

Intellihire: An AI-Powered Automated Interview System

Nishant Kumar¹, Amisha Pal², Ankush Kumar³, Atri Bhardwaj⁴, Vinay Kumar Pant^{5}*

^{1,2,3,4}Student, Department of Computer Application, Haridwar University, Roorkee, India

^{5*} Assistant Professor, Department of Computer Application, Haridwar University, Roorkee, India

ABSTRACT

In earlier times the interview process was completely manual and managed by human recruiters. Companies used to collect printed resumes, shortlist candidates by reading each application carefully and schedule interviews through phone calls or emails. As the number of job applicants increased, especially in large organizations managing the entire recruitment process became more complex and challenging. With the rapid growth of technology, AI has started transforming various industries including recruitment. This research paper “AI Based Interview Automation System” is about using Artificial Intelligence to make the hiring process easier and faster. This system helps the companies to take interviews online in a smart and automatic way. It checks the resume, ask questions to the candidates then evaluates their answers instantly and monitors them during the interview from anywhere.

The main aim is to save time, reduce cost and make the selection process fair for everyone. It also gives equal chances to students and rural candidates to attend interviews from anywhere. These systems make recruitment simple, quick and reliable for companies while helping candidates practice and improve their interview skills.

The main objective is to improve the old interview method by using smart technology. It helps the companies to choose the right person quickly and fairly.

The main finding is that the system makes hiring faster, cheaper and fairer. It reduces human mistakes and help students practice interviews. Overall it makes the recruitment process simple and better.

Keywords: Artificial Intelligence, Interview Automation, Natural Language Processing, Resume Screening, LLMS, Talent Acquisition.

1. Introduction

Now a days, many companies are using technology to make their work easier and faster. One important area where technology is growing quickly is the hiring process. The research “AI Based Interview Automation System” is about using smart computer technology to take interviews automatically. Instead of only face-to-face interviews, companies can now conduct interviews online with the help of AI (J. S. Black and P. van Esch, 2020).

This view of AI makes us wonder if there are some skills that only humans can have and that AI can't learn. This question is hard to answer because AI has made a lot of progress in the last ten years. Still, it seems likely that people will always have the upper hand (S. Russell and P. Norvig, 2021). AI has started to affect every section of a company's value chain, changing enterprises in a big way, especially in the service industry. In human resource management, analytical AI applications help in screening CVs and choosing candidates with the help of modern applicant tracking systems (ATS). AI helps with better-targeted and personalized communication in sales and marketing.

Earlier, the hiring process was fully manual. HR teams had to read hundreds of resumes, schedule interviews, ask questions

and evaluate answers one by one. This process takes a lot of time, money and effort. Sometimes, human errors or personal opinions can also affect the final decision. With the help of AI, many of these tasks can now be done automatically. The system can read resumes, ask questions based on the candidate's profile, check answers instantly and give scores (A. Kaplan and M. Haenlein, 2021). It can also monitor candidates during the interview to reduce cheating.

The research area is important because recruitment is a very big challenge for companies, especially when there are many applicants. An AI-based system can save time, reduce cost and make the selection process fair for everyone (T. Chamorro. et. al., 2016). It also gives equal opportunities to students and rural candidates who may not be able to attend in-person interviews. They can take interviews from anywhere and even practice to improve their skills.

Personal communication skills and personality characteristics are recognized as essential determinants of work performance and organizational efficacy. Communication skills help people at work share, give feedback, and exchange information with various people through both spoken and unspoken communications. Interviewers may also make judgments about a candidate's personality based on how they communicate without words during the interview, and these judgments may affect hiring decisions (N. Mehrabi and F. Morstatter, 2021). Due to biasness many problem arises. AI system have capability to reduce this biasness.

The purpose of this review paper is to study how an AI-based interview system works and how it improves the traditional hiring process. It explain the working method, benefits and overall impact of using AI in recruitment. The paper aims to show that this system a make hiring faster, easier and more reliable for both companies and candidates.

2. Literature Review

Tambe et al. (2019), In the paper "AI in Human Resource Management" explains that AI is changing the recruitment process by helping in resume screening, interview scheduling and candidate evaluation. The study shows that AI reduces human workload and saves time. However, it also highlights challenges such as data privacy issues and the risk of bias.

Raghavan et al. (2020), In the paper "Mitigating Bias in Algorithm Hiring" explains that AI is widely used in recruitment for resume screening, interview scheduling and candidate evaluation which helps save time and reduce human workload. However, research also highlights challenges such as data privacy issues and the risk of bias in AI systems.

Piotr Horodyski (2023), In the paper "Applicants' perception of artificial intelligence in the recruitment process" examined candidate experiences in AI based interviews and found that while many users appreciate the flexibility and convenience, some feel uncomfortable interacting with machines. The study emphasized the need for user-friendly and clear AI systems.

Prajwal R et al. (2023), In the paper "Intelligent Video Interview Agent to Predict Skills & Personality traits" developed an intelligent video interview agent using deep learning to analyse facial expressions, tone and communication skills, showing that AI can match human evaluation and reduce bias.

Chavan & Jadhav (2026), In the paper "A General Paper Mock Interview System" proposed a mock interview system that uses resume-based questions, speech recognition and NLP to provide personalized feedback, helping candidates practice more effectively.

3. Comparative Analysis of Literature review

A comprehensive comparative analysis of various research article with methodology, tools or technology, techniques with advantage and disadvantages explain in this section. Bellow table1 present all necessary details.

Table 1 – Comparison of various research articles

Paper	Methodology	Tools/ technologies used	Techniques applied	Advantage	Limitation
Tambe et al.(2019)	Conceptual study explaining AI use in HR and recruitment.	AI-Based HR automation tools.	Resume screening, keyword matching.	Saves time, reduces HR workload, faster hiring process.	No practical system developed general study only.
Raghavan et al. (2020)	Analytical study of AI hiring algorithms	Algorithm analysis models	Bias detection, fairness evaluation, transparency checking.	Reduce discrimination, promotes fairness in hiring	Focus only on bias, does not build full interview system.
Piotr Horodyski (2023)	Survey based study on candidate experience	AI interview interface systems	User feedback analysis, experience evaluation.	Improves user comfort, flexible and convenient system	Limited technical details, mostly opinion based study.
Prajwal R et al. (2023)	Developed video based AI interview	Deep learning, computer vision, video analysis	Facial expression recognition, personality prediction	Evaluates soft skills, reduces efforts, handles many candidates	Privacy concerns, expansive models,
Chavan & Jadhav (2026)	Designed AI mock interview system	NLP, speech recognition.	Resume parsing, speech-to-text answer scoring	Personalized feedback, good for practice, available anytime.	Limited realism, mostly text based evaluation,

4. Research gap Identified

- i. No study provides complete AI recruitment systems covering resume screening, interview, scoring and feedback together.
- ii. Some papers are only conceptual or analytical without developing a real working system.
- iii. Candidate experience is studied, but technical implementation details are missing.
- iv. Video-based AI systems raise privacy and data protection concern.
- v. Mock interview systems focus mostly on text-based or basic speech evaluation, lacking full realism.
- vi. Limited focus on real-time evaluation.
- vii. Lack of transparency in how AI systems calculate scores and make decisions.
- viii. Most systems do not strongly address security, fairness and long-term performance tracking.

5. Research Objectives

- 1. To study the traditional interview process and understand its limitations.
- 2. To develop an AI-Based interview automation system.
- 3. To automate resume screening and candidate evaluation.

4. To make the recruitment process faster, more efficient and cost-effective.
5. To provide performance analysis and feedback.
6. To reduce the workload of HR teams by automating interview related tasks.
7. To provide a platform where candidates can practice and improve their interview skills.

6. Proposed Methodology

Hiring is rarely a single decision; it is a process that involves a series of choices that lead to either a job offer or a rejection. The hiring process starts before anyone applies for a job and candidates might be turned down or encounter disadvantages at any point. It's important to note that new hiring technologies don't often help make positive hiring decisions, but they do often automate rejections (M. Bogen and A. Rieke, 2018). Proposed methodology help to solve candidates and organizations both problem to make an automated system.

Nature language processing concepts were applied to evaluate candidate responses. The system analyzes answers based on keyword matching, semantic similarity and scoring logic to generate automated result. Using these machine learning approaches model help to assess accurate information. The below Fig.1. shows the working flow of an AI-Based Interview Automation System. AI-Based Interview Automation System application module divided into various module. Some of the module are following-

6.1. Home page

- The system starts from the Home Page
- Three types of users can login in: org Login, studLogin, candLogin.

6.2. Organization Side (Admin Flow)

After login, the organization can:

- Go to Org Dashboard
- Make Payment (if token are not enough)
- Add candidates in batch
- View other Dashboard Analysis
- Check Previous Batch Analytics
- The org can also send invitations to members/candidates

6.3. Organization Side (Admin Flow)

After login, the organization can:

- Go to Org Dashboard
- Make Payment (if token are not enough)
- Add candidates in batch
- View other Dashboard Analysis
- Check Previous Batch Analytics
- The org can also send invitations to members/candidates

6.4. Student/Candidate side

- Students login through Stud Login
- If token are not enough, they need to complete payment
- Candidates log in through Cand Login.

After login they go to:

- System verification & rules showcase

- Identify verification
 - Show interview rules and guidelines
- 6.5. Backend Processing (main AI work)**

- Analyze resume + Organization Requirements
- AI reads candidate resume
- AI checks company job requirements
- Generate questions
- AI creates personalized interview questions based on skills and job role.

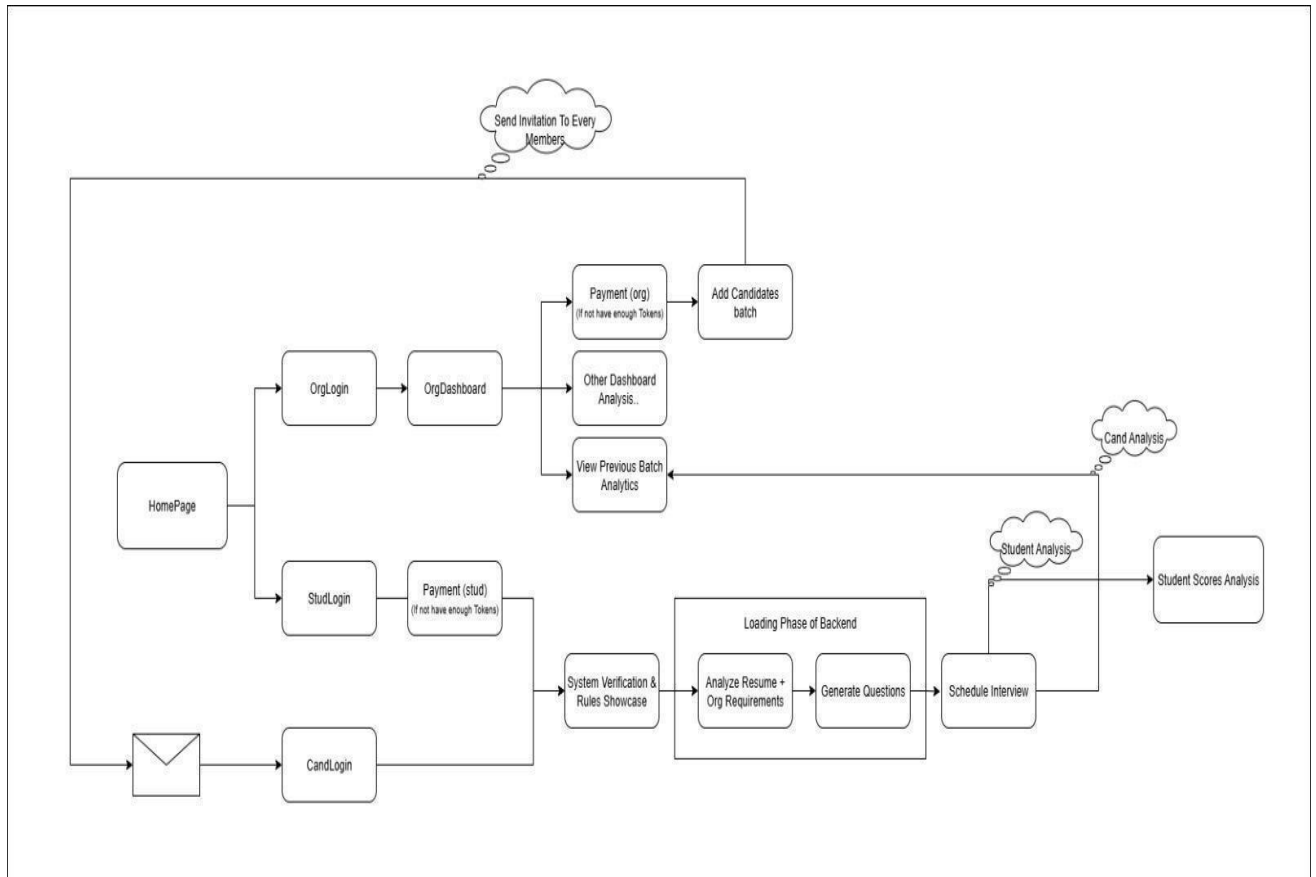


Fig. 1 – Workflow of AI Based Interview System

6.6. Interview Scheduling

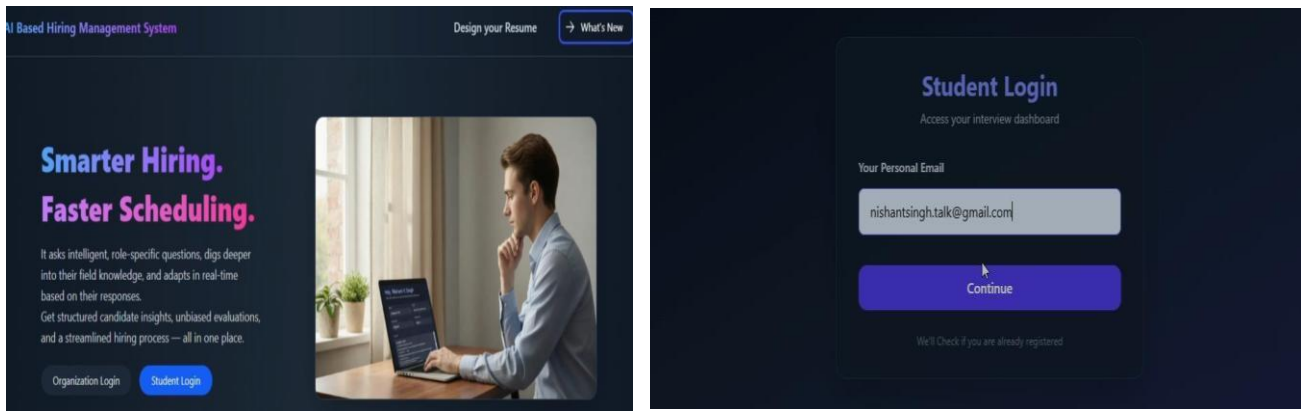
The system automatically schedules the interview.

6.7. Analysis section

- After the interview:
- Student Analysis
- Student performance evaluation
- Candidate analysis
- Overall candidate assessment
- Student score analysis
- Marks, ranking and skill evaluation.

7.Result and Discussion

This section shows interface developed by researcher and various dashboard in form of output. Below Fig.2.(a) shows, the interface of the AI based Hiring System developed for this research. The system helps organizations to conduct interview on a smarter and faster way using artificial intelligence. It ask role-specific questions and analyses candidate



responses to support the hiring process. The platform also provides separate login options for organizations and students.

Fig. 2. (a) AI based Hiring System Interface; (b) Student Login Page

Fig.2.(b) shows the student login interface of the AI Based Hiring System. Through this page, students can access their interview dashboard by entering their registered email address. After login, candidates can participate in AI based interviews and track their interview activities.

Fig.3. dashboard displays the candidate’s interview performance through graphs and charts. It evaluates different skills such as technical knowledge, communication, problem solving and confidence. The system also shows the resume match score and allows students to view or schedule interviews easily. With the help of this dashboard candidate easily analysis their performance.



Fig. 3. Candidate interview analysis Chart.

Fig.4. (a) shows the resume analysis section of the AI Based interview automation system. The candidate uploads their resume and the system automatically extracts important details such as name, contact info, skills and experience. The AI model work on all these extracted information and analyze the resume. Based on analysis system instruct the candidate for further process.

Fig.4. (b) shows the subscription or pricing plans available in the system. Subscription and price are payment plans in which users pay a set amount of money every month or year to keep using a service. User can choose and purchase a plan

according to their interview needs.

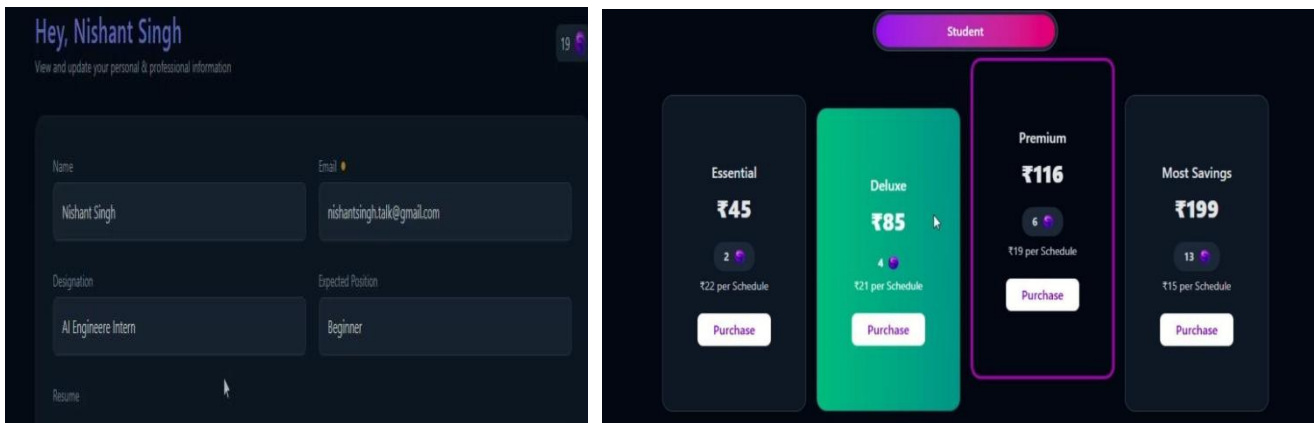


Fig. 4. (a) Candidate Resume Details Form; (b) Student Subscription

The Fig. 5. (a). shows an Organizational Login Page for a professional platform. Users are prompt to enter their primary email to access a dashboard for managing interviews and subscriptions.

The Fig.5. (b) dashboard displays a list of applicants for an AI Engineer Intern Position likely within recruitment. It tracks key candidate details such as emails addresses, assessment scores and resume titles to help recruiters evaluate.

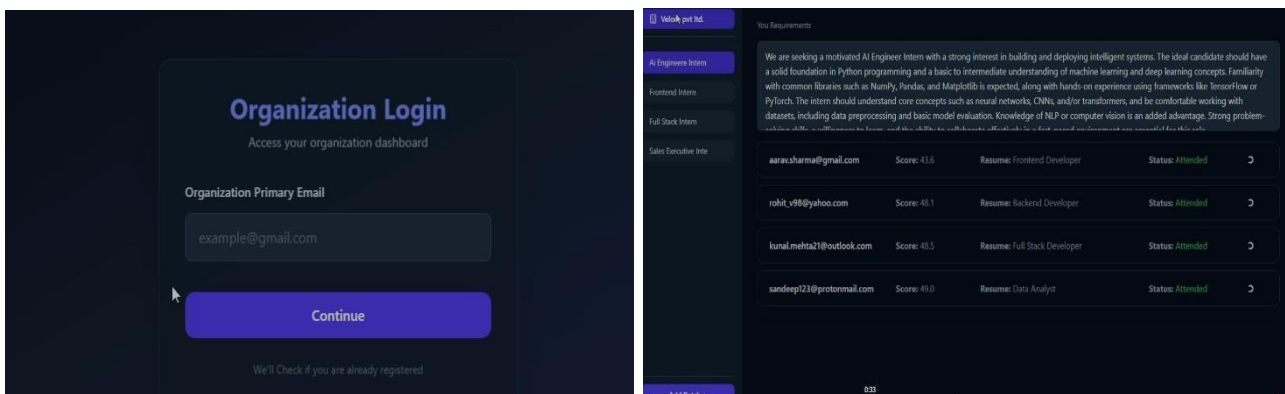


Fig. 5. (a) Organizational Login Form; (b) Candidate information form.

Some more feature have also implemented like an organization profile settings dashboard candidates can identify the company, manage info and control branding. Other is subscription plans for organizations offering four tiers: essential, deluxe, premium and most saving.

This is also provide setup page where the interviewer can start a new hiring round. Just give the group name, describe the job and add the candidate emails to get the whole thing moving.

Overall, this research provide a complete solution to candidate and origination for recruitment process. This is also help to candidates for resume building.

8.Conclusion

This research paper, describe AI based interview Automation System and how it helps to improve the recruitment process. Research paper explain, how the system works step-by-step process, from resume checking to asking questions, giving marks and sharing final results with the company. The system reduces manual work, saves time and lowers the cost of hiring. It also makes the process more fair and organized.

The main benefit of this system is that it helps companies quickly select candidates without spending too much time and money. It also gives students and rural candidates a chance to attend interviews from anywhere.

In future the system can be improved by making AI more intelligent in understanding human behavior, improving communication analysis and ensuring full fairness. Better data security and stronger cheating detection can also be added. With continuous improvement, AI- based interview system can become a normal and trusted method for hiring in many organizations. AI can be trained to better understand how clearly a person speaks, how confident they sound and how they behave during the interview. This will help companies judge candidates more accurately just like a real interviewer would do.

If the system keeps improving and is used properly, AI based interview systems can become a normal and trusted way of hiring (E. Glikson and A. W. Woolley, 2020). Many companies may prefer this method because it saves time, reduces cost and makes the process fair for everyone. Over time it can become a reliable and common solution for recruitment in different industries.

REFERENCES

1. M. Raghavan, S. Barocas, J. Kleinberg, and K. Levy, Mitigating bias in algorithmic hiring: Evaluating claims and practices. In *Proceedings of the 2020 Conference on Fairness, Accountability, and Transparency (FAccT '20)* (pp. 469–481). Association for Computing Machinery, 2020.
2. Piotr Horodyski, „Applicants' perception of artificial intelligence in the recruitment process, *Computers in Human Behavior Reports*, Volume 11,2023,
3. Prajwal R, Divyansh Divya, Hitesh Gowda K , Hemalatha K.L, AI Interview Agent for Predicting Communication Skills and Personality Traits, *INTERNATIONAL JOURNAL OF ENGINEERING RESEARCH & TECHNOLOGY (IJERT) RTCSIT – 2023 (Volume 11 – Issue 08)*,2023.
4. Chavan, Pushpa & Jadhav, Sandeep. A General Paper on AI Based Mock Interview System. *International Journal of Scientific Research in Science, Engineering and Technology*. 13. 118-126, 2026.
5. T. Chamorro- Prejudice, D. Winsborough, R. A. Sherman, and R. Hogan, New bestowal signals Shiny new objects or a stalwart new world? ” *Artificial and Organizational Psychology*, vol. 9, no. 3, pp. 621 – 640, 2016.
6. J. S. Black and P. van Esch, AI- enabled recruiting What is it and how should a manager exercise it? ” *Business Horizons*, vol. 63, no. 2, pp. 215 –226, 2020.
7. N. Mehrabi, F. Morstatter, N. Saxena, K. Lerman, and A. Galstyan, A check on bias and loveliness in engine knowledge, *ACM Computing checks*, vol. 54, no. 6, pp. 1 – 35, 2021.
8. S. Raisch and S. Krakowski, Artificial intelligence and operation The automation – elongation contradiction, *Academy of Management Review*, vol. 46, no. 1, pp. 192 – 210, 2021.
9. S. Russell and P. Norvig, *Artificial Intelligence: A Modern Approach*, 4th ed. Hoboken, NJ, USA Pearson Education, 2021.
- 10.A. Kaplan and M. Haenlein, “Siri, Siri, in my hand: Who’s the fairest in the land? On the interpretations, illustrations, and implications of artificial intelligence”, *Business Horizons*, vol. 62, Issue 1, pp. 15 – 25, 2019.
- 11.T. H. Chesterfield and R. Ronanki, Artificial intelligence for the real world, *Harvard Business Review*, vol. 96, no. 1, pp. 108 – 116, 2018.
- 12.P. Tambe, P. Cappelli, and V. Yakubovich, Artificial intelligence in mortal resources operation expostulations and a path forth, *California Management Review*, vol. 61, no. 4, pp. 15 – 42, 2019.
- 13.E. Glikson and A. W. Woolley, mortal trust in artificial intelligence Review of existential disquisition, *Academy of Management Annals*, vol. 14, no. 2, pp. 627 – 660, 2020.
- 14.M. Bogen and A. Rieke, “Help wanted: an examination of hiring algorithms, equity, and bias. *Upturn*, 2018.