

# SKILLS ECONOMY TOOLKIT

## ACTION GUIDE:

## ARTIFICIAL INTELLIGENCE IN THE SKILLS ECONOMY

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### Introduction

Artificial intelligence is rapidly transforming skills systems, from how we match candidates to jobs, to how we validate competencies, to how we predict future skill needs. AI offers powerful opportunities to make skills more transparent, accessible, and actionable. But it also introduces risks of bias, opacity, and exclusion if not implemented responsibly.

This guide will help you understand AI's role in the skills economy, evaluate AI-powered tools critically, and implement AI in ways that expand opportunity rather than reinforce inequality.

### Why This Matters Now

AI isn't coming to skills work; it's already here, making decisions about who gets hired, what training gets recommended, and which skills count. *Right now, AI-powered applicant tracking systems are screening thousands of resumes, inferring skills from job descriptions, and ranking candidates before any human sees them. Machine learning algorithms are analyzing millions of job postings to identify emerging skills faster than any workforce center can. Workers are using ChatGPT to translate their experience into skills language. Training platforms are deploying AI to create personalized learning pathways.*

This technology is moving faster than most workforce systems can adapt, which is exactly why workforce boards must engage with it now, not five years from now, when the decisions have already been made.

The Promise	The Risk
<ul style="list-style-type: none"><li>• Surface Hidden Talent</li><li>• Real-Time Labor Market Intelligence</li></ul>	<ul style="list-style-type: none"><li>• Amplified Bias</li><li>• Black Box Decisions</li></ul>

- Personalized Career Navigation
- Skills Translation Across Industries

- Narrow Definitions of Skills
- Vendor Control


Given how quickly AI is being adopted and used by job seekers, recruiters, and employers alike, it is critical to understand the promises, risks, and potential impact of AI on people navigating a growing skills economy, where skills and credential data are required to participate.

In this action guide, we explore how AI is used in skills systems, uncover the risks and biases, and outline the steps and tools workforce board members can use to support their regions and communities.

# Step 1: Understand AI Applications in Skills Systems

AI is being used across the skills ecosystem in multiple ways. Understanding these applications helps you identify where AI might help—and where extra caution is needed.

Application	What It Does	Key Risks
<b>Resume Screening</b>	Automatically filters candidates based on resume content, scoring, and ranking	May discriminate against non-traditional backgrounds, gaps in employment, or unfamiliar school names
<b>Skills Inference</b>	Predicts skills from job titles, education, or work history without direct assessment	May miss skills from non-traditional pathways or inaccurately assign competencies
<b>Job Matching</b>	Recommends candidates to jobs and jobs to candidates based on skills, experience, and fit	May reinforce existing patterns, limit career mobility, or create filter bubbles
<b>Proctoring &amp; Assessment</b>	Monitors test-takers via video, detects cheating, or grades responses automatically	Privacy concerns, accessibility issues, bias in facial recognition, and false positives
<b>Learning Pathways</b>	Recommends training and upskilling based on current skills and career goals	May narrow options, push profitable programs, or miss innovative pathways
<b>Labor Market Forecasting</b>	Predicts future skill demand, emerging occupations, and workforce trends	Predictions may be wrong, overweight current patterns, or miss disruptions
<b>Chatbots &amp; Advisors</b>	Provides career guidance, answers questions, and helps navigate resources	May provide inaccurate info, lack empathy, or fail to escalate complex issues

 **Action Item:** Use the AI Application Inventory (Tool 1) to map where AI is being used in your ecosystem.

# Step 2: Recognize and Address AI Bias

AI systems learn from historical data, which often reflects past discrimination. Without intervention, AI can amplify existing inequities at scale. Understanding how bias enters systems is the first step to preventing it.


Bias Source	Example in Skills Systems
<b>Training Data Bias</b>	Resume screener trained on historically successful candidates reflects past discrimination in hiring (e.g., preference for male candidates in tech roles because most past hires were male)
<b>Proxy Variables</b>	AI uses ZIP code to predict skills, which correlates with race and income, effectively discriminating based on protected characteristics
<b>Label Bias</b>	AI trained to predict 'successful' employees based on biased performance reviews or subjective ratings from managers
<b>Sampling Bias</b>	The matching algorithm is trained primarily on traditional 4-year college graduates, underrepresenting non-degree pathways and creating worse matches for those populations
<b>Design Choices</b>	Assessment tool penalizes candidates who take breaks or work slowly, discriminating against people with disabilities or caregiving responsibilities
<b>Feedback Loops</b>	Job matching algorithm shows fewer opportunities to certain groups, they apply less, the system interprets as less interest, shows even fewer, the cycle reinforces itself

**Action Item:** Use the AI Bias Assessment Framework (Tool 2) to evaluate AI systems for potential bias.

## Step 3: Apply Responsible AI Principles

Responsible AI isn't just about avoiding harm; it's about actively designing systems that promote fairness, transparency, and accountability. These principles should guide every AI implementation decision.

Principle	What It Means	How to Implement
<b>Fairness</b>	AI treats all groups equitably, doesn't discriminate based on protected characteristics	Test for disparate impact across demographics, use diverse training data, and conduct regular bias audits
<b>Transparency</b>	People understand when AI is being used and how decisions are made	Disclose AI use, provide plain-language explanations, and document decision factors
<b>Accountability</b>	Clear responsibility for AI decisions, processes for appeal and correction	Assign oversight roles, create complaint mechanisms, and maintain human review for consequential decisions
<b>Privacy</b>	Protect personal data, minimize collection, and allow individuals to control	Obtain consent, encrypt data, provide opt-out options, and honor deletion requests
<b>Human Oversight</b>	Humans remain in the loop for significant decisions, and can override AI	Require human review for rejections, enable appeals, don't fully automate consequential decisions
<b>Continuous Monitoring</b>	Regular testing and auditing to catch drift, degradation, or emerging bias	Quarterly fairness audits, track outcomes by demographics, update models as data evolves

 **Action Item:** Use the Responsible AI Principles Checklist (Tool 3) to evaluate your AI implementations.

## Step 4: Evaluate AI Vendors Critically

Most workforce boards will purchase AI tools rather than build them. Rigorous vendor evaluation is essential to ensure tools meet responsible AI standards.

### Questions to Ask AI Vendors

Topic	Critical Questions
<b>Training Data</b>	What data was the AI trained on? How diverse is it? Does it include populations we serve? How recent is it?
<b>Bias Testing</b>	Have you tested for bias? Can you share the results? What were disparate impact rates? How often do you re-test?
<b>Explainability</b>	Can you explain how decisions are made? What factors does the AI consider? Can individuals see why they got a particular result?
<b>Human Oversight</b>	Can we configure human review requirements? Can decisions be appealed? Can we override the AI?
<b>Data Privacy</b>	Who owns the data? How is it stored and protected? Will our data be used to train models for other clients? Can users delete their data?
<b>Performance &amp; Accuracy</b>	What's the accuracy rate? False positive and false negative rates? Does performance vary across demographics?
<b>Compliance</b>	Does it comply with EEO laws? NYC's AI hiring law? EU AI Act? What documentation can you provide?

**Red Flags:** The vendor cannot answer these questions, refuses to be transparent, or makes unrealistic claims about accuracy or lack of bias.

● **Action Item:** Use the AI Vendor Evaluation Scorecard (Tool 4) to compare vendors systematically.

# AI Implementation Tools & Templates

Use these tools to implement AI responsibly in your skills systems.

## TOOL 1: AI Application Inventory

Map where AI is currently used in your ecosystem.

System/Tool	AI Function	High Stakes?	Bias Risk
		<input type="checkbox"/>	<input type="checkbox"/>
		<input type="checkbox"/>	<input type="checkbox"/>
		<input type="checkbox"/>	<input type="checkbox"/>
		<input type="checkbox"/>	<input type="checkbox"/>
		<input type="checkbox"/>	<input type="checkbox"/>
		<input type="checkbox"/>	<input type="checkbox"/>
		<input type="checkbox"/>	<input type="checkbox"/>
		<input type="checkbox"/>	<input type="checkbox"/>
		<input type="checkbox"/>	<input type="checkbox"/>
		<input type="checkbox"/>	<input type="checkbox"/>

**High Stakes:** Impacts access to opportunities, training, jobs, or income

**Bias Risk:** Could discriminate based on protected characteristics

## TOOL 2: AI Bias Assessment Framework

Evaluate AI systems for potential bias.

Bias Assessment Question	Yes	No
Has the training data been examined for demographic representation?	<input type="checkbox"/>	<input type="checkbox"/>
Are historically underrepresented groups adequately represented in training data?	<input type="checkbox"/>	<input type="checkbox"/>
Have proxy variables (ZIP code, school name, etc.) been identified and controlled?	<input type="checkbox"/>	<input type="checkbox"/>
Has the system been tested for disparate impact across protected groups?	<input type="checkbox"/>	<input type="checkbox"/>
Are pass/fail rates comparable across demographic groups (within 4/5ths rule)?	<input type="checkbox"/>	<input type="checkbox"/>
Have false positive and false negative rates been measured by demographics?	<input type="checkbox"/>	<input type="checkbox"/>
Is there a process for individuals to appeal or contest AI decisions?	<input type="checkbox"/>	<input type="checkbox"/>
Can humans override AI recommendations?	<input type="checkbox"/>	<input type="checkbox"/>
Are AI decision factors explainable in plain language?	<input type="checkbox"/>	<input type="checkbox"/>
Is there monitoring in place to detect drift or emerging bias over time?	<input type="checkbox"/>	<input type="checkbox"/>
Have affected communities been consulted about the AI system?	<input type="checkbox"/>	<input type="checkbox"/>

## TOOL 3: Responsible AI Principles Checklist

Verify AI implementations meet responsible AI standards.

Responsible AI Principle	Yes	No
System tested for fairness across demographic groups	<input type="checkbox"/>	<input type="checkbox"/>
Disparate impact documented and within acceptable thresholds	<input type="checkbox"/>	<input type="checkbox"/>
People are notified when AI is being used to make decisions	<input type="checkbox"/>	<input type="checkbox"/>
AI decision factors are explainable	<input type="checkbox"/>	<input type="checkbox"/>
Clear accountability for AI decisions established	<input type="checkbox"/>	<input type="checkbox"/>
Appeal/dispute process available	<input type="checkbox"/>	<input type="checkbox"/>
Human review required for consequential decisions	<input type="checkbox"/>	<input type="checkbox"/>
Privacy impact assessment completed	<input type="checkbox"/>	<input type="checkbox"/>
Data minimization principles applied	<input type="checkbox"/>	<input type="checkbox"/>
Consent obtained for data use	<input type="checkbox"/>	<input type="checkbox"/>
Regular bias audits are scheduled (at least quarterly)	<input type="checkbox"/>	<input type="checkbox"/>
Performance monitoring tracks outcomes by demographics	<input type="checkbox"/>	<input type="checkbox"/>
Incident response plan for AI failures/bias	<input type="checkbox"/>	<input type="checkbox"/>
Staff trained on AI systems and their limitations	<input type="checkbox"/>	<input type="checkbox"/>

# TOOL 4: AI Vendor Evaluation Scorecard

Score vendors on responsible AI practices (1-5 scale, 5=excellent).

Evaluation Criteria	Vendor A	Vendor B	Vendor C
Training data diversity and quality			
Bias testing documentation			
Fairness/disparate impact metrics			
Explainability of decisions			
Human oversight capabilities			
Privacy protections			
Compliance with regulations			
Performance accuracy			
Appeal/dispute mechanisms			
Continuous monitoring			
Customer support and training			
Transparency about limitations			
<b>TOTAL SCORE</b>	<b>/60</b>	<b>/60</b>	<b>/60</b>

## Next Steps

Responsible AI implementation is an ongoing practice. Here's how to get started:

- **Inventory AI use** across your ecosystem
- **Prioritize high-stakes systems** for bias assessment
- **Establish governance** with clear accountability
- **Evaluate new vendors carefully** using the scorecard
- **Require transparency** and explainability
- **Monitor continuously** for drift and bias
- **Engage affected communities** in AI design and oversight

## Additional Resources

- NIST [AI Risk Management Framework](#)
- NYC AI Hiring Law: [Bias audit requirements](#)
- Partnership on AI: [Responsible AI guidance](#)
- AI Now Institute: [Research on AI and equity](#)

*Questions, feedback, or need help developing or implementing your AI strategy?*

*Contact the National Association of Workforce Boards*

[www.nawb.org](http://www.nawb.org)