

Fairness and Bias in Algorithmic Hiring: a Multidisciplinary Survey

Source: arXiv | **Author:** Fabris et al. | **PMS Relevance:** PMS RELATED | **Type:** Meta-Analysis/Review | **Geography:** Global

Source URL: <https://arxiv.org/abs/2309.13933>

Executive Summary

This article presents a multidisciplinary survey of fairness and bias in algorithmic hiring, submitted to arXiv by Alessandro Fabris and revised through June 2025. The problem addressed is the growing adoption of algorithmic tools across recruitment pipelines and the absence of integrated, balanced scholarly treatment of their fairness implications. The authors argue that existing literature is fragmented between two competing narratives: optimistic framings that position algorithms as replacements for biased human recruiters, and pessimistic framings that emphasize the automation of discrimination. The survey synthesizes coverage across six dimensions — systems, biases, measures, mitigation strategies, datasets, and legal aspects — to provide a contextualized account of algorithmic hiring fairness. Key findings include that the fundamental question of whether algorithmic hiring can be less biased than human alternatives remains empirically unresolved. The survey is positioned as a resource for both practitioners and researchers, and concludes by identifying current limitations and opportunities for governance-oriented future research aimed at ensuring equitable outcomes for all stakeholders.

Key Insights

1. The empirical question of whether algorithmic hiring is less biased than human recruitment decisions remains unanswered, undermining trustworthiness claims from both proponents and critics.
2. Existing research in algorithmic hiring fairness is characterized by partial treatment, with scholars typically aligned to either optimistic or pessimistic narratives rather than integrated analysis.
3. A multidisciplinary lens — spanning computer science, law, social science, and organizational behavior — is presented as necessary to adequately govern algorithmic hiring systems.

Practical Takeaways

- Organizations deploying algorithmic hiring tools operate in a space where comparative bias evidence against human alternatives is not yet established, making independent auditing and ongoing monitoring relevant considerations.
- Legal aspects of algorithmic hiring fairness are treated as integral to technical design decisions, suggesting that compliance and engineering decisions in this domain are not separable.

Critical Analysis

Strengths: The survey's multidisciplinary scope — integrating technical, legal, and social dimensions — addresses a documented gap in siloed research on algorithmic hiring. The acknowledgment that the central empirical question remains unresolved is intellectually honest and resists advocacy. The iterative revision history (v1 through v4 across nearly two years) suggests ongoing scholarly refinement.

Limitations: Only the abstract is available for analysis; the full paper's methodology, dataset coverage, and conclusions cannot be independently verified from this submission record alone. The survey's framing acknowledges two competing narratives but does not — from the abstract alone — clarify how it operationalizes 'fairness' or adjudicates between contested definitions. **Potential bias:** The paper is authored from a computer science context (arXiv CS.CY), which may weight technical mitigation strategies over socio-legal or organizational interventions, though the multidisciplinary framing explicitly attempts to counteract this.

Organizational Practice

The article describes organizational adoption of algorithmic hiring technology across recruitment pipelines, including screening, assessment, and selection stages, with employers using automated tools that introduce both efficiency gains and fairness risks relative to human decision-making.

Strategic Implications

The unresolved empirical status of comparative bias between algorithmic and human hiring suggests that organizational claims about fairness improvements from automation lack a settled evidentiary basis. The integration of legal frameworks into technical fairness analysis points toward increasing regulatory scrutiny as a contextual factor shaping how algorithmic hiring systems are designed and deployed. The multi-revision trajectory of the survey reflects a rapidly evolving research landscape, indicating that governance frameworks and mitigation strategies in this domain are likely to continue shifting.

Validation Status: passed
