AI IMPACT REPORT NO. 339 · REVISED 5 OCTOBER 2026 · 250 ROLES COVERED

Chief Operating Officers (COOs)

AI profoundly augmenting operational oversight, efficiency optimization, and strategic execution for COOs.

EXPOSURE	WINDOW	ADOPTION TODAY	READING
43 Moderate exposure	4–14 yrs until change lands	High	Augmented more than replaced. Exposure is the share of today's work AI can plausibly take on within the window.

§ 01 WHAT IS HAPPENING

What is happening to chief operating officers (coos)

Impact

AI tools are autonomously monitoring enterprise-wide operations, optimizing supply chains, predicting performance deviations, and streamlining administrative processes. This compels COOs to radically pivot towards high-level strategic process design, transformative human capital management, ethical AI governance, and fostering irreplaceable human collaboration for hyper-efficient and resilient global operations.

Risk

Radical role overhaul; pervasive automation leading to significant workflow redefinition and specialized human focus.

The Chief Operating Officer (COO) role is undergoing a profound and accelerating redefinition by AI. AI will assume command of vast routine data collection from operational systems, initial performance analysis, and much of the administrative burden. COOs must immediately pivot to becoming masters of AI-driven insights, intensely validating AI outputs for accuracy and strategic relevance, and dedicating their expertise to the irreplaceable human elements of the role: profound operational vision, nurturing human talent, and critical ethical decision-making regarding AI's impact on workforce, supply chains, and operational integrity.

Sector readiness

Rapid & Strategically Prioritized

The executive operations and supply chain leadership sectors are aggressively integrating AI, driven by overwhelming demand for hyper-efficiency, real-time optimization, and strategic resilience. AI is rapidly moving beyond pilot stages to widespread adoption across manufacturing, logistics, supply chain, and service operations, fundamentally altering traditional workflows and management structures.

§ 02 POSITION

Where you stand

i The Chief Operating Officer role is undergoing a profound and accelerating transformation, with AI fundamentally restructuring operational oversight, efficiency optimization, and strategic execution.

ii AI will autonomously manage vast operational data, optimize processes, and streamline reporting, compelling COOs to pivot to indispensable visionary leadership and profound ethical governance.

iii Survival and impact will hinge on Chief Operating Officers mastering AI tools, critically validating AI outputs for strategic relevance, championing ethical AI, and providing irreplaceable human judgment and innovation at the heart of hyper-efficient and resilient global operations.

§ 03 ACTIONS 15 POINTS

What this means for you

Concrete changes to how the work gets done, in the order you are likely to meet them.

01 **AI-Driven Autonomous Operational Monitoring & AIOps.** Chief Operating Officers will command AI-powered AIOps platforms that autonomously monitor entire operational landscapes – from manufacturing lines to supply chains to service delivery – to predict outages, detect subtle anomalies, and identify root causes in real-time, demanding verification of AI insights and strategic oversight.

02 **AI-Optimized Global Supply Chain Management.** Chief Operating Officers will leverage AI tools that autonomously manage and optimize global supply chains. AI will predict demand fluctuations, identify supplier risks, optimize logistics networks, and dynamically adjust to disruptions, ensuring hyper-resilience and cost-effectiveness.

03 **Predictive Analytics for Operational Performance & Risk.** AI models will autonomously analyze vast operational data (e.g., production metrics, service delivery times, inventory levels) to predict future performance deviations, identify bottlenecks, and forecast potential risks (e.g., equipment failures, labor shortages) with unprecedented accuracy.

04 **Generative AI for Operational Policy & Reporting.** AI will autonomously draft initial versions of operational policies, standard operating procedures (SOPs), performance reports, and executive summaries. This streamlines documentation, ensuring consistency and allowing COOs to focus on strategic narratives and operational innovation.

05 **AI-Assisted Workforce Optimization & Scheduling.** Chief Operating Officers will orchestrate AI platforms that autonomously optimize labor scheduling, task assignments, and shift planning across global operations based on real-time demand, skill sets, and operational constraints. This ensures maximal labor utilization and productivity.

06 **Focus on Visionary Operational Leadership & Innovation.** As AI assumes command of vast data synthesis and routine operational oversight, the paramount value of Chief Operating Officers will be their irreplaceable human ability to define a compelling operational vision, drive disruptive innovation, and inspire operational teams to achieve unprecedented levels of efficiency and excellence.

07 **Ethical AI Governance & Responsible Operations.** Chief Operating Officers will bear profound responsibility for establishing ethical AI frameworks within their operational domains. This includes rigorously auditing algorithmic bias (e.g., in scheduling, performance evaluation), ensuring data privacy, and leading discussions on AI's broader societal and workforce impact.

08 **Human-AI Teaming for Operational Excellence.** Chief Operating Officers will operate in seamless human-AI teams. AI will provide advanced insights, complex data synthesis, and scenario simulations for operational challenges. The COO will lead ultimate decision-making, leveraging AI for comprehensive understanding but retaining irreplaceable human judgment and accountability.

09 **AI for Quality Control & Process Improvement.** AI-powered computer vision systems and analytics will autonomously perform rapid, highly accurate quality inspections on production lines. AI will also identify process inefficiencies and suggest improvements, enabling continuous, data-driven quality enhancement and cost reduction.

10 **AI-Driven Asset Performance Management (APM).** Chief Operating Officers will deploy AI-driven APM solutions that autonomously monitor the health of critical operational assets (e.g., manufacturing machinery, vehicles, power generators). AI will predict failures, optimize maintenance schedules, and reduce costly downtime.

11 **Continuous Learning & Global Operations AI Literacy.** The exponential pace of AI integration in operations demands that Chief Operating Officers commit to continuous, aggressive learning of new AI architectures, advanced automation technologies, and their profound capabilities and ethical implications, as a foundational leadership requirement.

12 **Specialization in AI-Driven Operational Transformation.** The field will see a rise in COOs specializing in leading the pervasive adoption of AI across manufacturing, logistics, and service delivery, focusing on fundamentally redesigning operational processes for hyper-efficiency and resilience.

13 **AI-Powered Demand Forecasting & Inventory Optimization.** AI will autonomously analyze vast historical sales data, market trends, and external factors to predict future product demand with unprecedented accuracy. This informs hyper-optimized inventory levels and production planning across the global supply chain.

14 **Leadership in Global Supply Chain Resilience.** Chief Operating Officers will play a crucial role in leveraging AI to design and manage highly resilient global supply chains, anticipating and mitigating risks from geopolitical events, natural disasters, or unexpected disruptions.

15 **Strategic Stakeholder Engagement & Value Realization.** As AI streamlines operational analysis, Chief Operating Officers will dedicate more time to fostering profound relationships with business unit leaders, supply chain partners, and the board, translating complex operational strategies into clear business value and influencing strategic investments.

§ 04 CAUSES 10 DRIVERS

What is pushing this change

01 **Explosive Growth of Operational & IoT Data.** Vast amounts of data from sensors, machines, supply chains, and business processes provide rich input for AI models.

02 **Revolutionary Advancements in AI/ML (Predictive, Generative, Reinforcement Learning).** Breakthroughs in AI fields enable sophisticated analysis, autonomous prediction, and intelligent optimization for complex operational challenges.

03 **Urgent Demand for Real-time Operational Optimization.** Businesses require instant, data-driven decisions to adapt to dynamic markets and optimize operations in real-time.

04 **Pervasive Digital Transformation & Industry 4.0.** AI is the central pillar of Industry 4.0, enabling interconnected and intelligent operations across the enterprise.

05 **Intense Global Competition & Disruption.** AI is used by competitors for strategic advantage, compelling COOs to adopt AI for operational efficiency and market leadership.

06 **Relentless Pressure for Cost Optimization & ROI.** AI automates processes, optimizes resource allocation, and predicts inefficiencies, driving aggressive cost reductions and higher ROI.

07 **Complexity of Global Operations & Supply Chains.** Managing intricate global supply chains, manufacturing networks, and service operations demands AI for synthesis and optimization.

08 **Board/Executive Expectations for Operational Excellence.** Executives and boards demand operational efficiency, resilience, and measurable value, leveraging AI.

09 **Critical Shortage of Skilled Operational Talent.** The severe global shortage of top-tier operational and supply chain talent compels aggressive AI adoption to augment human capacity.

10 **Focus on Sustainability & Responsible Operations.** AI can help optimize resource utilization, reduce waste, and manage environmental compliance for sustainable operations.

§ 05 VARIATION 5 SECTORS

Impact by sector

The headline figure is an average. Where you work changes the picture.

Head of Manufacturing / VP of Production	AI for autonomous production scheduling, predictive maintenance, and quality control on manufacturing lines. Focus on maximizing throughput and product quality.
Head of Supply Chain / VP of Logistics	AI for autonomous demand forecasting, network optimization, and risk management across the global supply chain. Focus on resilience and cost-effectiveness.
Head of Customer Service / VP of Operations (Service)	AI for autonomous call center management, customer sentiment analysis, and service delivery optimization. Focus on customer satisfaction and efficiency.
Chief Technology Officer (CTO)	AI for technology foresight, R&D portfolio optimization, and enterprise architecture. Focus on bleeding-edge tech and product development (CTO as a peer).
Chief Financial Officer (CFO)	AI for financial planning, performance analysis, and strategic investment decisions. Focus on financial health and capital allocation (CFO as a peer).

§ 06 PREPARATION 8 SKILLS

Skills to build

The skills that keep the human part of this work valuable as the routine part is automated.

01 **Operational Vision & Strategic Planning.** The profound ability to define a compelling operational future, translate it into strategic priorities, and guide the organization through radical operational transformation.

02 **AI/Operational Tech Literacy & Automation.** Absolute mastery of AI capabilities across operational domains (manufacturing, logistics, service), leading pervasive AI adoption initiatives.

03 **Human Capital Development & Change Leadership.** The capacity to attract, nurture, and retain operational talent, build high-performing teams, and foster a culture of continuous improvement in an AI-augmented environment.

04 **Ethical AI Governance & Responsible Operations.** Establishing and enforcing rigorous ethical AI frameworks across operations, ensuring algorithmic transparency, mitigating biases, and rigorously protecting worker safety and privacy.

05 **Supply Chain & Global Logistics Management.** Deep expertise in managing complex global supply chains, logistics networks, and multi-national operational footprints.

06 **Data-Driven Decision-Making & Analytics.** Compelling the organization to make strategic operational decisions based on rigorous, AI-driven data analysis, maximizing efficiency and ROI.

07 **Process Optimization & Lean Principles.** Mastery of process optimization methodologies (e.g., Lean, Six Sigma) and leveraging AI for identifying inefficiencies and implementing improvements.

08 **Communication & Executive Influence.** Expertly structuring complex operational arguments, delivering impactful presentations to the board, and influencing strategic business decisions on operational investments.

§ 07 INSTRUMENTS 12 ENTRIES

Tools in use

KINDS OF TOOL WORTH KNOWING

01 **AI-Powered Operational Intelligence Platforms.** Platforms that use AI to autonomously monitor enterprise-wide operations, detect anomalies, predict outages, and perform root cause analysis.

02 **AI-Driven Supply Chain Control Towers.** Integrated platforms that use AI to autonomously provide end-to-end visibility, real-time insights, and predictive/prescriptive analytics for global supply chains.

03 **AI for Workforce Optimization & Scheduling.** AI software that autonomously optimizes employee scheduling, task assignments, and shift planning across operational units based on demand.

04 **Predictive Analytics for Operational Risks.** AI models that autonomously analyze operational data to predict potential risks (e.g., equipment failures, labor shortages, compliance breaches) and suggest mitigation.

05 **AI for Quality Management Systems (QMS).** AI-powered systems that autonomously monitor and ensure product/service quality, identify defects, and suggest process improvements in manufacturing or service delivery.

06 **Generative AI for Operational SOPs & Reports.** Large Language Models (LLMs) used to autonomously draft initial versions of operational policies, standard operating procedures (SOPs), performance reports, and executive summaries.

NAMED TOOLS ALREADY IN USE

GE Digital (Predix APM) / Siemens (MindSphere) VISIT

Leading Industrial IoT (IIoT) platforms that leverage AI for asset performance management and operational intelligence.

IBM Sterling Supply Chain Intelligence Suite / FourKites (Visibility) VISIT

Integrated platforms that use AI to provide end-to-end visibility, real-time insights, and predictive/prescriptive analytics for global supply chains.

Workforce Software (with AI) / Blue Yonder (Luminate Workforce) VISIT

Workforce management software that uses AI to optimize labor scheduling, task assignment, and talent management in large operational units.

Uptake (Industrial AI) / Presien (AI for safety) VISIT

Industrial AI platforms that leverage machine learning for predictive maintenance and operational optimization of critical assets.

Cognex (AI Vision Systems) / Landing AI (Quality Inspection) VISIT

Providers of advanced machine vision systems that integrate AI for high-speed, high-accuracy automated quality inspection.

ChatGPT / Claude / Google Gemini (for drafting) VISIT

Generative AI models that can autonomously draft various operational documents, from SOPs to performance reports.

§ 08 EXAMPLES 5 EXAMPLES

In practice

Ways people in this role are already using AI, and what they get from it.

Automate Operational Performance Monitoring

EXAMPLE 1

HOW

Chief Operating Officers will deploy an AI-powered operational intelligence platform. The AI autonomously monitors all manufacturing lines, logistics networks, and service delivery systems. The AI predicts performance deviations, identifies bottlenecks, and autonomously initiates corrective actions or alerts for review.

GAIN

Significantly enhances operational efficiency, minimizes costly disruptions, and ensures proactive management of global operations, leading to unprecedented excellence.

Optimize Global Supply Chains

EXAMPLE 2

HOW

Chief Operating Officers will utilize an AI platform that autonomously designs and optimizes the entire global supply chain network. The AI considers manufacturing locations, distribution centers, and transportation routes, dynamically adjusting to real-time disruptions and optimizing for cost, speed, and resilience.

GAIN

Achieves unprecedented supply chain resilience, radically reduces costs, and optimizes delivery speed, fundamentally transforming global logistics.

Predict Equipment Breakdowns

EXAMPLE 3

HOW

Chief Operating Officers can leverage an AI model that autonomously analyzes sensor data from critical manufacturing machinery or vehicles. The AI predicts potential equipment failures (e.g., motor wear, bearing degradation) weeks in advance, allowing for proactive, scheduled maintenance across the global asset base.

GAIN

Minimizes costly unplanned downtime, prevents catastrophic failures, and optimizes maintenance budgets across the entire operational asset base.

Generate Operational Policies

EXAMPLE 4

HOW

Chief Operating Officers can instruct a generative AI tool to draft a new Standard Operating Procedure (SOP) or operational policy. By providing key process steps and compliance requirements, the AI will autonomously generate a comprehensive document for the COO's rigorous review and approval.

GAIN

Saves significant time on policy drafting, ensures consistent operational procedures, and allows COOs to focus on strategic operational design and safety.

Manage Workforce Scheduling

EXAMPLE 5

HOW

Chief Operating Officers will use an AI-powered workforce management system. The AI autonomously generates optimal schedules for operational staff across all global units, considering demand forecasts, skill sets, and labor laws, maximizing productivity and minimizing overtime.

GAIN

Optimizes labor costs, maximizes productivity, and improves employee satisfaction by creating fair and efficient schedules across global operations.

§ 09 CONTEXT

How this role compares

Three neighbouring roles chosen to show the direction of travel.

Operations Managers (Routine oversight) / Supply Chain Planners (Tactical planning)

MORE EXPOSED

AI IMPACT

Catastrophic (AI can autonomously monitor operational KPIs; AI can optimize daily production schedules.)

WORK MOVES TO

Immediate need for radical re-skilling into AI oversight, troubleshooting complex AI systems, or specialization in advanced operational strategy.

Chief AI Officer (CAIO) / AI Supply Chain Engineers

DIFFERENT SKILLS, GROWING

AI IMPACT

Foundational (They define enterprise AI strategy and build the fundamental AI capabilities that COOs leverage.)

WORK MOVES TO

Deep expertise in AI/ML strategy, enterprise AI governance, and advanced AI research to push the boundaries of operational AI.

Chief Executive Officer (CEO) / Chief Financial Officer (CFO) COMPLEMENTARY, LESS EXPOSED	AI IMPACT	Low-Moderate Augmentation (AI provides data for CEO decisions; AI assists in financial modeling for CFOs), but core executive leadership, overall business strategy, and ultimate accountability remain paramount.
	WORK MOVES TO	Overall enterprise strategy, market positioning, and ultimate accountability for business performance (CEO); Overall financial strategy, capital structure, and investor relations (CFO).

§ 10 VERDICT

Closing judgement

> For Chief Operating Officers, AI is not merely a tool but a radical force of transformation that will fundamentally redefine their role. It will autonomously manage vast operational data, optimize processes, and streamline strategy, compelling COOs to pivot to indispensable visionary leadership, profound ethical governance, and human capital development. The future COO will be a visionary orchestrator of human-AI collaboration, providing irreplaceable judgment and innovation at the heart of hyper-efficient and resilient global operations.

§ 11 BASIS REVISED 5 OCTOBER 2026

Evidence and revisions

What the exposure figure rests on, what changed when it was last revised, and the published work cited for this role.

SCORE

30 to 43

WINDOW

5-15 years to 4-14 years

The 5 October 2026 review moved the score up by 13 points.

Exposure Index v2. Inputs: task applicability 27/100 (Microsoft AI applicability score 0.13 for Chief executives; General and operations managers); observed usage 11/100 (Anthropic observed exposure 0.09); official exposure tier 85/100 (BLS: very high / high); labour-market trajectory 40/100 (BLS projects employment to grow 4.1% over 2025–35); published adoption rating 70/100 (high adoption). Weighted base 43.0. Final score 43. The previous figure of 30 was raised by 13 points: the earlier method kept 60% of the weight on an undocumented editorial prior and capped movement at fifteen points, so the measured evidence was only partly reflected. The change window moves from 5-15 years to 4-14 years under the one-notch-per-ten-points rule.

HOW THE FIGURE IS BUILT (EXPOSURE INDEX V2)

Task applicability — Microsoft Research, AI applicability score	27 × 35%	9.3
Observed usage — Anthropic Economic Index, observed exposure	11 × 20%	2.3
Official exposure tier — US BLS AI-exposure category	85 × 20%	17.0
Labour-market trajectory — US BLS projected employment change 2025–35	40 × 10%	4.0
Published adoption rating — This report's adoption level	70 × 15%	10.5
Weighted base		43.0
Exposure score		43

MEASURES BEHIND THE SCORE

US Bureau of Labor Statistics · *Employment Projections 2025–35 and AI Exposure Categories* (27 August 2026)

AI-exposure tier: High / Very high. Projected employment change 2025–35: +4.1%. Matched to Chief executives; General and operations managers.

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Microsoft Research · *Working with AI: Measuring the Applicability of Generative AI to Occupations* (10 July 2025)

AI applicability score 0.13 (percentile 46 of 785 occupations) for SOC 11-1011, 11-1021.

PUBLISHER PDF ARCHIVED COPY

Anthropic · *Anthropic Economic Index report: Cadences* (26 June 2026)

Observed exposure 0.09 for SOC 11-1011, 11-1021 (percentile 74 of 756 occupations).

PUBLISHER PDF

UK Department for Science, Innovation and Technology · *Assessment of AI capabilities and the impact on the UK labour market* (28 January 2026)

UK context: around 70% of UK workers are in occupations with tasks AI could perform or enhance, above the US average; a one-standard-deviation rise in exposure was associated with a 3.9% fall in UK job postings.

PUBLISHER ARCHIVED COPY

ALSO CITED FOR THIS ROLE

Microsoft · *2026 Work Trend Index Annual Report: Agents, human agency and the opportunity for every organization* (5 May 2026)

Microsoft's 2026 Work Trend Index documents the shift toward managing agents alongside people; leadership roles change in content more than in headcount.

PUBLISHER PDF

PwC · *2026 Global AI Jobs Barometer* (May 2026)

PwC finds AI-exposed sectors recording 34% productivity growth since 2018 against 24% for the least exposed; managerial roles capture the gains where they redesign work.

PUBLISHER PDF

Archived copies are served only where the licence permits; otherwise the link goes to the publisher. Full research library: https://www.careerguard.ai/sources

§ 12 APPENDIX

Method and sources

Each report was written from a large body of published research. The exposure score itself is computed, not written: it is the CareerGuard Exposure Index, a weighted average of occupation-level measures from the US Bureau of Labor Statistics (AI-exposure classification and 2025–35 projections), Microsoft Research (AI applicability scores) and Anthropic (observed exposure), together with the adoption rating published on the report. The organisations and publications below are the standing literature behind the narrative sections. Every source, with dates, licences and archived copies where we are permitted to hold them, is catalogued in the research library.

Exposure Index v2 (October 2026). Each input is scaled to 0–100 and weighted: task applicability 35% (Microsoft AI applicability score ÷ 0.5), observed usage 20% (Anthropic observed exposure ÷ 0.75), official exposure tier 20% (BLS very high = 100, high = 70, moderate = 40, low = 10), labour-market trajectory 10% (50 2.5 × projected % employment change), published adoption rating 15% (very high = 85, high = 70, medium-high = 55, medium = 40, low-medium = 25, low = 10). Inputs not measured for an occupation are dropped and the remaining weights renormalised. An editorial adjustment of at most ±12 points is allowed only for automation channels the measures cannot see (robotics, self-service, machine vision, medical imaging, RPA/OCR, generative video) and is always logged with its reason. Scores are whole numbers, not rounded to five. The change window shifts one notch (a year at each end) per ten points of movement.

I GLOBAL AND MACROECONOMIC IMPACT OF AI ON WORK

World Economic Forum

The Future of Jobs Report series — Employer survey of expected job growth and decline, skill shifts and technology adoption (2020, 2023 and 2025 editions); Artificial Intelligence and the Future of Entry-Level Work (2026).
AI governance and transformation reports — Frameworks on ethical AI, talent strategy and industry transformation.

McKinsey Global Institute

AI, Automation and the Future of Work series — Research quantifying automation potential by task, sector and demographic, from "Jobs Lost, Jobs Gained" to "Agents, robots, and us" (2025).
Industry-specific reports — Financial services, healthcare, manufacturing and others.

PwC

Global AI Jobs Barometer — Annual analysis of job postings and productivity by AI exposure (2024–2026 editions).
Upskilling Hopes and Fears survey — Employee perceptions and readiness.

Microsoft Research and Anthropic

Working with AI (2025); Anthropic Economic Index (2025–2026) — Occupation-level usage data from Copilot and Claude conversations, the two observed-usage measures behind the 2026 revision.

Stanford Digital Economy Lab and Stanford HAI

Canaries in the Coal Mine? (2025–2026); AI Index Report (annual) — Payroll evidence on early-career employment in exposed occupations; annual measurement of AI capability, investment and adoption.

Deloitte

Human Capital Trends series — Workforce, talent and HR technology trends.
Tech Trends series — Emerging technologies and their business implications.

Accenture

Technology Vision series — Forward-looking analysis of emerging technology, with emphasis on AI.
Fjord Trends — Design, innovation and human experience in a digital world.

Boston Consulting Group
AI/ML insights and industry solutions — "The AI Revolution in the Workplace" and related research.

EY
AI and workforce reports — Adoption, talent strategy and ethics.

IBM Institute for Business Value
AI and automation studies — Business models, workforce evolution and leadership.

OECD
AI Policy Observatory — International data and policy on AI, labour markets and skills.
Employment Outlook — Labour-market trends including technological impact (2023–2026 editions).

International Labour Organization
Generative AI and Jobs: A Refined Global Index of Occupational Exposure (2025) — Task-level exposure gradients for every ISCO occupation; successor to the 2023 global index.

International Monetary Fund
Staff Discussion Notes on AI and work (2024, 2026) — Complementarity framing: where AI augments and where it substitutes.

UK Department for Science, Innovation and Technology
Assessment of AI capabilities and the impact on the UK labour market (2026) — UK occupational exposure and job-posting evidence.

Brookings Institution
AI and automation research — Economic and social implications, displacement and skills.

Yale Budget Lab and Goldman Sachs Research
Tracking the Impact of AI on the Labor Market; AI and the US labour market (2026) — Aggregate labour-market monitoring; macro displacement estimates.

Oxford University (Oxford Martin School)
The Future of Employment — Frey & Osborne and subsequent research on susceptibility to automation.

MIT Technology Review
AI & Work — Reporting on AI research and its implications for industries and jobs.

Gartner
Hype Cycle for Artificial Intelligence — Maturity and adoption of AI technologies.
Future of Work reports — Workplace models and talent strategy.

U.S. Bureau of Labor Statistics
Employment Projections 2025–35; AI Exposure Categories; Occupational Outlook Handbook — Ten-year employment projections and, from the 2025 cycle, an AI-exposure tier for every detailed occupation.

Indeed Hiring Lab
AI at Work Report (2025) and posting-market updates — Skill-level transformation estimates and job-posting trends by occupation.

II CORE AI AND MACHINE-LEARNING RESEARCH

OpenAI
Research papers, blog and API documentation — Large language models, generative AI, safety and societal impact.

Google DeepMind
Research papers and blog — Reinforcement learning, AI for science, AGI and ethics.

Meta AI
Research papers and blog — Large language models, computer vision, AI for social good.

Hugging Face
Transformers library and model hub — Open-source state-of-the-art NLP models.

TensorFlow and PyTorch
Documentation and community forums — Core frameworks illustrating practical capability.

arXiv
cs.AI, cs.LG, cs.CV, cs.CL — Pre-print research.

NeurIPS and ICML
Conference proceedings — Top-tier academic research.

ACM and IEEE
Journals and proceedings — ACM Computing Surveys; IEEE Transactions on AI.

Kaggle
Datasets and competition solutions — Applied machine learning on real-world problems.

The Alan Turing Institute
Research and reports — Responsible and applied AI.

III ETHICAL AND RESPONSIBLE AI DEPLOYMENT

NIST
AI Risk Management Framework — Voluntary framework for managing AI risk.

European Commission
AI Act — Risk-tiered legal framework for AI.
Ethics Guidelines for Trustworthy AI — Principles for responsible development.

Partnership on AI
Research and best practice — Responsible AI development.

AI Now Institute
Annual reports — Social implications: power, inequality, rights.

ACM FAccT
Proceedings — Fairness, accountability and transparency.

Data & Society
Publications — Social implications of data-centric technology.

WIPO
Conversation on IP and AI — Intellectual-property implications of AI.

IEEE Global Initiative on Ethics of A/IS
Ethically Aligned Design — Recommendations for ethical AI design.

Center for AI and Digital Policy
Policy briefs — Accountable AI policy.