Human Labour in AI Systems

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Introduction

Artificial intelligence (AI) in the workplace must be understood not only in terms of model development and data annotation but as a broader reconfiguration of everyday labor. From hospitals to warehouses, call centers to public agencies, AI alters how tasks are allocated, monitored, and valued. The central question is not simply “which jobs will AI replace?” but “how does AI reorganize power and control in firms, and with what consequences for worker dignity and social welfare?” This article advances three contributions. First, it synthesizes recent evidence on the ways AI changes tasks, skills, and management practices. Second, it evaluates distributional impacts across social groups, geographies, and firm sizes. Third, it outlines institutional reforms and design patterns to better align AI with equity, safety, and meaningful work.

How Jobs Are Changing

AI’s impact on jobs cannot be reduced to substitution. Research shows that automation often eliminates tasks, not entire occupations (Acemoglu & Restrepo, 2020). Whether this yields upskilling or deskilling depends on design choices and on the values encoded into systems. AI systems are not simply reshaping which jobs exist but redefining how work itself is organized, monitored, and valued. The relentless pursuit of precision labor in AI training exposes workers to hidden, excessive, and often unpaid tasks designed to meet arbitrary accuracy standards that privilege machine metrics over human judgment. This dynamic extends beyond annotation centers into the broader workplace, where algorithmic management and surveillance increasingly dictate hiring, scheduling, evaluation, and even termination. Workers face a double bind, subordinated to machines as arbiters of “truth” while competing in gamified environments that erode dignity and autonomy. The result is a growing fear that humans are being transformed from decision-makers into supervisors of machine outputs, forced to think like AI to survive. Addressing these harms requires moving beyond technical debates about accuracy to acknowledge the social construction of performance metrics, foreground worker agency, and develop governance frameworks that ensure AI augments rather than disciplines human labor

- **Upskilling vs deskilling:** In healthcare, clinical decision support systems can augment physicians by detecting early warning signs of sepsis (Brynjolfsson , 2023). Yet Levy warns that safety logics can rationalize intrusive oversight. If AI turns doctors into box-checkers rather than decision makers, skill erosion results (Levy, 2022).

- **Retail and logistics:** Amazon warehouses deploy AI-driven robotics to accelerate sorting, but human workers report monotonous, injury-prone stowing tasks left for them. The efficiency gains ideology hides the real costs, injuries, fatigue, and turnover that

workers absorb (Levy, 2022).

- **Call centers:** Rosenblat's analysis of ride-hailing offers a parallel. Just as drivers are nudged by algorithmic prompts, call center agents are nudged into scripted behaviors, narrowing autonomy and creativity (Rosenblat, 2018).

- **Public services:** In welfare systems, automated eligibility assessments reduce staff discretion and risk unfair denials (Eubanks, 2018). Here, algorithmic decisions are justified as neutral, but Levy shows how such objectivity often masks organizational attempts to discipline workers and clients alike.

Not all tasks are equally suited for automation, and scholars caution against extending AI into domains that hinge on empathy, contextual judgment, and moral accountability. Decisions such as medical triage, criminal sentencing, or eligibility assessments in social services are not merely technical problems but deeply human encounters where lives, dignity, and justice are at stake. The prevailing ideology that "data knows best" risks obscuring the limitations of statistical models and the social harms that arise when they displace human care. In these contexts, human oversight is not a redundancy but a safeguard, ensuring that decision-making remains accountable to ethical reasoning, lived experience, and the complex needs of individuals. Recognizing the irreplaceable value of human care challenges the assumption that efficiency and accuracy alone should govern the design of sociotechnical systems, and instead demands governance frameworks that protect space for human judgment where it matters most.

Algorithmic Management and Surveillance

Algorithmic management refers to the delegation of supervisory functions such as scheduling, evaluation, and pay determination to digital systems . Some describe this as a "digital Taylorism" that extends scientific management into data-driven micromonitoring from the application of algorithmic monitoring to fragment and control labor, echoing early 20th-century factory practices.Rosenblat argues that algorithmic management is not neutral. It is an ideology of control wrapped in a language of flexibility and independence. Uber drivers are called entrepreneurs, yet their pay and working hours are dictated by opaque algorithms. What looks like autonomy becomes dependence on invisible decision rules (Rosenblat, 2018).Levy similarly shows in *Data Driven* how trucking surveillance reframes drivers as risks to be managed. Monitoring is justified in the name of safety, but the result is increased managerial oversight and the transfer of liability to workers (Levy, 2022).

The risks of algorithmic management are significant, opacity limits due process when workers cannot challenge automated evaluations, embedded biases reproduce existing patterns of discrimination, and constant monitoring chills autonomy and undermines collective action (Rosenblat, 2018). Advocates, however, counter that algorithmic oversight can promote fairness by applying standardized criteria to performance reviews and enhance safety by flagging hazardous conditions. For example, AI-based fatigue monitoring in mining has been credited with reducing accidents (OECD, 2023). Yet, as Levy notes, safety rationales often conceal a deeper redistribution of responsibility. Instead of empowering workers, such systems intensify

psychological strain by making them perpetually observable, while firms capture the economic benefits of heightened productivity and risk reduction. The result is not a neutral balance of safety and fairness, but an uneven trade-off where workers shoulder the burdens of surveillance while employers reap the rewards.

Distributional Impacts and Inequality

The distributional impacts of AI adoption reveal how technological change is not neutral but deeply stratified. At the level of skills, AI accentuates polarization, highly educated professionals capture productivity gains through complementarity, while lower-skill workers are subject to intensified monitoring and routinization of their tasks. Across firms, adoption is uneven, with large corporations able to absorb the costs of advanced systems while smaller enterprises fall behind, widening productivity and competitiveness gaps. Inequality is further compounded by social hierarchies, gendered and racialized labor markets place women, minorities, and migrants disproportionately in sectors most subject to algorithmic surveillance and control. Disability introduces another double edge, AI systems can in principle reduce barriers to employment but risk entrenching exclusion when design flaws amplify bias. Globally, these asymmetries extend to the South, where digital labor platforms position precarious annotation and microwork as development opportunities, even as they entrench vulnerability under opaque algorithmic management. What emerges is a picture of AI as a force that reorganizes inequality rather than dissolving it, redistributing advantage toward those with existing structural power while deepening precarity at the margins. In Kenyan microwork platforms, annotators earn low wages under strict algorithmic control, highlighting how AI globalizes precarious digital labor (Graham, 2020). The ideology of development through digital jobs clashes with the lived reality of precarity.

Governance and Worker Power

The governance of algorithmic management demands a rebalancing of power between firms and workers. Current regimes of opacity, where rules for evaluation and pay are deliberately hidden, sustain asymmetry and undermine worker dignity. Reversing this dynamic requires institutionalized channels for worker voice, ensuring consultation in the design and deployment of AI systems. Collective bargaining must evolve to encompass digital clauses that set boundaries on surveillance and embed rights to algorithmic review. Just as physical safety equipment is subject to legal standards and inspection, algorithmic systems that shape livelihoods should be auditable, contestable, and accountable. Due process is central, workers must have avenues of redress when automated systems determine their pay, promotion, or termination. Governments also play a vital role in establishing baselines through impact assessments, transparency requirements, and enforceable limits on intrusive monitoring. Policies that guarantee the portability of skills across platforms and employers further safeguard against technological lock-in. At the international level, the articulation of shared norms on digital management can extend protections across borders. While some caution that regulatory measures could slow innovation or disadvantage smaller firms, phased obligations and accessible compliance tools demonstrate that accountability need not be at odds with competitiveness.

Solutions and Design Patterns

Levy and Rosenblat both argue that the ideology of efficiency must be challenged with design logics of dignity and fairness.

- **Augmentation first workflows:** Systems should enhance human judgment, not replace it.
- **Documentation:** System cards and labor impact statements should accompany deployment, outlining effects on autonomy, skill, and equity.
- **Metrics beyond productivity:** Evaluation should consider worker discretion, psychological safety, opportunities for learning, and fairness of outcomes.

Risks and Mitigations

Risk	Mitigation	Evidence
Deskilling of healthcare workers	Training integrated with AI support; mandatory override rights	(Brynjolfsson, 2023)
Algorithmic bias in evaluations	Independent audits; explainable models	(AI Now, 2021)
Warehouse injuries from pacing	Ergonomic design; non punitive monitoring	(Levy, 2022)
Precarious scheduling	Minimum hour guarantees; worker input into rosters	(OECD, 2023)
Algorithmic opacity in gig work	Worker access to data logs; appeals processes	(Rosenblat, 2018)

Open Questions and Research Agenda

Significant gaps remain.

- Longitudinal studies on skill trajectories under AI-enabled management.
- Comparative research across Global South contexts.
- Pilot programs testing labor impact statements.
- Measurement frameworks for dignity and discretion in work.

- Ideological analysis of how firms justify AI adoption, building on Rosenblat's work on flexibility myths and Levy's work on safety logics.

Conclusion

AI is not destiny. It reshapes everyday work through choices about what tasks to automate, how to govern algorithmic systems, and whose voices to include. Benefits in safety and productivity are real, but so are harms of surveillance, inequality, and deskilling. Rosenblat reminds us that algorithmic management is not just technology but ideology, a story told to workers about freedom while constraining their choices. Levy reminds us that surveillance justified as safety is still surveillance. The challenge is to align AI with worker dignity through stronger institutions, participatory governance, and augmentation first design. The path forward is one of trade offs, balancing efficiency with fairness, innovation with accountability, and productivity with humanity.

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