

# AI in Hiring



Final Presentation  
Meg Patton and Ryan Kendall

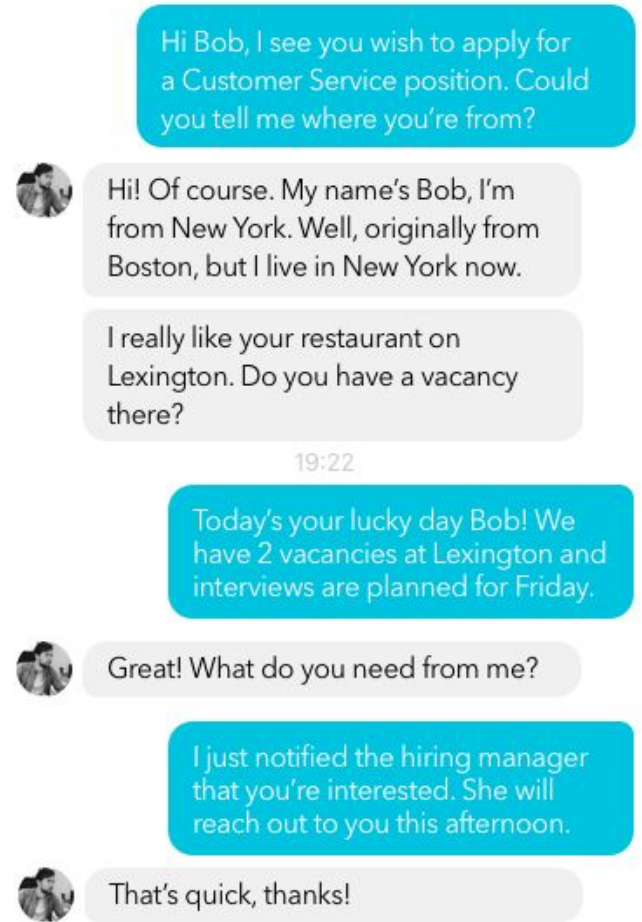
# Problem

Emerging growth of AI products in hiring

Past research focuses on the employer and HR professional's perspective

Lack of understanding of candidate awareness and potential behavior impacts across the entire process of finding a job.

\*While seeking to understand awareness/behavior we also gathered data on candidates' attitudes towards tools



# Related Work



Ethical and Bias  
Concerns

Yarger et. al., 2019

Raub, 2018



Changes in  
Candidate  
Behavior

Völkel, et. al., 2020



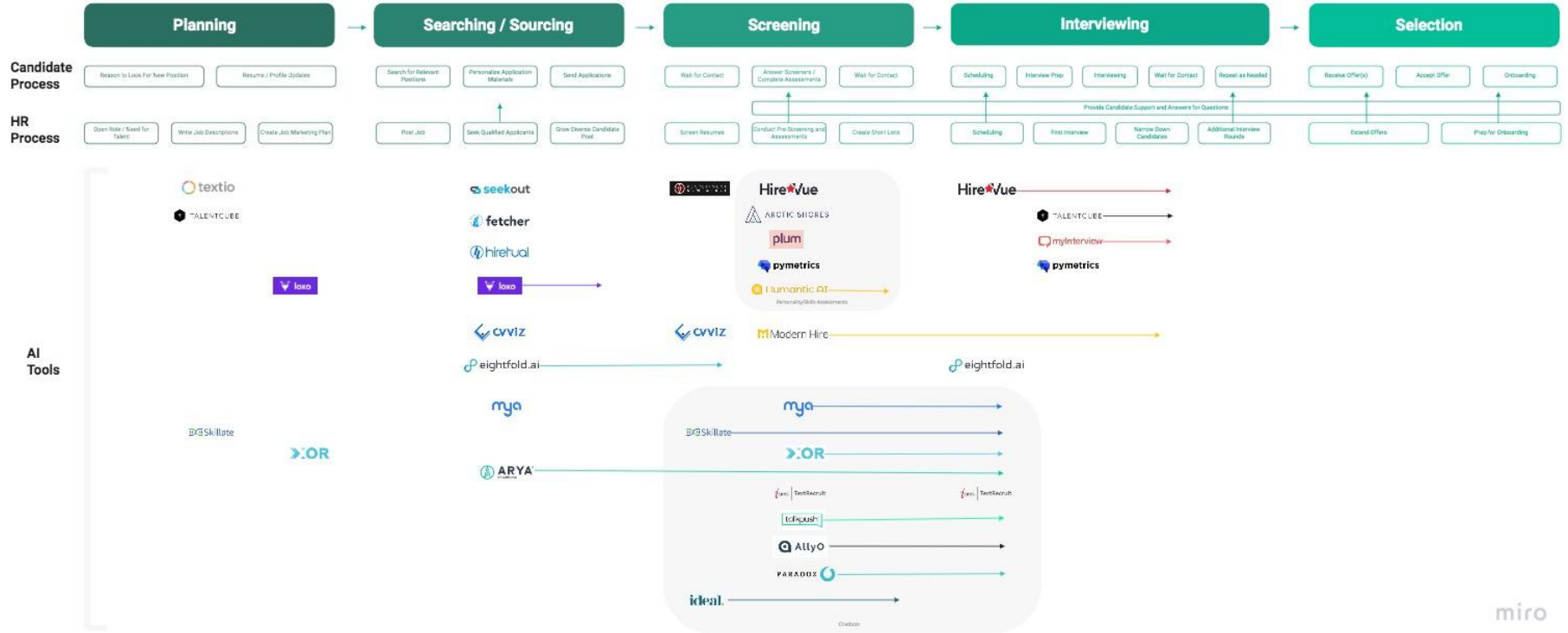
Attitudes  
Towards AI  
Hiring Tools

Langer, König, 2017

# Research Methods

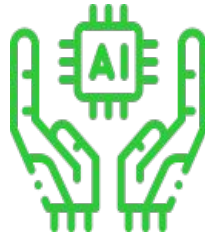
- Tool Mapping
- Survey
- Archival Analysis
- Interviews

# Tool Mapping



# Survey Design and Distribution

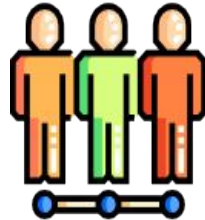
AI awareness, certainty,  
and changes in behavior



Pre- / Post-exposure  
attitudes



Demographics



- Snowball Sampling
- Personal social media, Facebook Groups, Veteran Hiring forums
- Incentive using 2 x \$50 gift cards
- 166 total responses, 112 complete

# Archival Analysis

Scraped job related Subreddits for AI in hiring related keywords:

- Gathered 310 total submissions, filtered for on-topic and duplicates, 154 remaining were used
- On-topic submissions were discussing AI used for hiring (ex. of off topic: how to get a job working in AI)

## Keywords

- Hirevue
- Pymetrics
- Chatbot
- AI

## Subreddits

- Jobs
- Interviews
- AskHR
- RecruitingHell

# Interviews

Semi-Structured Interviews  
with 10 participants (recruited  
from willing survey pool):

- Follow up on survey attitudes and responses
- Experience with AI in hiring
- AI hiring tool activity
- Behavior change

## Ranking

How would you feel if you knew this tool was being  
used in the context of a job that you applied for?

Comfortable



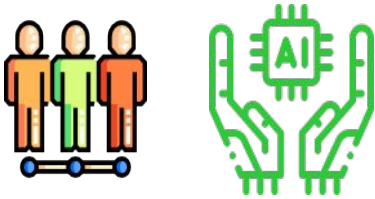


# Analysis

- Survey
- Qualitative Data

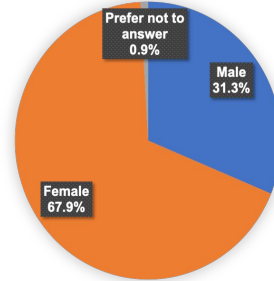
# Quantitative Analysis

- Stata
- Descriptive statistics

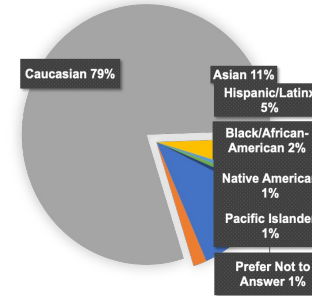


- Regression models
- Repeated Measures

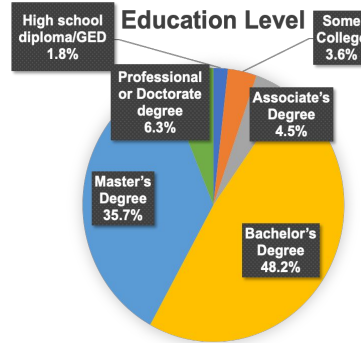
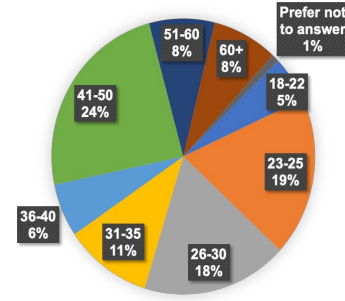
Respondents' Gender



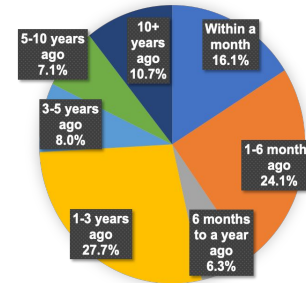
Race and Ethnicity



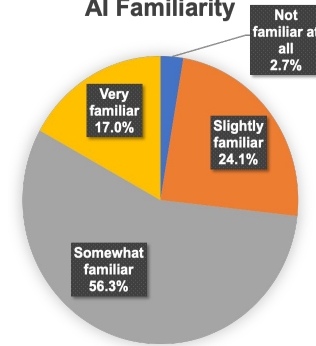
Age



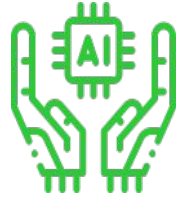
Time since last job application



AI Familiarity



# Quantitative Analysis



Does candidate awareness of AI in the hiring process effect candidate behavior?

- Constructed ordinal variables to measure increasing change in candidate behavior, certainty, and suspicion of hiring of AI in the hiring process
- Ordinal logit model
- Controls for gender, ethnicity, age, and education

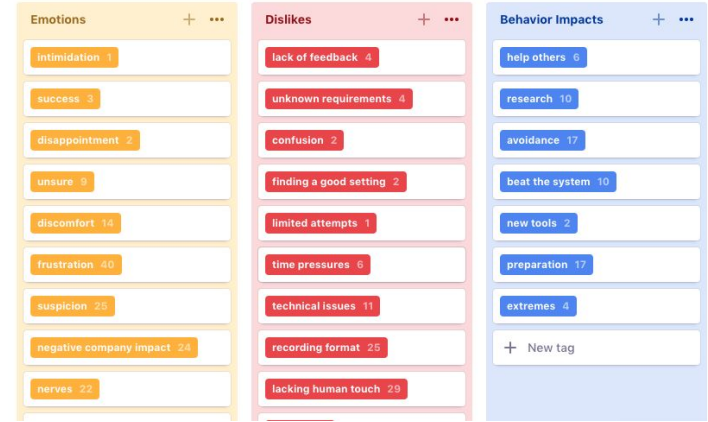
How does exposure to AI tools effect candidate attitudes regarding AI in the hiring process?

- Agree / disagree 7pt Likert scale statements
- Panel data with time1 and time2 observations for each respondent
- Comparison groups analyzed using repeated measures

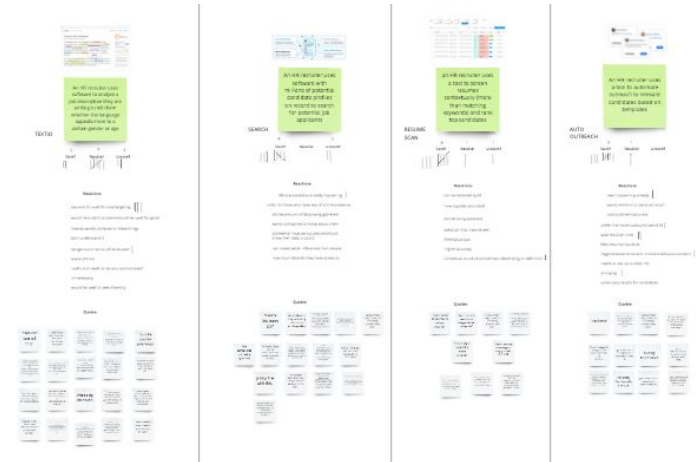


# Qualitative Coding

Qualitative Data (Archival Posts, Open ended survey responses, and interview transcripts) were coded individually but compared across all 3 to see common themes.



- Zoom Recording, Otter.ai transcription with manual review
- Dovetail Qualitative Analysis Tool
- Miro board affinity diagramming
- Synthesis and Theme Creation

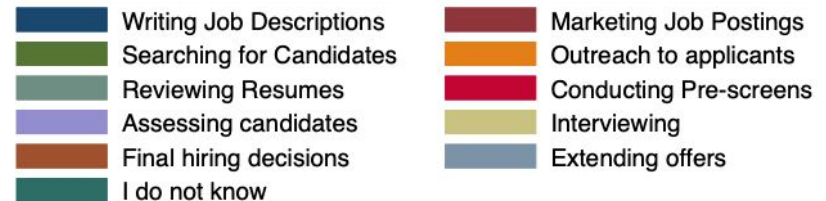
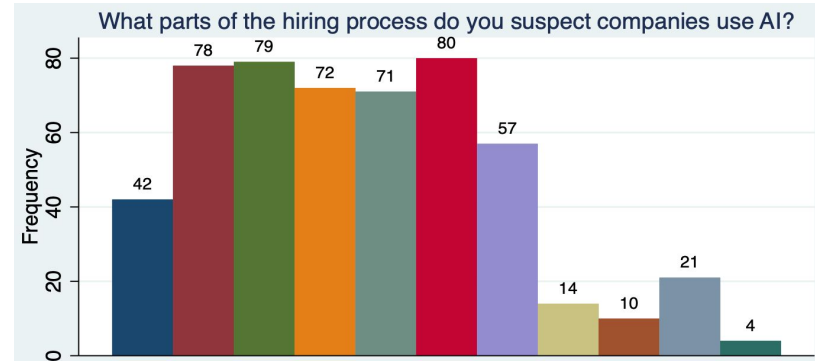
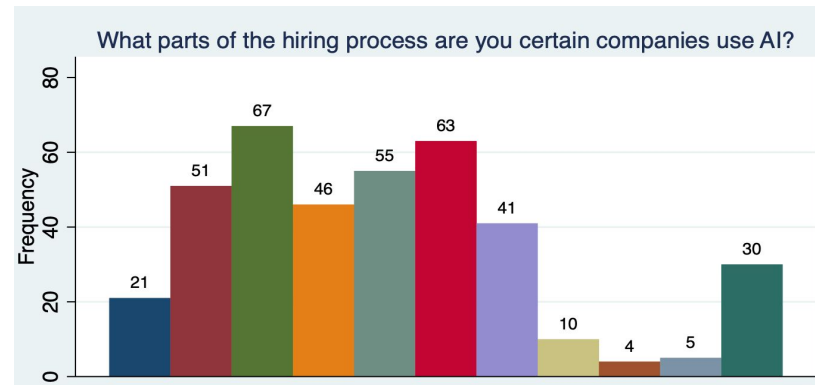


# Results

- Awareness
- Attitudes
- Questions and Concerns
- Behavior

# Awareness

- Around 27% of survey respondents did not know for certain AI was used in hiring process
- 96% of survey respondents suspected that AI was being used for hiring
- Awareness of AI in hiring varies throughout the process



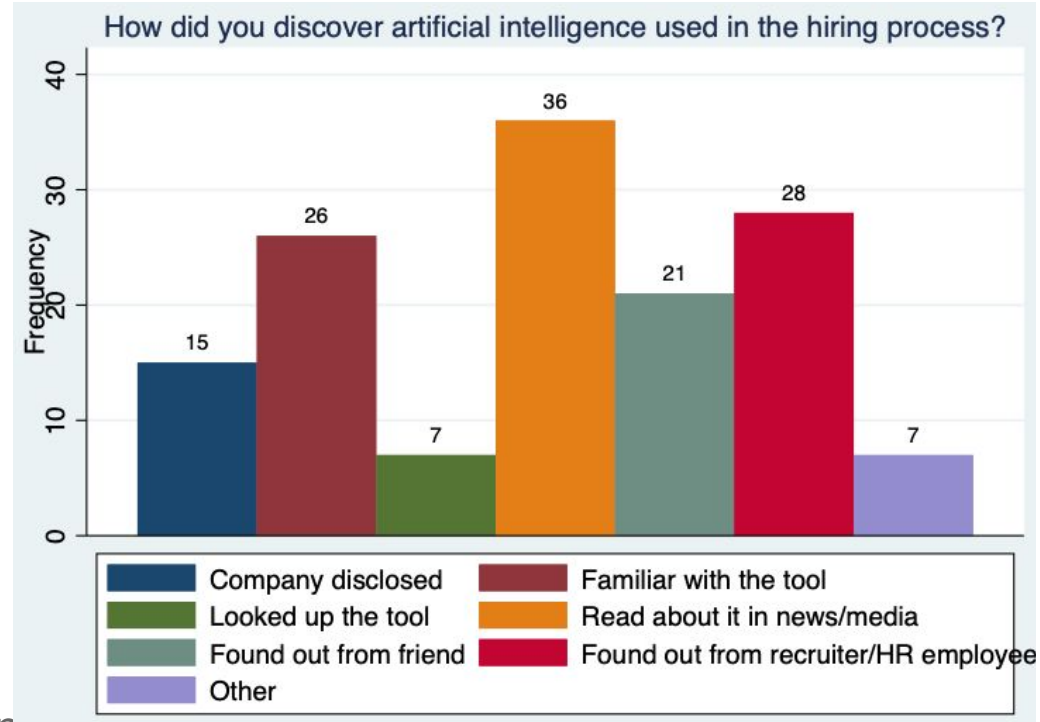
# Awareness

## Avenues to Awareness

- People
- Logical Reasoning
- First Hand Experience
- Research or Media

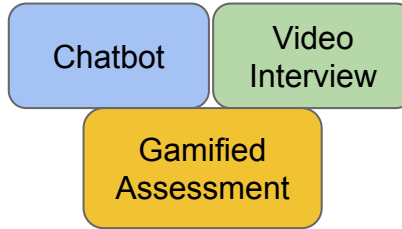
## Awareness ≠ Understanding

- Despite knowing or thinking AI is used, candidates do not fully grasp how or what AI is being used to do

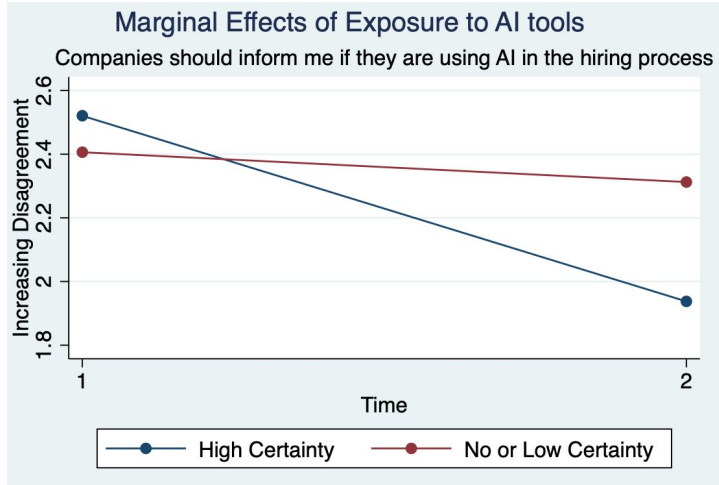


# Awareness and Attitudes

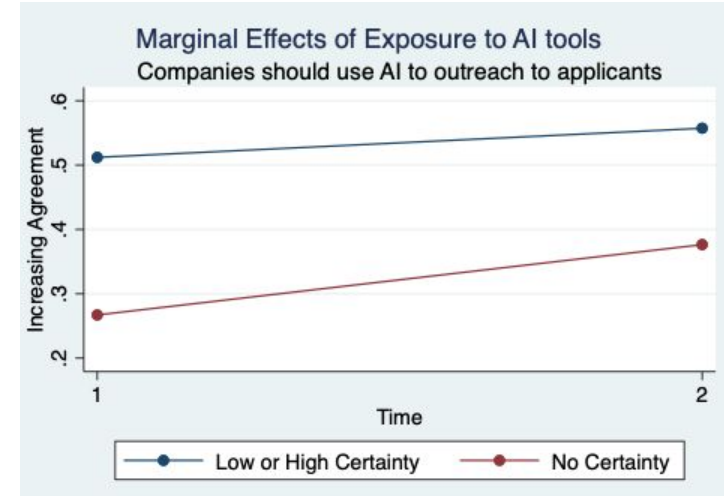
Agree/Disagree Statements (fair, important, improve, inform, approach, highly)



During which parts of the hiring process do you think that companies **should** utilize artificial intelligence?



Coeff.	SE	t	P> z
0.4146	0.1954	2.12	0.034*

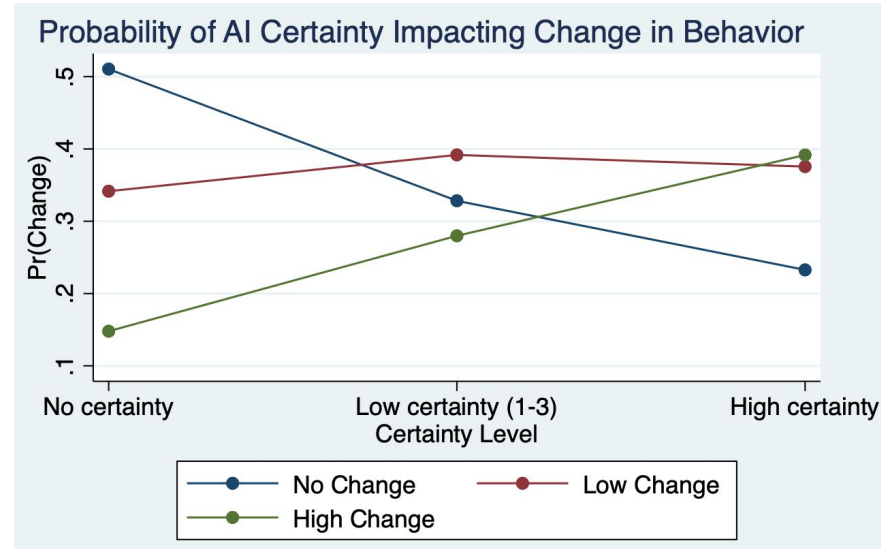


Coeff.	SE	t	P> z
0.1878	.0850	2.21	0.027*



# Awareness and Behavior Change

- Survey responses indicated that the higher awareness someone had the more likely they are to change behavior due to AI
- Suspicion did not have the same effect as concrete knowledge of use of AI



	Odds Ratio	SE	z	P> z
Low certainty	2.514	1.3491	1.72	0.086
<b>High certainty</b>	<b>4.533</b>	<b>2.4208</b>	<b>2.83</b>	<b>0.005</b>

*\*Respondents with high certainty 4.5 times more likely to change behavior in the hiring process than those not certain*

# Attitudes: Functionality Awareness

## Negative Attitudes

Distrust



“I don't know if you can gauge someone's fit based on how they perform in a game.” - Survey response, Arctic Shores

Discomfort



“This is creepy.” - Survey response, Arctic Shores

“it seems kind of invasive.” - Interview Participant 6, Seekout

Impersonal



“Impersonal, rude... I'm taking the time to prepare and be present for an interview, yet the company can't take the time to meet me?!” - Survey response, Hirevue

# Attitudes: Functionality Awareness

## Neutral Attitudes

Uncommitted



“There are pros and cons” - Survey response, Hirevue

“Interesting but still unsure how it would be a determination to the next step. ” - Survey response, Olivia

Accepting



“Seems expected behavior for a natural language processing AI” - Survey response, Olivia

“I figure things like that has been happening for a long time” - Interview Participant 6, Humantic

# Attitudes: Functionality Awareness

## Positive Attitudes

Attractive



“I think that product is a step in the right direction.” - Survey response, Hirevue

“I think it’s a fun and interactive way for interviewers to determine skills they are looking for in a candidate.” - Survey response, Arctic Shores

Impressed



“Impressive technology and is helpful for large scale organizations that have to process hundreds of not thousands of applicants.” - Survey response, Hirevue

“It is amazing that technology has come so far in such a short amount of time.” - Survey response, Olivia

# Attitudes: Real Life Experience

Frustration 

“This type of recruiting process is just silly and ridiculous. They didn't even check my CV, references or cover letter.” - Recruitinghell Subreddit, Arctic Shores

Discomfort 

“I just sort of freeze and become awkward staring into a screen at...myself.” - Jobs Subreddit, Hirevue

Nerves 

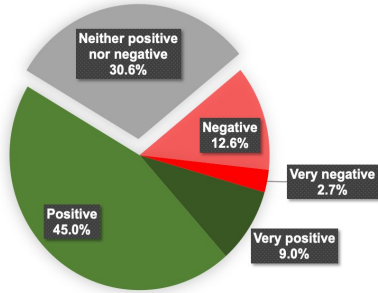
“Even though I have enough experience in my field to be more than confident, I went into it incredibly nervous.” - Jobs Subreddit, Hirevue

\*The majority of reddit posts (115/154) were about Hirevue/video interviewing

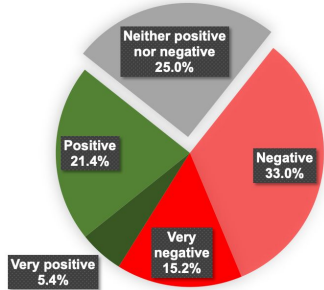
# Tools and Attitudes

## Survey Tools

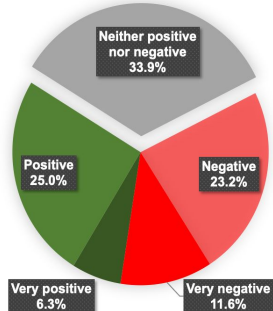
What is your initial reaction to Olivia?



What is your initial reaction to HireVue?



What is your initial reaction to Arctic Shores?



## Interview Tools

Comfortable Neutral Uncomfortable

Textio

(Job Descriptions)



Seekout

(Search)



CVViz

(Resume Screen)



Humantic

(Personalization)



ARYA

(Headhunting)



Plum

(Assessments)



Loxo (Automated

Outreach)



# Questions and Concerns

## Accuracy

Questions about how accurate tools are, how they work, and concerns over potentials for inaccuracy based on the data.

## Relevancy

Musings about whether tools really measure things that are relevant to positions and job performance.

## Expectations

Questions about everything from content to technical details. Lack of knowing what to expect in this new paradigm.

## Privacy

Questions about how data is accessed and what candidates' rights are over their likeness. Concerns over use of public data.

## Power Imbalance

Concerns over how these tools put HR at a greater advantage in the hiring process, and candidates have less control.

## Discrimination

From demographic targeting to built in advantages for certain types of systems, there are questions about the ethics of these tools.

# (Potential) Behavior Change

## Avoid AI

Some avoid companies they think will be using AI tools, or quit applications that require interacting with an AI tool that is a dealbreaker.

*“I was so angry that my experience and education didn't speak for itself anymore I refused to participate in the system that I hated so much.” - Jobs Subreddit, AI*

## Adapt to AI

### **Adapt Current Behaviors**

Some continue their current interview/hiring process prep methods but account for AI tools.

### **New Behaviors**

Some people plan to or do adopt completely new AI specific behaviors such as gaming strategies, taking classes/studying for AI assessments, or changing approach to public data.

## No Change

Some report that there is nothing they would change about their current approach due to AI in hiring.

*“It's always pretty black and white for me as a person, my answer choices... human or computer, your answer has to be the same regardless. Because you don't know what that person's preferences are. So it would have to be the truth regardless.” - Interview Participant 6*



# Risks and Recommendations

- Companies Using AI Tools
- AI Developers
- Candidates

# Risks and Recommendations

	RISKS	RECOMMENDATIONS
<b>Companies</b>	<ul style="list-style-type: none"><li>● Candidate Disenfranchisement</li><li>● Negative brand impact</li><li>● Not getting the right candidate</li><li>● Effective filtering vs. adaptive behaviors</li></ul>	<ul style="list-style-type: none"><li>● Transparency about AI in your hiring process</li><li>● Offer reasonable alternatives</li><li>● Periodic assessment</li><li>● Robust candidate support</li></ul>
<b>AI Developers</b>	<ul style="list-style-type: none"><li>● Negative tool image</li><li>● Poor candidate experience</li><li>● Bias and discrimination</li><li>● Privacy overreach</li></ul>	<ul style="list-style-type: none"><li>● Address negative candidate experiences</li><li>● Clear and transparent privacy policies</li><li>● Transparency regarding bias and discrimination</li></ul>
<b>Candidates</b>	<ul style="list-style-type: none"><li>● Avoid/no change behavior narrow your options</li><li>● Non adaptive may not be effective long term</li><li>● Power relationship increasingly disadvantages the candidate as AI use increases</li><li>● Lack of understanding leading to ineffective strategies</li></ul>	<ul style="list-style-type: none"><li>● Become informed about how AI is being used</li><li>● Change behavior based on the AI platform</li><li>● Voice feedback through online forums</li><li>● Explicit feedback to companies during hiring process</li></ul>

Questions?