

# IA: Empleos, Habilidades y Educación

AI Workforce Consortium Report 2025



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# AI Workforce Consortium

accenture

CISCO

cornerstone

eightfold.ai

Google

IBM

indeed

intel

Microsoft

SAP

**Misión:** Preparar a la fuerza laboral actual y futura con conocimientos prácticos y marcos escalables para aprovechar la oportunidad transformadora de la IA en los empleos del sector TIC.

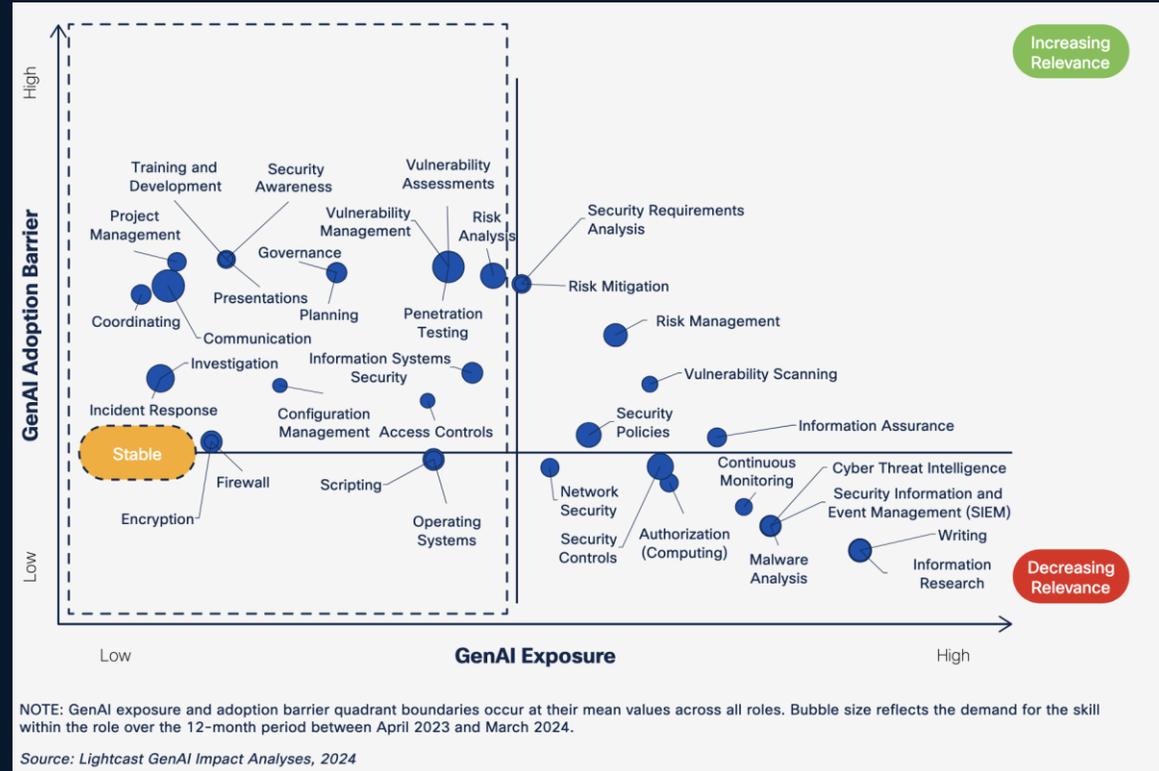
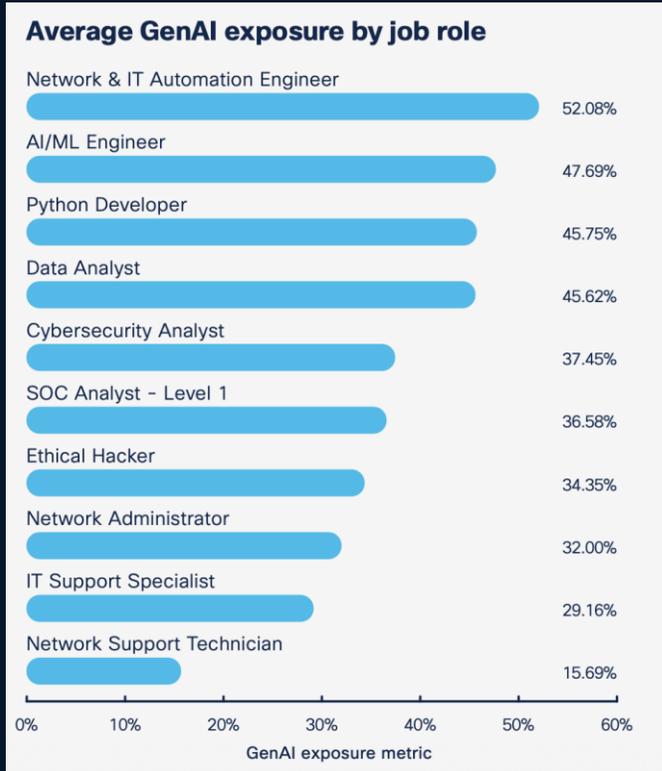
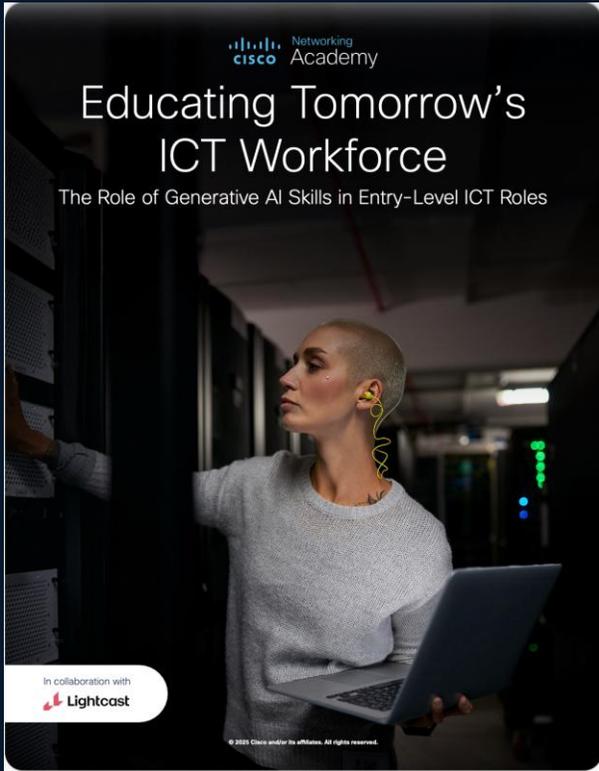
# Primer Report.

## Modelo predictivo sobre el impacto de la IA en los empleos de TIC



**El 92%** de los roles de trabajo en TIC analizados tienen un **alto o moderado potencial de transformación de habilidades con la IA**

# Netacad Report: concentrándose en los empleos de NetAcad



<https://blogs.cisco.com/learning/educating-tomorrows-tech-workforce-a-new-map-for-ai-era-skills>



# Actual Report: Datos del mercado laboral sobre el impacto de la IA en TIC



**El futuro ya está aquí... solo que no está distribuido de manera uniforme.**

**The future is already here – it's just not evenly distributed.**

*William Gibson*

# Habilidades más demandadas y de aparición más rápida

## Infrastructure and Operations

### Most In-Demand Skills

- AWS/Azure/GCP
- Kubernetes
- Infrastructure as Code (IaC)
- Docker
- MLOps
- Automation/Ansible
- Monitoring Tools
- GPU/TPU Management
- Terraform
- Cost Optimization

### Fastest Emerging Skills

- LLM Ops & Model Serving
- Cost-Optimized Inference
- Vector Database Management
- GPU Cluster Orchestration
- Serverless AI Modal
- Real-Time AI Pipeline Design
- Edge AI Deployment
- AI Observability Platforms
- Model Caching & CDN Strategies
- A/B Testing for AI Features

## Business and Management

### Most In-Demand Skills

- AI Strategy
- ROI Analysis
- Change Management
- AI Ethics
- AI Governance
- Leadership
- Communication
- Regulatory Knowledge
- Innovation Management
- Stakeholder Management

### Fastest Emerging Skills

- Responsible AI Implementation
- AI Governance Frameworks
- AI Product Strategy & Roadmapping
- LLM Cost-Benefit Analysis
- AI Transformation Leadership
- AI Team Building & Culture
- Cross-Functional AI Integration
- AI Performance Metrics & KPIs
- Risk-Adjusted AI Planning
- AI Vendor Evaluation

## Cybersecurity

### Most In-Demand Skills

- Threat Analysis
- Security Tools (SIEM)
- Zero Trust Architecture
- AI Security
- Compliance (GDPR/SOC2)
- Cloud Security
- Incident Response
- ML for Threat Detection
- Penetration Testing
- Security Orchestration

### Fastest Emerging Skills

- LLM Security & Jailbreak Defense
- AI Supply Chain Security
- Prompt Injection Prevention
- AI-Generated Content Detection
- Adversarial Testing for LLMs
- Model Backdoor Detection
- Privacy-Preserving ML (PPML)
- AI Watermarking & Attribution
- Homomorphic Encryption for AI
- Secure Multi-Party AI Computation

## Software Engineering

### Most In-Demand Skills

- Python/Java
- Cloud Services (AWS/Azure/GCP)
- Git
- System Design
- CI/CD
- React/Node.js
- Docker
- AI-Powered Code Generation
- Microservices
- TypeScript

### Fastest Emerging Skills

- AI-Powered Code Generation
- LLM Integration & RAG Implementation
- Multimodal AI Integration
- Vector Databases & Semantic Search
- WebAssembly & Edge Computing
- Rust & Zig Programming Languages
- Web5 & Decentralized Identity
- State Space Models
- Direct Preference Optimization (DPO)
- Neural Radiance Fields (NeRFs)

# Evolución en la demanda de habilidades en IA

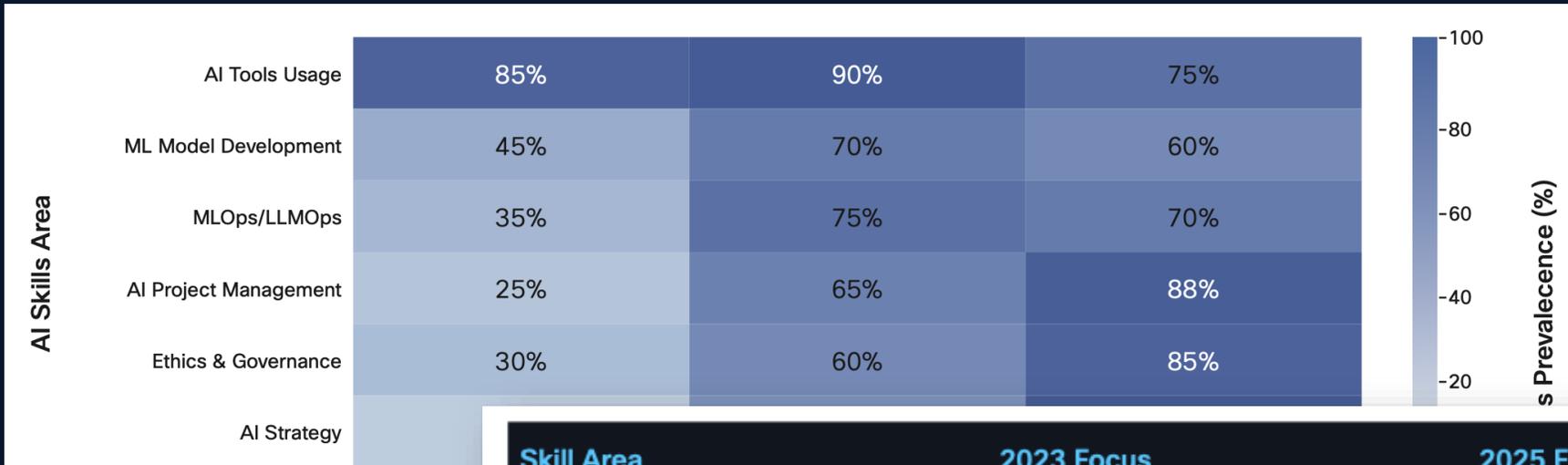


Table 14: AI skills Prevalence per Seniority Level.

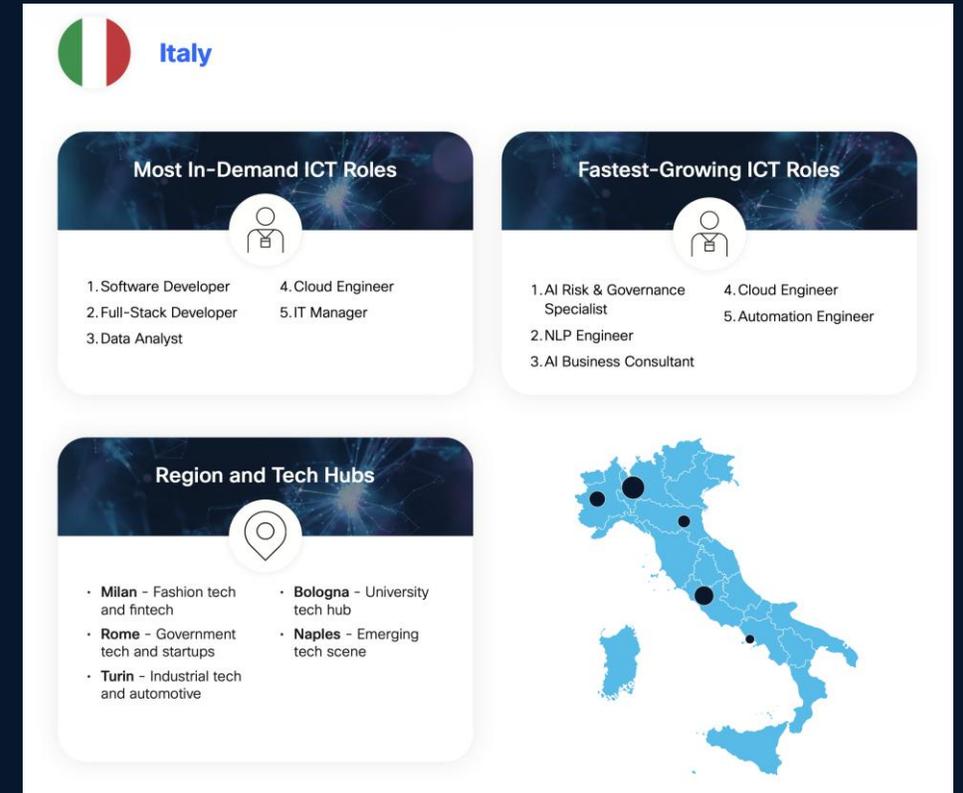
Skill Area	2023 Focus	2025 Focus
NLP	BERT, Basic Transformers	Multi-Agent LLMs, RAG, Prompt Engineering, MCP
Computer Vision	CNNs, YOLO, OpenCV	Diffusion Models, NeRFs, Multimodal Vision
Infrastructure	MLOps, Cloud ML	LLMOps, Vector DBs, Edge AI, Serverless
Development	TensorFlow, PyTorch	LangChain, LlamaIndex, AI IDEs (Cursor, Windsurf)
Deployment	Model Serving, APIs	Streaming Inference, Quantization, Edge LLMs
Safety	Bias Detection, Fairness	Jailbreak Defense, Constitutional AI, Red Teams

Table 7: Evolution of AI Skills in 2023 and 2025. Data Source: Cornerstone

# Concentración y especialización de la demanda



Figure 2: Tech hubs across G7 countries. Source: Cornerstone



# Cómo la IA está reescribiendo las descripciones de trabajo

## 4.6 Skills Stories

### How AI is Changing Tasks, Skills, and Careers through Personal Narratives

The advent of AI is reshaping job roles within the ICT sector, particularly by evolving the nature of tasks performed within existing roles and facilitating career transitions into adjacent, AI-focused positions, alongside other emerging pathways and possibilities. To illustrate this transformation clearly, we've created "skill stories" – fictional yet realistic narratives from the perspectives of professionals experiencing these shifts

firsthand. Each story highlights the specific changes in **tools**, **activities**, and **skills** required to succeed in roles that either integrate AI into existing tasks, as shown by Aisha, Maya and Liam, or transition fully into AI-focused positions, as illustrated by Priya, Emma, and Alex. These skill stories vividly exemplify how professionals can successfully adapt and thrive amidst the AI-driven evolution of the ICT landscape.



### Aisha's Skill Story as Software Developer: How AI Rewrote My Job Description

My name is Aisha, and I'm a 25-year-old software developer. Just a few years ago, my job was simple: Translating a manager's request into clean, functional code. My world was Jira tickets, specific frameworks, and late-night debugging sessions. I was a builder, executing on a well-defined blueprint.

Then, AI arrived – not as a replacement, but as a powerful and unpredictable new tool. The change became real when I was asked to build an intelligent search for our e-commerce site. Instead of me writing complex search algorithms, my job was to direct a Large Language Model (LLM) to do it, either through prompt engineering or vibe coding that leverages AI to transform user's plain speech and words into executable code for software development.

Suddenly, my primary skill wasn't just coding; it was communication. I spent my days engineering, testing, and refining prompts to guide the AI. The core challenge shifted from "How do I build this?" to "How can I provide effective prompts and relevant context to AI and validate its outputs?"

I had to become a critic on prompt inputs and context and a safety inspector. My role was now to scrutinize the AI's input and output for security flaws, logical errors, and hidden biases. I was no longer just following instructions; I had to lead the technology, anticipating its mistakes and building safeguards around it.

Today, my core coding skills are more critical than ever, where I play the role of manager/leader of AI in leveraging them to manage and direct AI systems rather than just writing everything from scratch. I've become an architect and a strategist. AI didn't take my job; it transformed it into something bigger and more essential than I ever imagined. I'm more productive than ever before, no longer bogged down by repetitive coding tasks. Instead, I'm able to dedicate my time to value-added tasks – strategic thinking and complex problem solving. This shift has led directly to higher quality outputs, as the AI handles granular execution while I focus on the overarching vision and refinement, producing innovative solutions quicker.

### Aisha in 2023



- **Code Implementation:** Writing code from scratch based on pre-defined specifications
- **Feature Building:** Developing standard components and API endpoints
- **Manual Debugging:** Finding and fixing bugs through logical analysis and testing

### Aisha Today

- **Strategic Direction & Architecture:** Designing systems that decide when and how to use AI vs traditional code
- **Prompt Engineering:** Crafting, testing and managing instructions for AI models
- **Critical Validation:** Scrutinizing AI-generated code for security, performance and correctness

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### Aisha in 2023



- **Framework Proficiency:** Deep knowledge of specific libraries (e.g., React, Django)
- **Algorithmic Thinking:** Ability to write efficient, logical code
- **Problem Solving:** Using resources like Stack Overflow to overcome coding hurdles

### Aisha Today

- **System-Level & Critical Thinking:** Evaluating trade-offs (cost, speed, ethics) of using AI.
- **AI Interaction & Leadership:** Skill in guiding and correcting non-deterministic AI tools.
- **Security & Ethical Auditing:** Ability to spot potential bias, privacy issues, or vulnerabilities in AI output.

### Aisha in 2023



- Code Editor/ IDE (e.g., VS Code, IntelliJ)
- Version Control: Git, GitHub
- Project Management: Jira, Asana
- Community Support: Stack Overflow

### AI-Native Editors & Agents:

- Cursor: An editor built from the ground up for AI interaction
- Windsurf Editor (formerly Codeium): An agentic Integrated Development Environment (IDE) focused on developer flow
- AI Assistants (Plugins: GitHub Copilot, Tabnine)
- Direct API access: LLM APIs
- Monitoring Tools: Cost and performance dashboards

All 2023 tools are still used

# ICT in Motion: The Next Wave of AI Integration - 2025

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Los documentos, creados por el **AI Workforce Consortium**, ofrecen una guía exhaustiva para que las organizaciones de los países del G7 aborden la **integración de la Inteligencia Artificial (IA)** en su fuerza laboral. Los textos incluyen un **Glosario de Habilidades de IA** que detalla más de 120 habilidades organizadas en 10 categorías, como tecnologías de Modelos de Lenguaje Grandes (LLM) y Ética de la IA. El **Playbook** proporciona estrategias detalladas, enfatizando un enfoque de **aprendizaje basado en habilidades** y el uso de **cuatro arquetipos de IA (Usuario, Líder, Facilitador y Constructor)** para diseñar programas de capacitación específicos. Un informe complementario destaca que los roles relacionados con la IA, como **Especialista en Riesgo y Gobernanza de la IA**, están experimentando el crecimiento más rápido, e identifica **brechas críticas de habilidades** en áreas como LLM y Gobernanza de IA. En esencia, las fuentes establecen un marco estratégico y un lenguaje común para el desarrollo de la fuerza laboral en la era de la IA, promoviendo la **alfabetización y la adaptabilidad** a escala global.



¿Cómo están evolucionando las habilidades técnicas de TI y las habilidades humanas ante la integración de la IA?

La integración de la Inteligencia Artificial (IA) está provocando una **profunda y acelerada transformación** en las habilidades laborales, tanto técnicas de TI como humanas **1**. Esta evolución exige que los profesionales cultiven la **competencia técnica junto con habilidades esenciales**



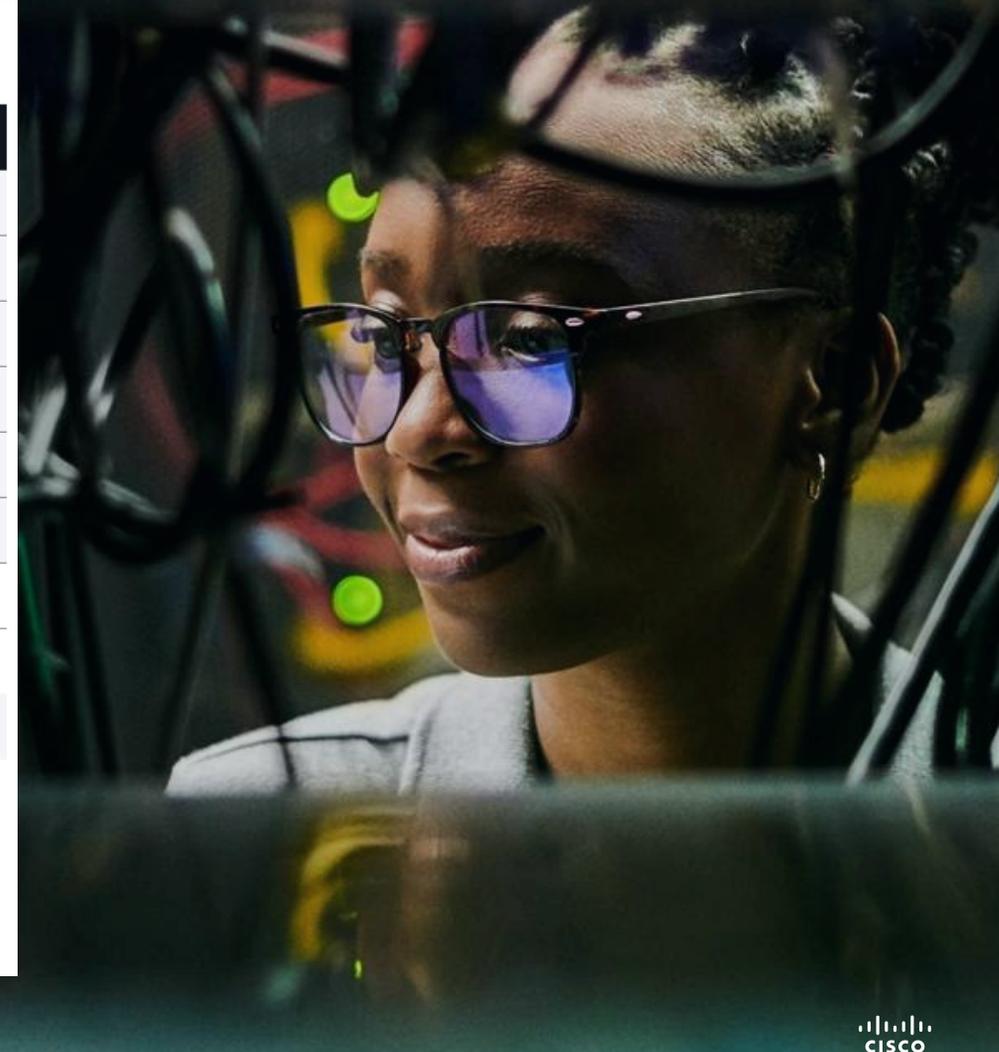
# 7 de cada 10 puestos de TIC de rápido crecimiento son empleos en IA

## Top 10 fastest growing ICT Jobs (G7 country aggregate)

Rank	ICT Jobs	Job Demand Growth %
1	AI Risk & Governance Specialist*	234%
2	NLP Engineer*	186%
3	AI/ML Engineer*	145%
4	AI Business Consultant*	134%
5	AI Infrastructure Engineer*	124%
6	AI/ML Researcher*	98%
7	Cloud Engineer	89%
8	Cyber Threat Intelligence Consultant	84%
9	Data Scientist*	76%
10	Automation Engineer	72%

### Legends:

■ \*AI Related Roles

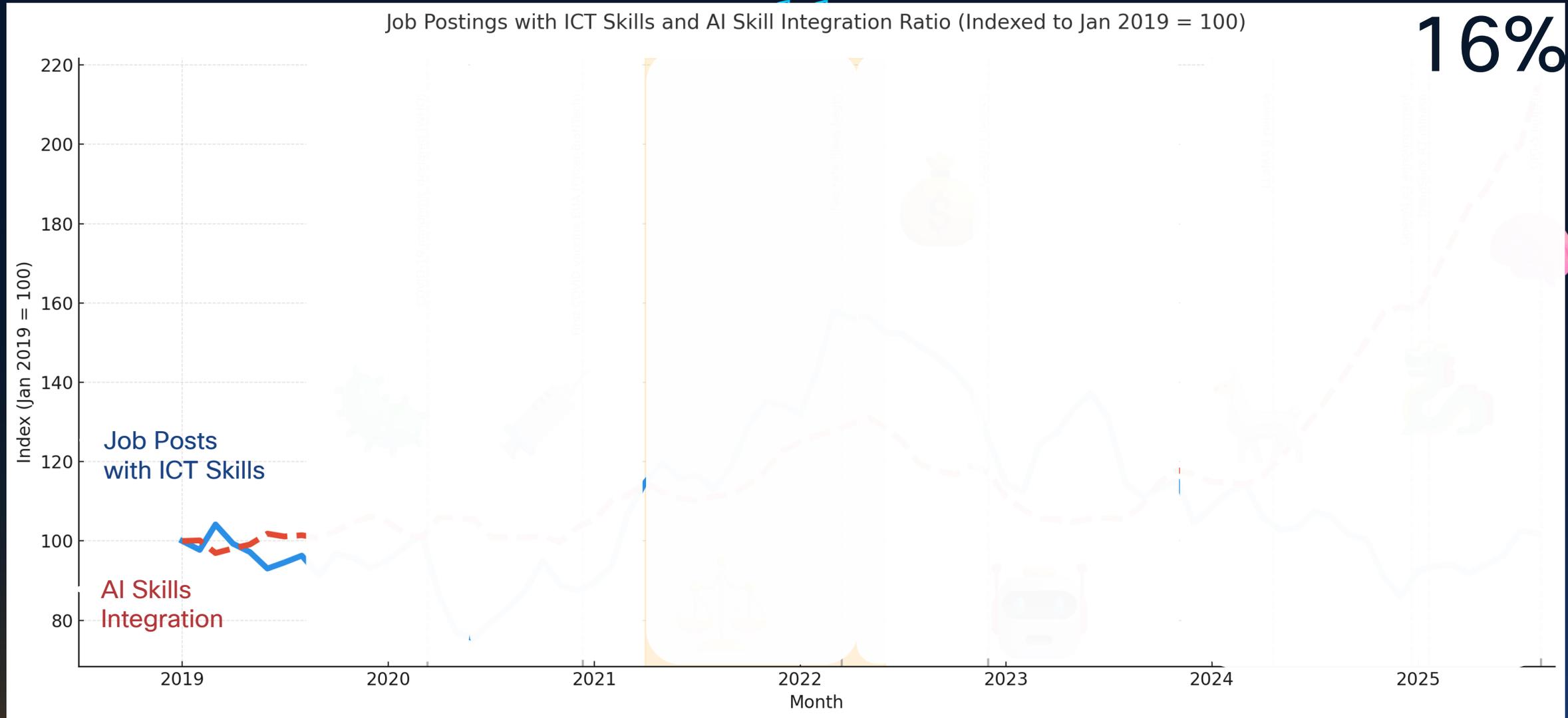


A woman with glasses and braids is sitting at a desk in a dimly lit office, looking at a laptop. In the background, another person is visible at a desk with multiple monitors. The scene is illuminated with a cool blue light.

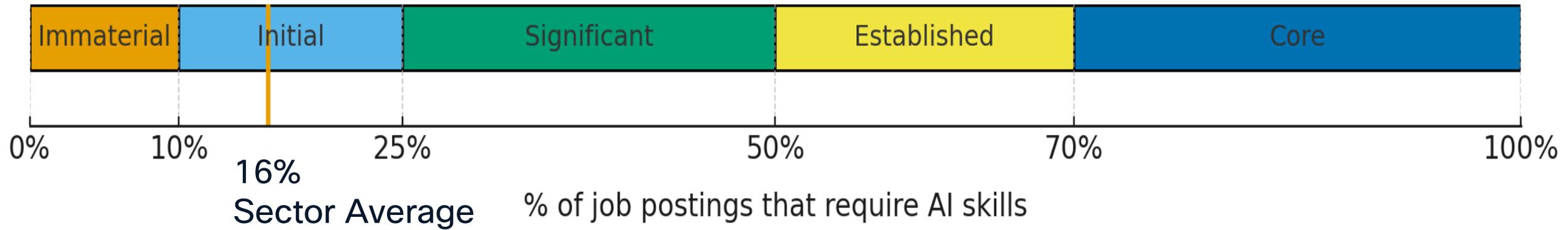
# El 78% de los roles laborales analizados incluyen habilidades en IA

Percentage of the Job Role analyzed that show an Initial or higher (>10%) prevalence of AI skills in the job posts.

# ICT Skills and AI Skill Integration Macro



## Niveles de Integración de Habilidades en IA



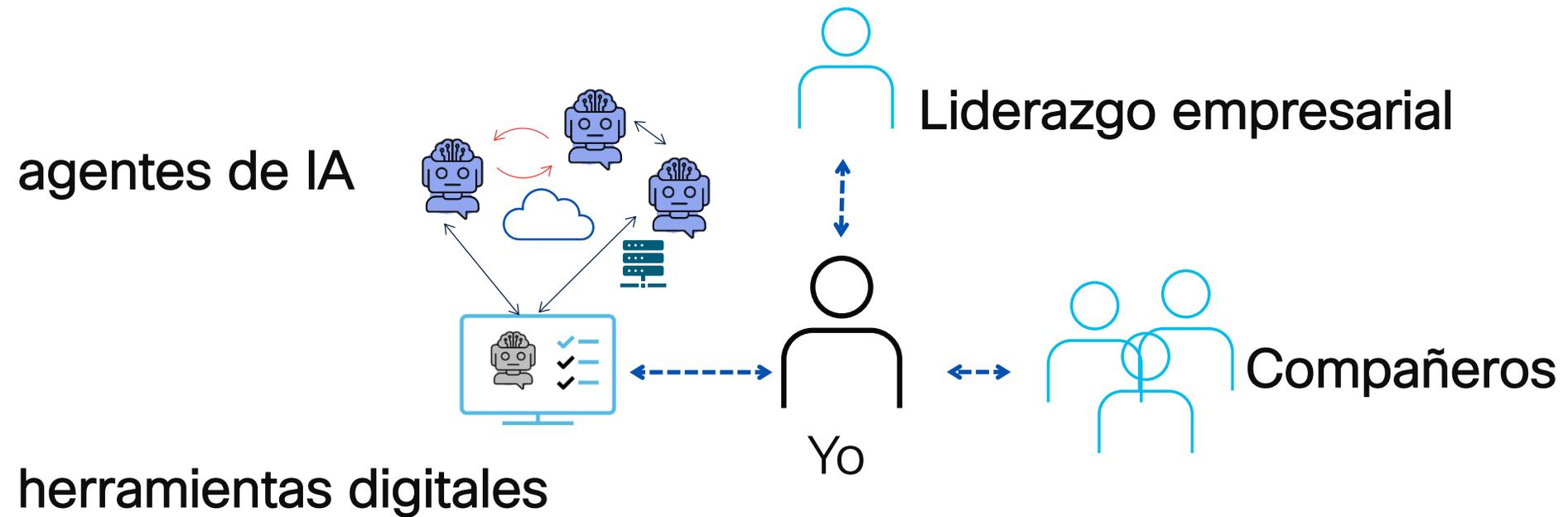
# El 78% de los roles analizados requieren habilidades en IA

No.	Job Family	Job Role	AI Skills Integration Level
1	Architecture and Platform	Platform Engineer	Significant
		Site Reliability Engineering	Initial
		Software Architect	Significant
2	Artificial Intelligence and Data Science	AI/ML Engineer	Core
		AI/ML Researcher	Core
		Business Intelligence Analyst	Initial
		Data Analyst	Initial
		Data Engineer	Significant
		Data Scientist	Core
3	Business and Management	NLP Engineer	Core
		AI Business Consultant	Core
		AI Risk and Governance Specialist	Core
		IT Manager	Immaterial
4	Customer and Support	Technical Product Manager	Initial
		Consulting Engineer	Initial
		Solutions Engineer	Initial
		Technical Solutions Specialist/Engineer	Initial

No.	Job Family	Job Role	AI Skills Integration Level
5	Cybersecurity	Cyber Threat Intelligence Consultant	Significant
		Cybersecurity Analyst	Initial
		Cybersecurity Engineer	Initial
		Ethical Hacker	Immaterial
		Incident Response Consultant	Immaterial
6	Design and User Experience	Security Architect	Initial
		UX Designer	Initial
7	Infrastructure and Operations	UX Engineer	Initial
		AI Infrastructure Engineer	Core
		Automation Engineer	Initial
		Cloud Engineer	Initial
		DevOps Engineer	Initial
		IT Analyst	Immaterial
		IT Support Technician	Immaterial
		Network Architect	Initial
		Network Engineer	Immaterial
		System Administrator	Immaterial
8	Software Engineering	Embedded Engineer	Initial
		Full-Stack Developer	Initial
		Principal Software Engineer	Significant
		Senior Software Engineer	Significant
		Software Developer	Initial
		Software Engineer	Initial

Fuente de datos: Cornerstone - SkyHive

# Modelo del nuevo contexto laboral.



# Introducing AI Canvas

- Single canvas for cross domain troubleshooting
- Generative UI with reasoning built-in
- Keeps NetOps, SecOps, IT and execs on the same page

The screenshot displays the AI Canvas interface with several key components:

- AI Assistant:** Located on the left, it shows a status "Now checking Splunk alerts..." and a message: "Error logs confirm MX device issues. Packet capture needed to verify, but you don't have permissions." Below this is an "Error Logs Frequency" bar chart for Splunk, showing counts over time with categories for Normal (0-50), Warning (51-150), and Critical (>150).
- MX84 Performance Metrics (Last 24 hrs):** A line graph showing packet loss percentage over time, with a peak of 2.8% labeled as a "Critical point".
- Error Logs Frequency:** A bar chart showing the frequency of error logs over time, with a legend for Normal (0-50), Warning (51-150), and Critical (>150).
- Network Path Visualization: San Jose to Financial Cloud:** A diagram showing the network path from San Jose Branch to Financial App, with latency values (5ms, 42ms, 15ms, 18ms, 6ms) and a "Packet loss point" at the MX84 router (2.8% Loss).
- Invite collaborators:** A panel on the right for inviting users, showing a list of users and an "Invite" button.

Labels at the top of the image point to the AI Assistant, Shared Workspace, and Users components.

# De ejecutores de tareas a colaboradores potenciados por IA

## Agentes de IA

Trabaja junto a los agentes de IA y constrúyelos.

Desarrolla habilidades para gestionar y diseñar agentes.

## Liderazgo empresarial

La IA está haciendo las organizaciones más planas. Acércate más al liderazgo y al negocio. Gana confianza mediante la demostración de experiencia y muestra pensamiento sistémico y visión empresarial.

## Compañeros

La IA empodera equipos más pequeños y multifuncionales.

Opera como una startup ágil.

Domina la influencia, la comunicación, la confianza y el juicio ético.

## Dominio: Red, Ciber, ...

El conocimiento profundo del dominio sigue siendo esencial. Piensa desde primeros principios

# Conclusiones

## 1. Tendencia Confirmada

Las habilidades en IA ya están integradas en los roles de TIC – los polos tecnológicos lideran y la difusión se está acelerando.

## 2. Actuar Ahora

Integra las habilidades en IA en todos los programas de formación y educación en TIC.

## 3. Enfócalo con Mentalidad de Crecimiento

La IA amplifica la creatividad humana y eleva la experiencia técnica – es una fuerza de crecimiento, no de reemplazo.



# y recomendaciones para la Educación

1. **Integrar habilidades en IA** en los planes de estudio y **acelerar AI adopción** en la enseñanza.
2. Fomentar el **pensamiento crítico**, la **mentalidad de crecimiento**, la **colaboración**, la **comunicación** y la **ética**.
3. Conectar con el entorno laboral mediante **pasantías** y **aprendizajes**.
4. Impulsar la **educación basada en proyectos** y un **portafolio sólido de habilidades**.



