

An Audit of Images Used by Job Advertisers on Facebook

Varun Nagaraj Rao, Aleksandra Korolova



USC University of Southern California

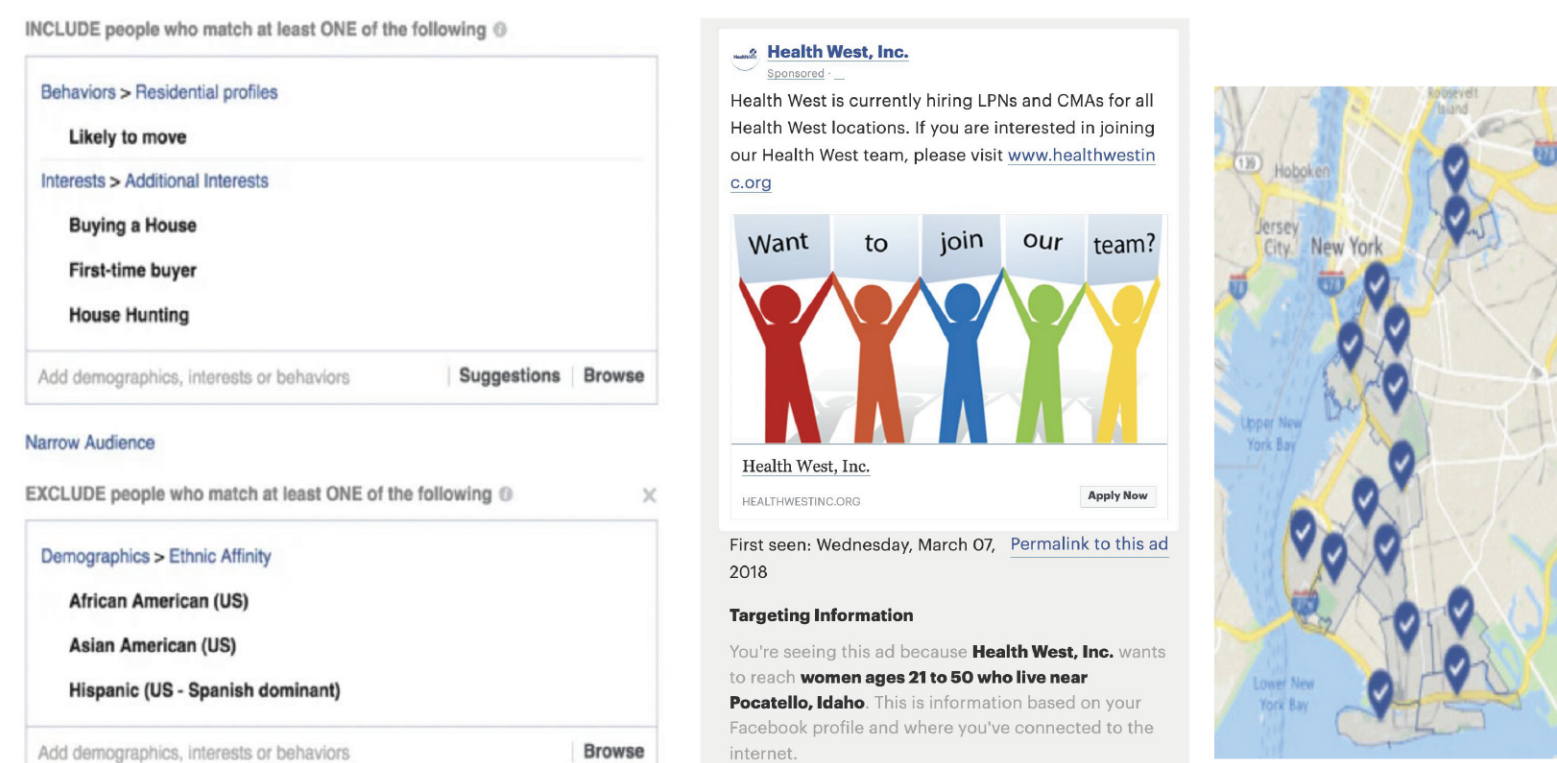


PRINCETON UNIVERSITY



MOTIVATION

- Facebook's **ad targeting, audience selection tools, and ad delivery algorithm** shown to be discriminative.
- Lawsuits from ACLU to EEOC, HUD;
 - Title VII, Section 230 of CDA, FHA
- June 2022 DoJ settlement - U.S vs Meta



OUR HYPOTHESIS

- Deliberate choice of images** - circumvent disabling of targeting and audience selection.



Fair Housing Act - Ragin v. New York Times (1989); Is it Time to End the Use of Models in Housing Advertisements

- Inspired by:
 - Social science theories - persuasive influence of images on job applications.
 - Case law - images discourage minorities from seeking housing opportunities.
 - Statutory parallels and shared objectives between employment and housing law.



Job Ad Images of NYPD_Recruit and Nurse_Recruiter on Facebook Ad Library

METHODS AND FINDINGS

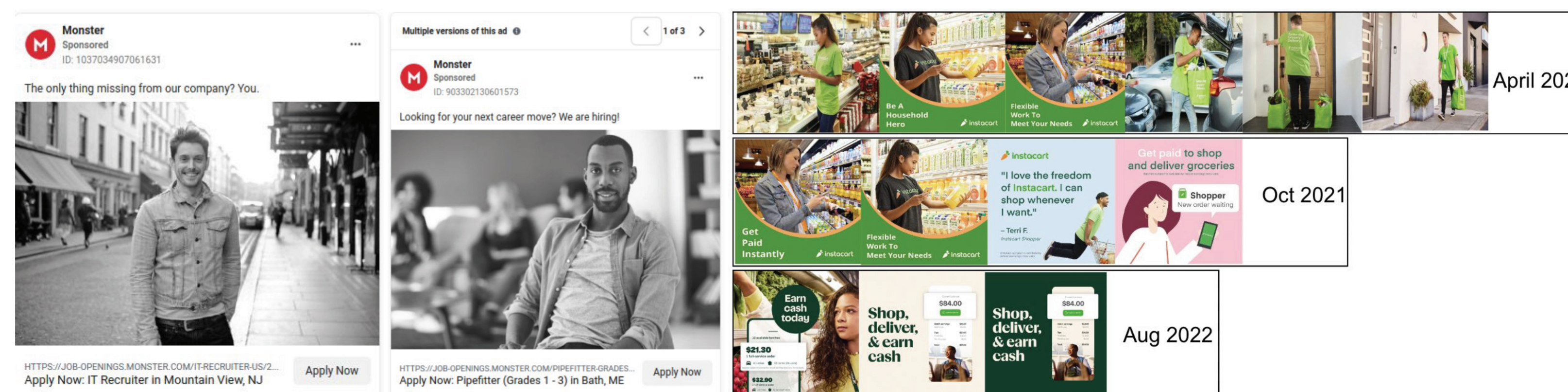
- Audit job ad images on Facebook Ad Library.
- If *rate of representation* of gender and race of people in the images - *statistically significantly differs* from that of the *U.S. workforce* for that occupation => **deviation in representation**

Company	Women			Women (weighted)		
	%	Δ%	Count	%	Δ%	Count
Doordash	71.54	24.74	44	60.25	13.45	507
Eataly	34.91	16.91	18	34.91	16.91	18
Geico	62.50	12.40	20	62.50	12.40	40
HopSkipDrive	70.92	12.42	130	76.22	17.72	264
Instacart	90.91	44.11	10	87.59	40.79	127
Lyft	76.86	30.06	134	72.74	25.94	198
Nurse_Recruiter	91.46	17.06	112	90.81	16.41	124
NYPD_Recruit	48.28	31.18	7	50.00	32.90	28
TSA	77.92	54.32	30	71.68	48.08	691
UPS_Jobs	50.98	30.48	13	50.25	29.75	100
BestBuy	49.12	-12.18	362	48.12	-13.18	951
NJS_Education	62.03	-11.47	98	62.03	-11.47	98
Safeway	38.89	18.39	7	40.00	19.50	8
NJS_IT	23.81	-1.39	5	23.81	-1.39	5
Uber	36.00	-10.80	14	38.74	-8.06	22

Evidence of Overrepresentation of Women

Company	White			White (weighted)			Black			Black (weighted)		
	%	Δ%	Count	%	Δ%	Count	%	Δ%	Count	%	Δ%	Count
BestBuy	50.88	-27.82	374	52.69	-26.01	1042	27.72	15.22	204	26.46	13.96	523
Doordash	30.89	-47.81	19	40.94	-37.76	344	40.65	28.55	25	41.59	29.49	350
TSA	45.45	-29.05	18	34.85	-39.65	336	49.35	29.95	19	63.02	43.62	608
Geico	34.38	-45.52	11	34.38	-45.52	22	43.75	32.95	14	43.75	32.95	28
HopSkipDrive	42.12	-30.88	78	53.03	-19.97	184	0.00	-21.50	0	0.00	-21.50	0
Lyft	38.57	-40.13	68	35.17	-43.53	96	19.71	7.61	34	26.89	14.79	73
NJS_Education	68.35	-13.65	108	68.35	-13.65	108	23.42	13.42	37	23.42	13.42	37
NYPD_Recruit	17.24	-67.76	2	17.86	-67.14	10	65.52	54.62	10	64.29	53.39	36
Safeway	16.67	-55.53	3	15.00	-57.20	3	66.67	48.07	12	70.00	51.40	14
Eataly	44.34	-20.86	24	44.34	-20.86	24	20.75	6.05	11	20.75	6.05	11
Uber	42.67	-36.03	16	38.74	-39.96	22	9.33	-2.77	4	12.61	0.51	7
UPS_Jobs	62.75	-9.45	16	57.54	-14.66	114	27.45	8.85	7	34.17	15.57	68
Instacart	72.73	-5.97	8	86.21	7.51	125	9.09	-3.01	1	12.41	0.31	18
Nurse_Recruiter	82.11	6.51	101	83.46	7.86	114	11.79	-0.31	14	10.66	-1.44	14
NJS_IT	71.43	6.03	15	71.43	6.03	15	11.90	2.80	2	11.90	2.80	2

Evidence of Over-representation of Black People and Under-representation of White People



Evidence of Proactive and Stereotypical Advertiser Image Choices by Monster.com and Instacart

IMPLICATIONS

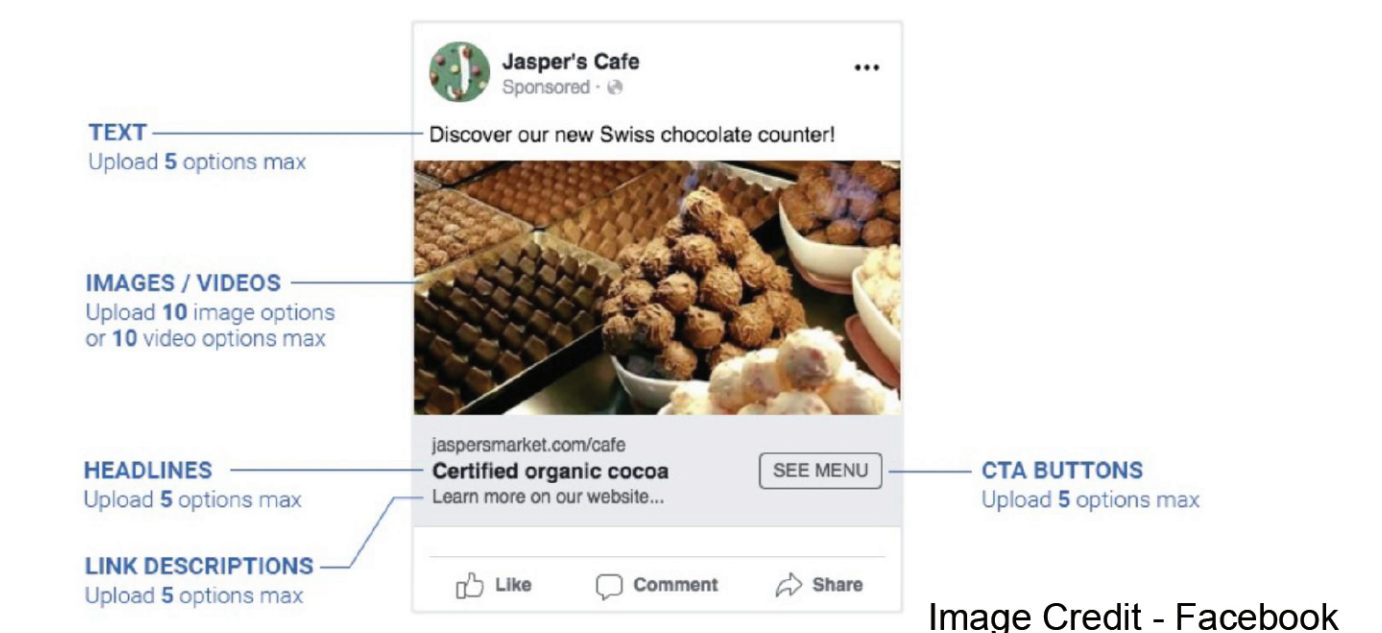
Legal and Ethical Debates:

- Exclusionary use of images:
 - Possibly discriminatory under Title VII and Section 230 of CDA
 - Case law under broader FHA - discourage minorities from applying to housing opportunities.
- Inclusive use of images:
 - Ethically desirable
 - But conflict with affirmative action - reverse discrimination law suits by White Males.
- We do not take a normative position on the legality and ethics of image types.*

Transparency Limitations:



- Prior work - transparency limitations of the **Ad API** and the **Ad Library for Political Advertising**.
 - Assume API access
 - Not present for job ads
- Challenges we encountered in the **Ad Library for Job Ads**, motivated by the desire for:
 - Completeness and Comprehensiveness
 - Impact of Advertiser Choices
 - Covert Studies
 - Easy Access to Bulk Data
 - Study of Advertiser - Platform Interaction



Cannot Study the Algorithmic Personalization of Dynamic Ad Creatives and Carousel Ads