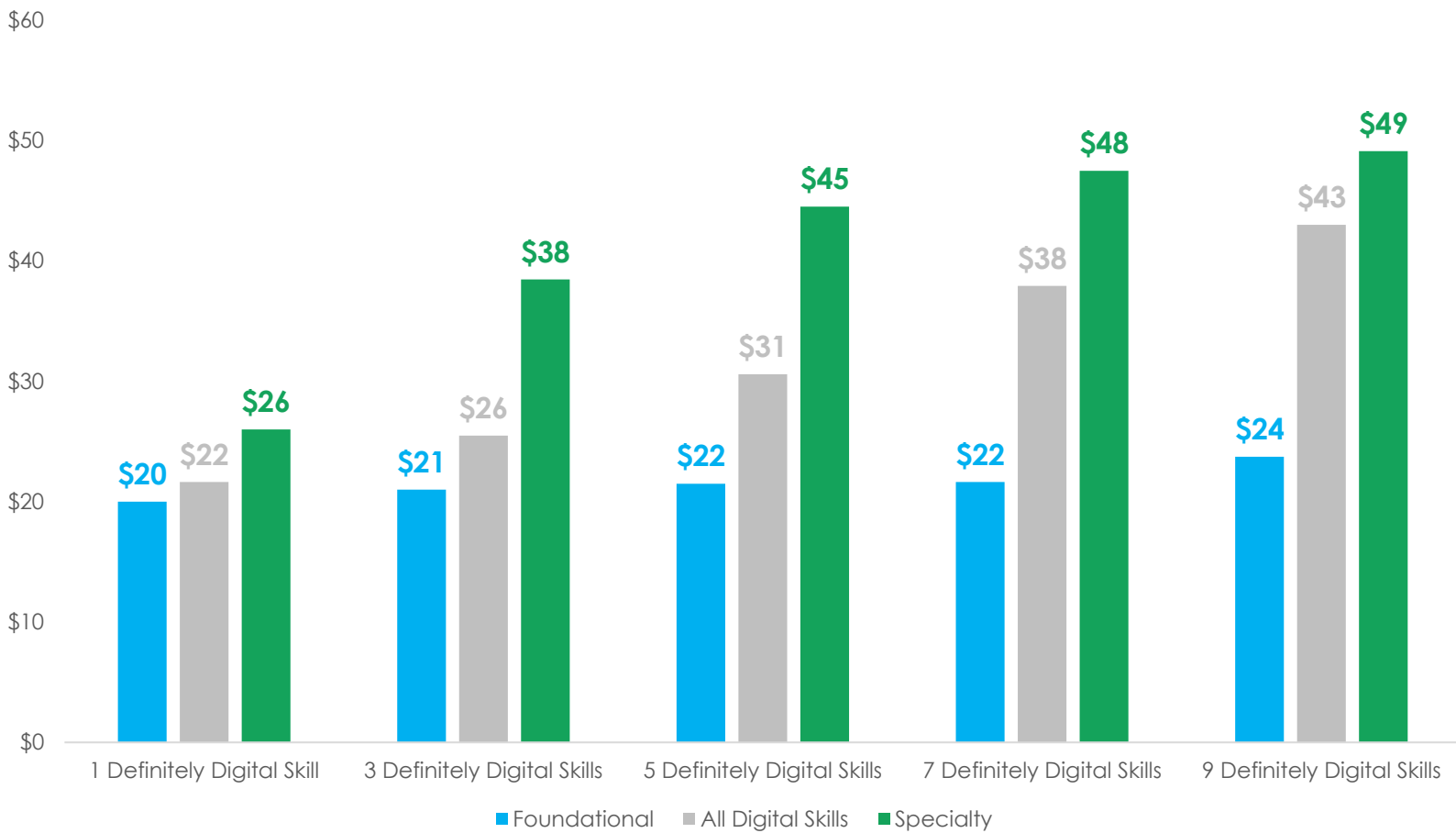
$1,387 to $2,816 (additional contribution)

This tax example is for NC for a worker moving from no digital skills to one.

Annual income tax revenue dependent on family size and composition.

Note: Example calculated via taxsim.app: an interactive US Individual Income Tax simulator

*National data. For details, see full report: **Closing the Digital Skill Divide** (National Skills Coalition, 2023.)*

Specialty Skills Pay Even More

Workers Earn More…
When they acquire industry/occupation specific digital skills
National Median Hourly Earnings

Legend: ■ Foundational ■ All Digital Skills ■ Specialty

Category	Foundational	All Digital Skills	Specialty
1 Definitely Digital Skill	$20	$22	$26
3 Definitely Digital Skills	$21	$26	$38
5 Definitely Digital Skills	$22	$31	$45
7 Definitely Digital Skills	$22	$38	$48
9 Definitely Digital Skills	$24	$43	$49

Source: Presenter's analysis of Lightcast data. For details, see full report: **Closing the Digital Skill Divide** *(National Skills Coalition, 2023.)*

Most Requested Definitely Digital Skills

Employers Pay a Premium…

For Specialty Skills
National Median Annual Earnings for Jobs Requesting Skill
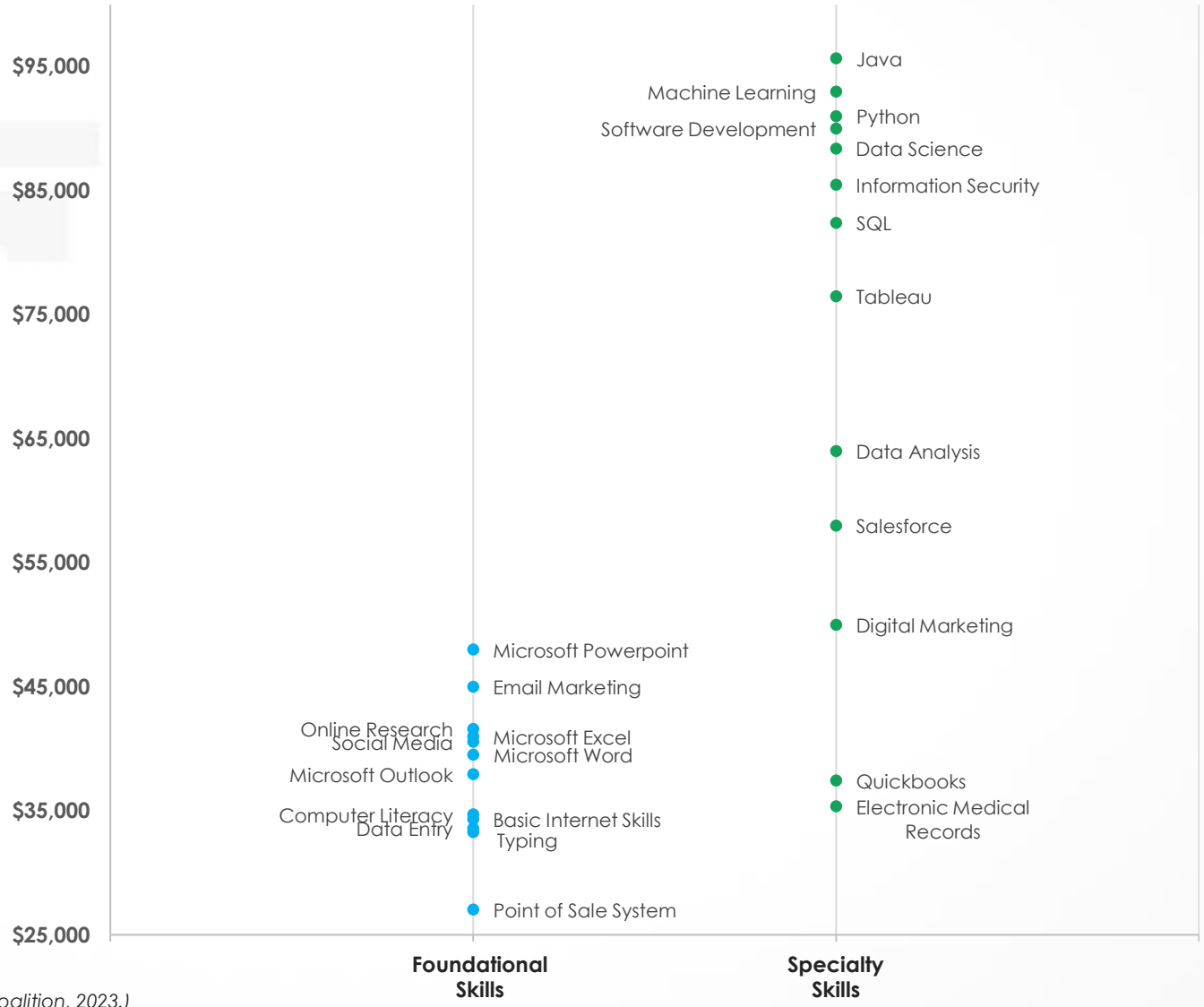
National data. For details, see full report: **Closing the Digital Skill Divide** *(National Skills Coalition, 2023.)*

Georgia's most in-demand *foundational* digital skills

- Computer Literacy
- Typing
- Data Entry
- Word Processing
- Microsoft Excel
- Microsoft Outlook

*Not in rank order. Georgia-specific data from unpublished NSC analysis conducted as part of **Closing the Digital Skill Divide** report.*

Select *industry-specific* skills with strong demand in Georgia:

Finance and insurance: Mobile banking; information security; SQL; Nationwide Mortgage Licensing System (NMLS)

Healthcare: Electronic medical records; radiologic technology

Manufacturing: Enterprise Resource Planning (ERP) software; robotics; Computer Numerical Control (CNC); Programmable Logic Controller (PLC)

**Retail**: SAS retail analytics and consumer goods software; Market Trend; robotics; credit card applications

*Georgia-specific data from unpublished NSC analysis conducted as part of **Closing the Digital Skill Divide** report.*

Computer Literacy: The Building Blocks to Jobs

Basic Troubleshooting

Mobile Devices

Microsoft Office

Connecting to Netflix != Computer Literacy

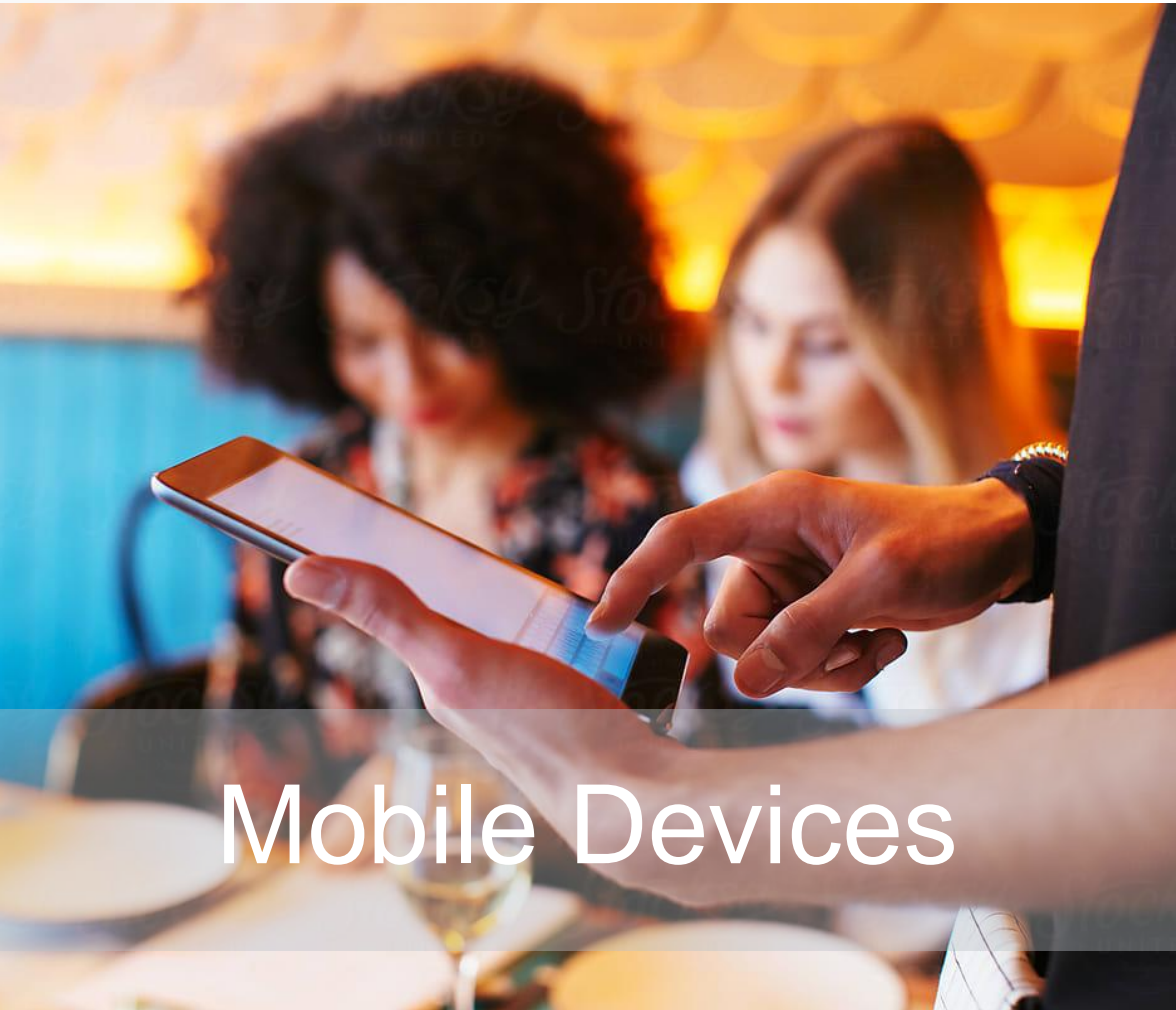# Jobs Are More Digital Than We Realize
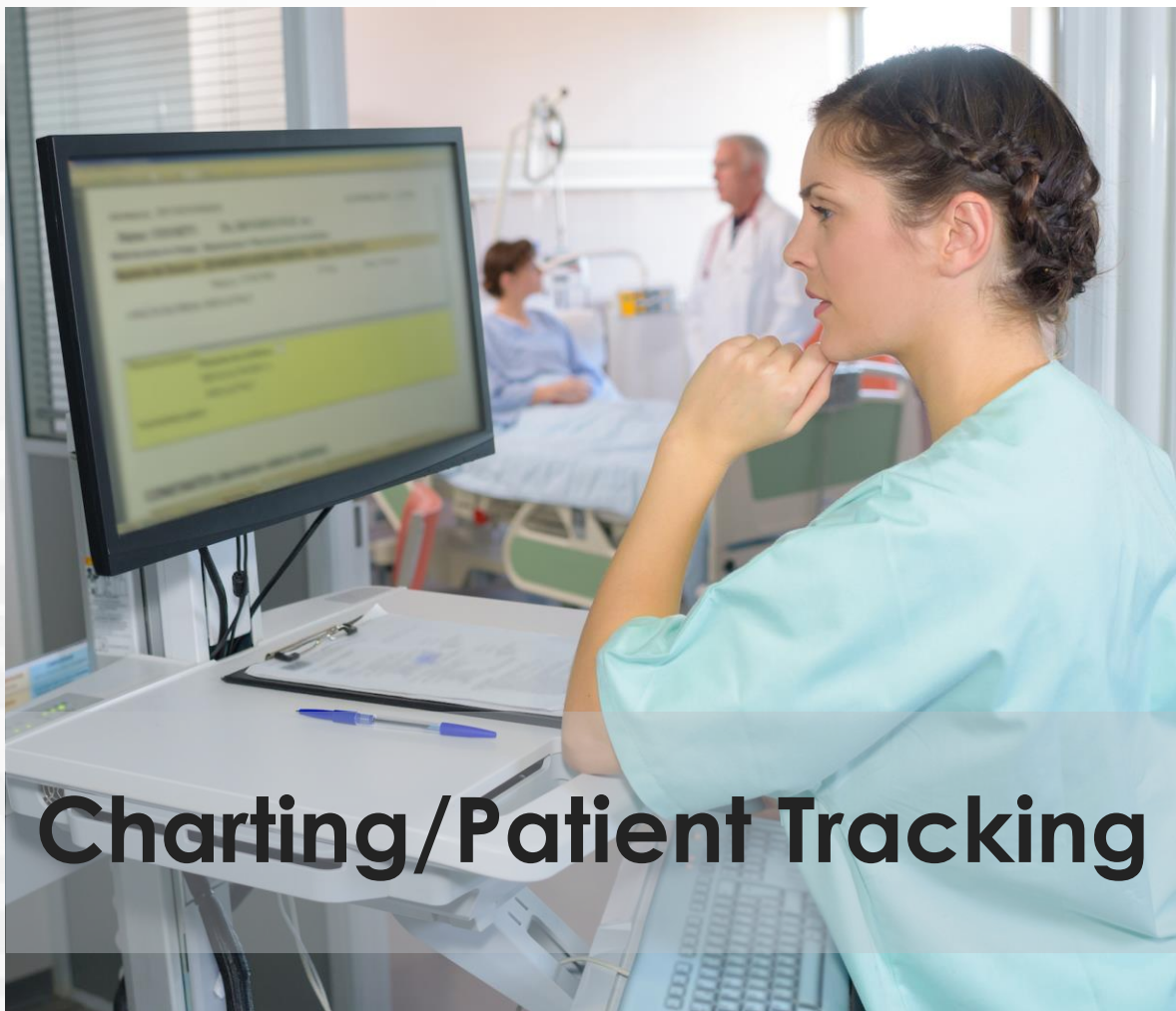
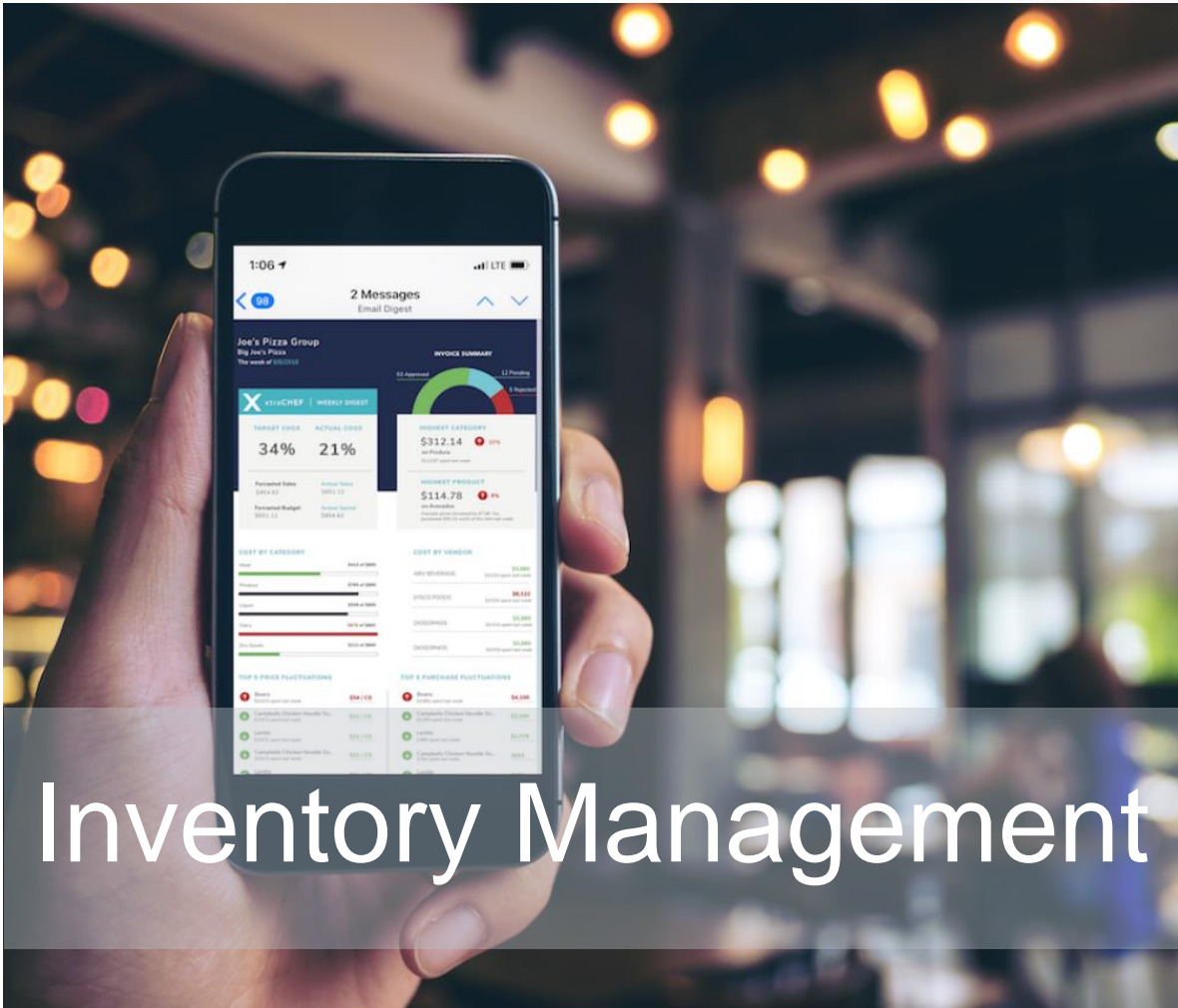**Charting/Patient Tracking**

Medical Devices
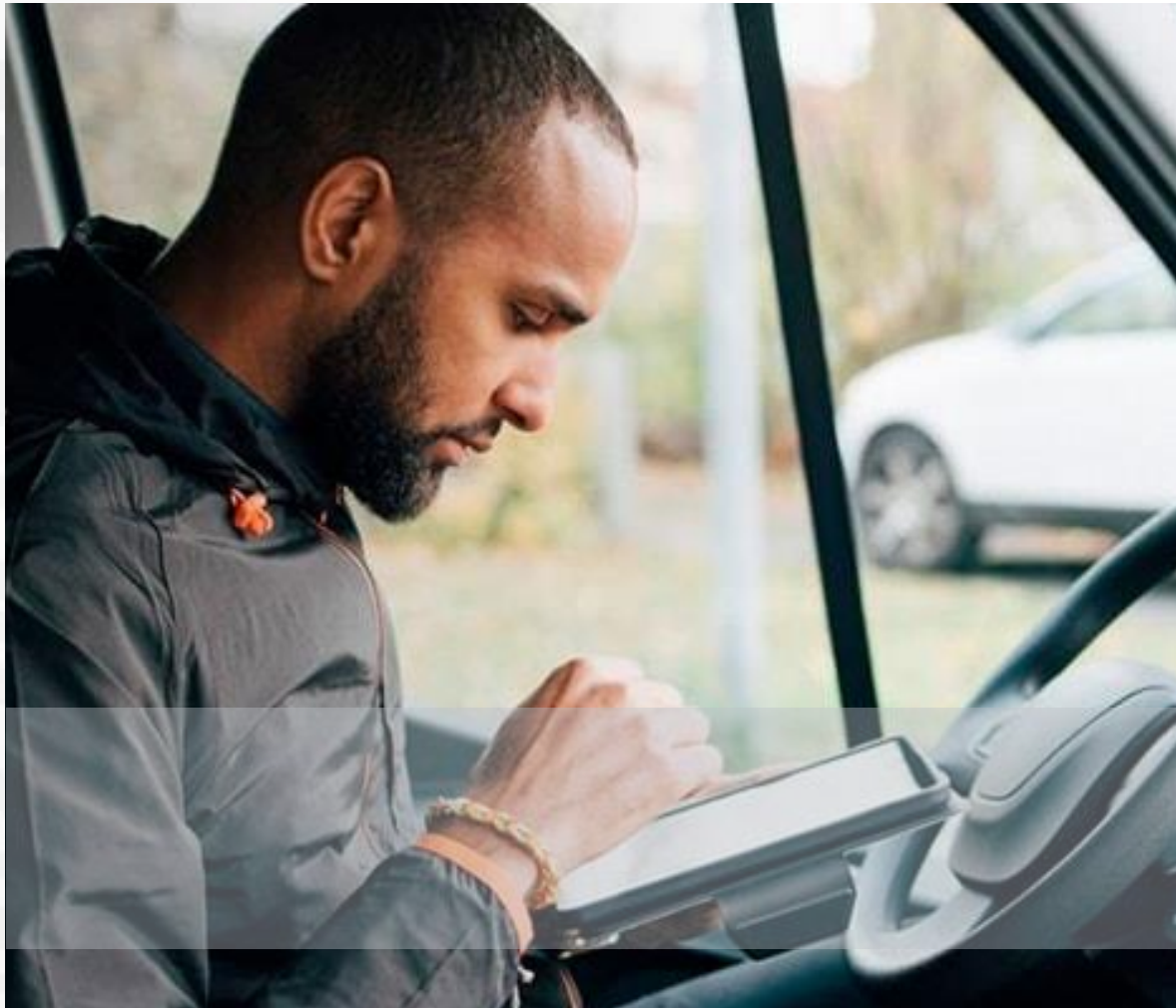
Jobs Are More Digital Than We Realize

Mobile Devices

Inventory Management

Jobs Are More Digital Than We Realize

Aerospace workers using augmented reality.

Photo credit: Airbus

Agriculture workers using in-cab tractor technology (e.g., AutoTrac) for efficient tractor operation

Welders using collaborative robots ("cobots") in advanced manufacturing

Photo credit: Smooth Robotics

1. Use Digital Equity Act and BEAD funding to expand digital skills training.

2. Advocate for investments in proven digital skill-building strategies:

**More details in the full report:
www.tinyurl.com/BoostingDL**

▶ **Industry sector partnerships** between education/workforce training providers and employers

▶ **Contextualized** and integrated learning

▶ Quality **industry-recognized credentials** that are stackable and portable

3. Combine these findings with Census data to target services and close equity gaps for covered populations.

Equity and Job Training

In a Perfect World…

Industry Representation = U.S. Labor Market Representation

Demographic Distribution of Industries

	Select Industries	Asian and Pacific Islander	Black/African American	Hispanic	Native American	White
	U.S. Labor Market	7%	12%	19%	1%	61%
Highest Digital Demand	Information	10%	10%	12%	0%	66%
	Professional, Scientific, and Technical Services	13%	7%	10%	0%	68%
	Management of companies and enterprises	13%	8%	9%	0%	67%
	Finance and Insurance	9%	11%	11%	1%	67%
	Manufacturing	8%	10%	18%	1%	63%
Lowest Digital Demand	Arts, Entertainment, and Recreation	5%	9%	14%	1%	69%
	Health Care and Social Assistance	8%	17%	14%	1%	59%
	Transportation and Warehousing	6%	21%	23%	1%	47%
	Retail Trade	6%	13%	19%	1%	60%
	Accommodation and Food Services	8%	13%	28%	0%	48%

Legend:
- Above Parity
- Parity
- Below Parity

Note: Rows do not sum to 100% because 'Other' is not included in this illustration.

Source: Presenter's analysis of Current Population Survey (March 2022) data. For details, see full report: **Closing the Digital Skill Divide** (National Skills Coalition, 2023.)
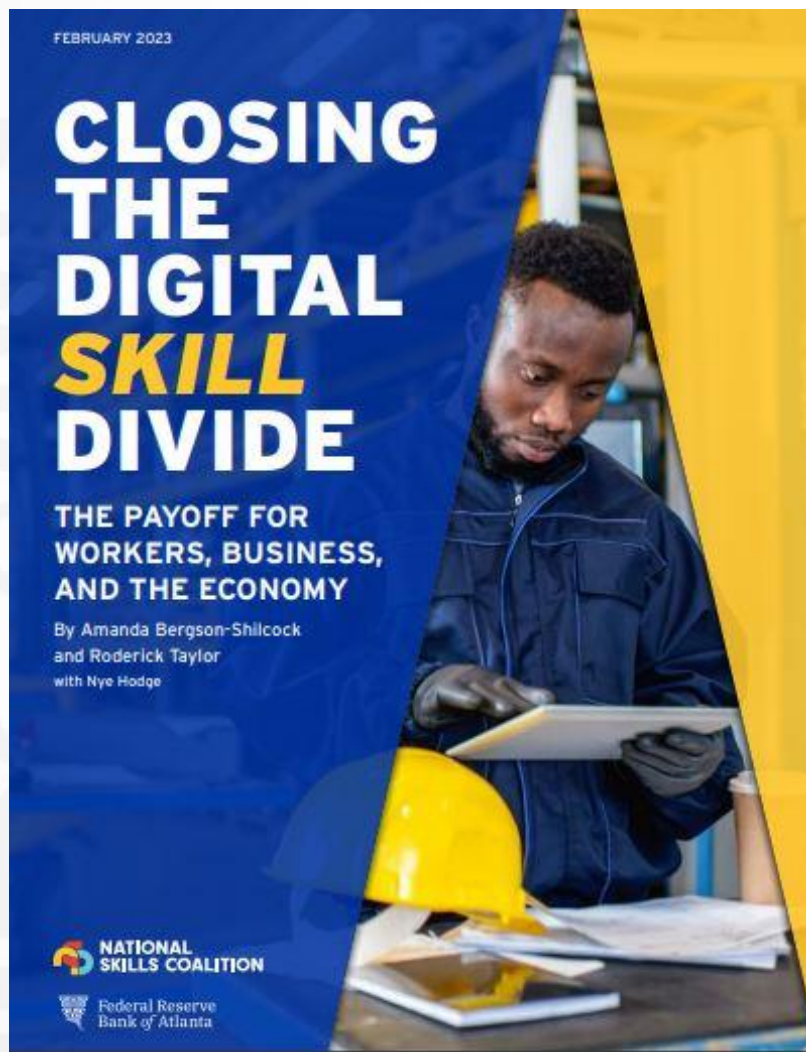
4. Embed digital skills throughout other workforce investments, such as incumbent-worker training funds.

5. Make sure workforce and education stakeholders are at the table to inform workforce planning.

Check Out The Full Report!

Feel Free to Reach Out:

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National Skills Coalition

https://tinyurl.com/DigitalSkillDivide