

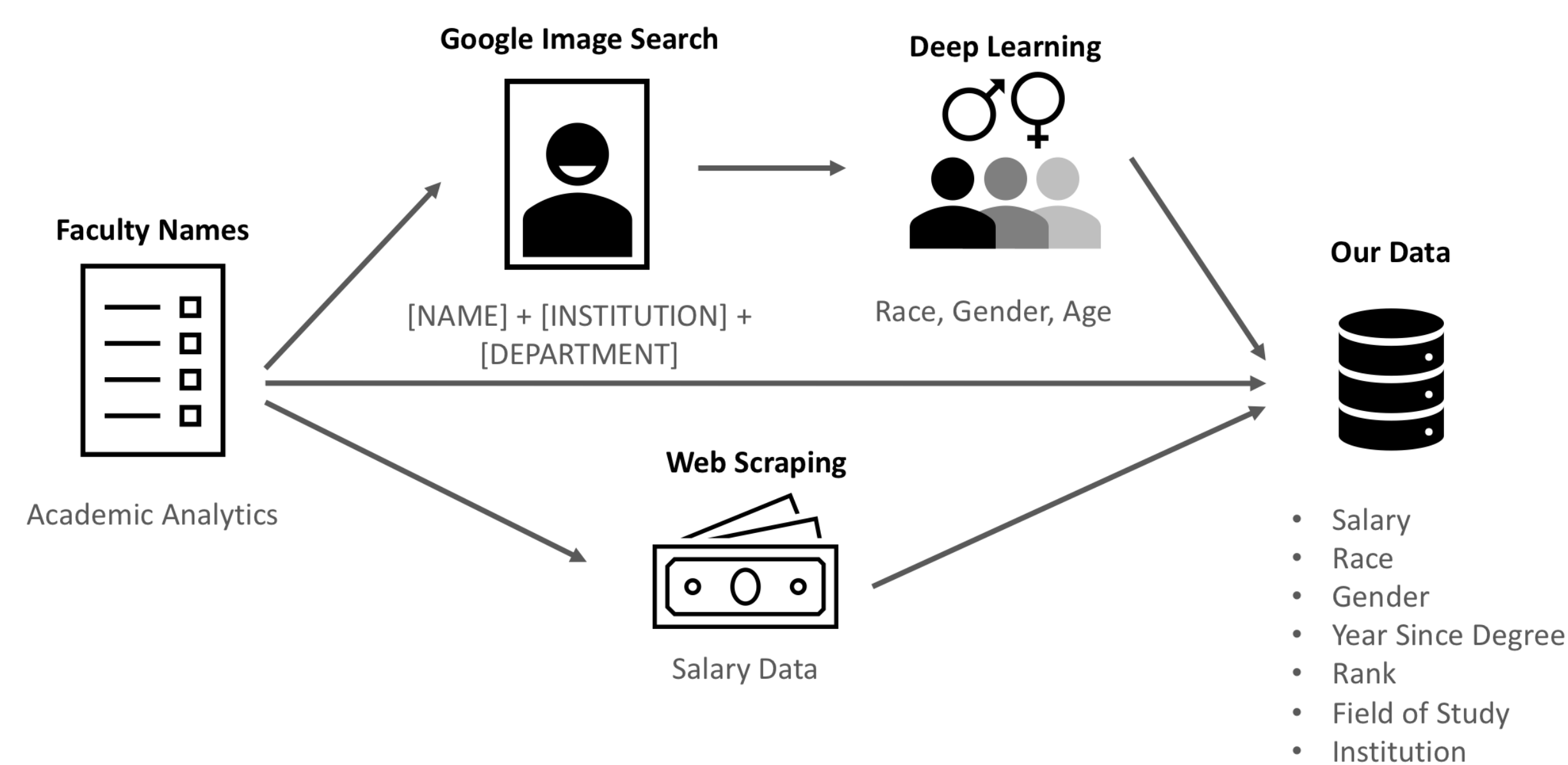
Race and Gender Disparities in Academic Pay

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Introduction

- Existing literature on gender and racial pay gap focus on **allocative, valuative, and within-job discrimination** (Peterson and Morgan 1995; Dwyer 2013; Glenn 1992; Pager, Bonikowski, and Western 2009)
- Literature on **Academic wage** also focus on race and gender (Chen and Crown 2019; Renzulli et al. 2013; Toutkoushian, Bellas, and Moore 2007)
- But most of these studies require **restricted data** or are **limited to certain institutions**
- To overcome this limitation, we extract race & gender using **computational methods** to examine inequality in faculty pay

Data & Methods



- Using image from web, run **deep learning models** to extract **race, gender and age**
- Collect publicly available 2018 salary data (latest)
- 26,079** Professors from **86 universities** across the US
- Linear Mixed-effects Model
- Random intercepts for *field of study & institution*



DCiFR Demographic Characteristic in Facial Recognition

DCiFR - built by our team - is a software allows you to run deep learning models to parse demographic characteristics from a picture. This open-source wrapper software written in Python has a GUI that will allow you to run complex models without any knowledge of coding.

Characteristics

- Age
- Race
- Gender
- Emotion

Supported Modes

- Single-image
- Batch Mode

For more information and instructions on how to run this software, scan the QR code below.



Scan QR code for more details

Results

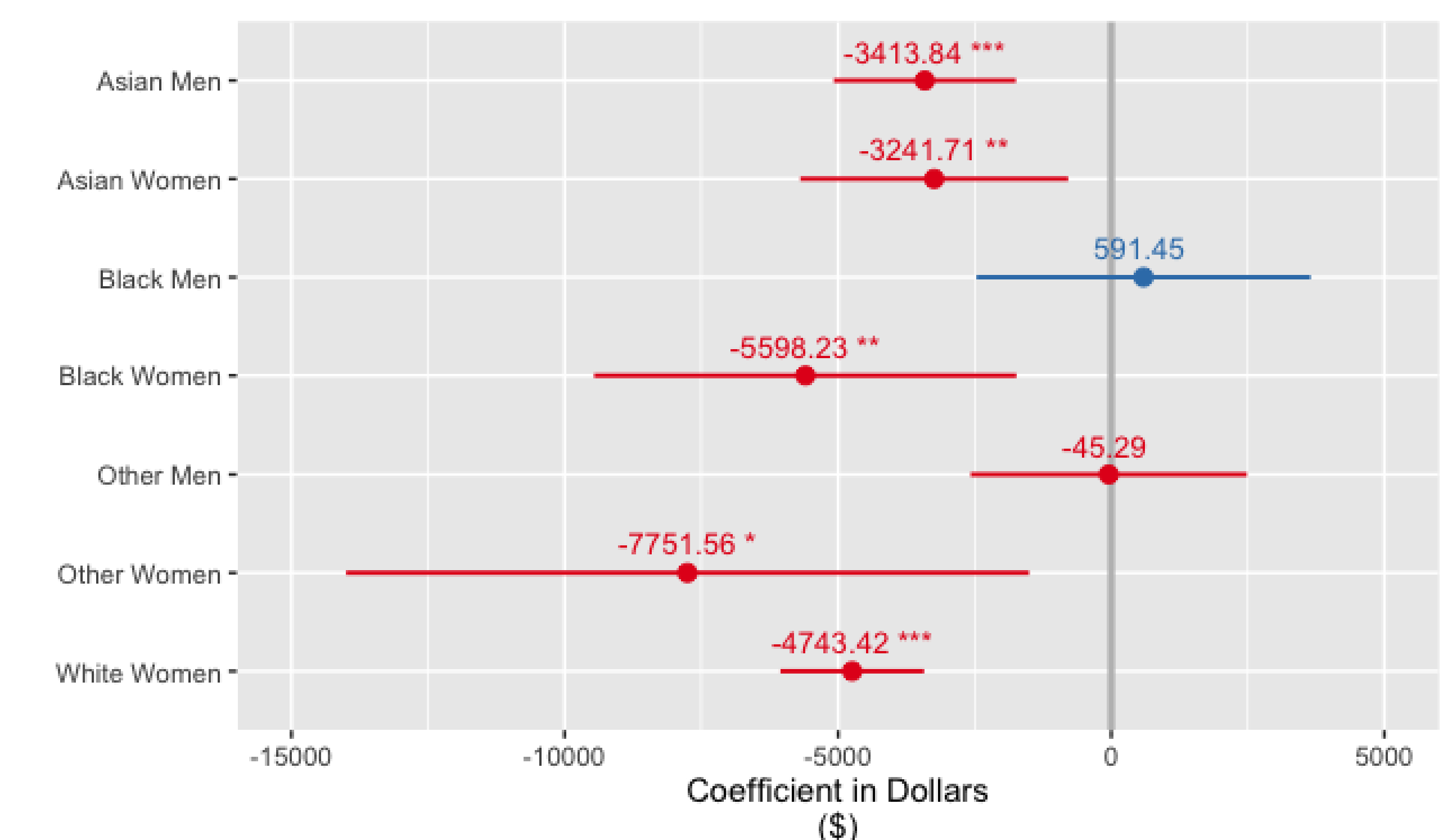
Table 1: Linear Mixed-Effects Model

	Total Salary for 2018				
	Model 1	Model 2	Model 3	Model 4	Model 5
Race (White)					
Asian	-9,010***	-9,656***	-8,853***	-1,965**	-2,161**
Black	-4,238**	-4,651***	-4,443**	67	96
Other	-2,632	-4,885***	-4,405**	-231	-348
Gender (Male)					
Female		-11,043***	-10,502***	-4,077***	-4,180***
Year since Degree			-172***		101***
Rank (Professor)					
Assistant Professor				-52,370***	-54,189***
Associate Professor				-33,856***	-34,872***
Other				-82,968***	-81,191***
Constant	111,756***	116,202***	459,385***	144,721***	144,721***
N	26,079	26,079	26,065	26,079	26,079
Log Likelihood	-318,468	-318,320	-318,067	-315,175	-315,175
AIC	636,951	636,656	636,151	630,372	630,372
BIC	637,008	636,721	636,225	630,462	630,462

*p < .05; **p < .01; ***p < .001
Random Intercepts for field of study and Institution.
Base categories for race, gender, and rank are white, male, and professor.

- There is a significant **racial gap in pay (\$2,161)** for Asians compared to Whites and a **gender gap (\$4,180)** for female faculty, after controlling for rank, and year since terminal degree.
- The change in the coefficients between Model 3 and Model 5 suggest that **certain racial and gender groups take longer to get promoted.**

Intersectional Salary Gap Compared to White Men



Includes random intercepts for field of study and institution, and controls for professorial rank.

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