

Pre-analysis plan

Date: 16 January, 2025

Background: In Feld et al. (2023), we examined how an applicant's gender influences employers' guess of the applicant's programming skills. We did this, by comparing the programming skill guesses of profiles belonging to female and male applicants.

When employers evaluate applicants, the ethnicity signaled by the applicants' first names could also influence the evaluation (note: last name is not shown). In our original study, we did not collect data on perceived ethnicity.

This pre-analysis plans details how we will collect this data on the perceived ethnicity of applicants' first names used by Feld et al. (2023) and how we will use it to analyze the potential effect of perceived ethnicity.

At the end of this document, you will also find the survey we will use to elicit perceived ethnicity.

Measuring perceived ethnicity

We will measure perceived ethnicity with an incentivized survey (see exact survey wording in the appendix to this document). Survey respondents will be shown the job ad used by Feld et al. and the context will be explained to them.

Respondents will then be randomly assigned the first names of 10 applicants who completed the test for our Python programming job. For each name they must guess the ethnicity. In particular, they must indicate the ethnicity of the applicant as either:

1. Alaskan or Native American,
2. Hispanic,
3. South Asian (e.g., Indian),
4. East or South East Asian (e.g., Korean, Japanese, Chinese),
5. Middle East or North African,
6. Native Hawaiian or Pacific Islanders,
7. African American or Black,
8. White.

The categories are mutually exclusive.

This classification is based on the revised classifications to be used in 2030 US Census. We include a further distinction between South Asians and East/Southeast Asians allowing for potential additional analysis. Each name will be shown to 3 respondents.

In addition to a \$1.5 participation fee, for each respondent we will randomly select one name out of the 10 they have been shown. For the selected name, they will receive an additional \$1.5 if their guess is the same as the majority of respondents.

Definition of ethnicity: We define a name as a certain ethnicity if at least 2 out of 3 respondents report the same classification. For instance, if at least 2 out of the 3 respondents classify a name as White, then the name will be considered White. If there is no agreement on the name classification (i.e. 3 different answers), then the name is classified as “unknown”

Sample: The survey will use a sample from Prolific. The sample will consist of people residing in the US who indicate that they work in the information technology sector and who have experience with hiring decisions. This will give us a similar sample to the employers in the original sample in Feld et al.

As there are 256 unique first names and since every participant will make 10 guesses, we require 77 valid survey participants to have 3 observations per unique first name.

Due to the number of unique names, one participant will evaluate 6 names instead of 10.

Sample exclusion: To reduce measurement error we will

- omit anyone who completes the survey in less than a third of the median time.
- omit anyone who failed one or more attention checks
- omit anyone who failed 50% or more of the comprehension checks on the first attempt

We will then recollect the data for those names from these excluded respondents so that we have 3 name guesses for each name.

Analysis

Our analysis will be identical to Table 6, Col 1-4, except for additionally including these perceived ethnicity controls (leaving one as base group to avoid perfect multicollinearity).

- Alaskan or Native American,
- Hispanic,
- Asians: South Asian (e.g., Indian), or East or South East Asian (e.g., Korean, Japanese, Chinese),
- Middle East or North African,
- Native Hawaiian or Pacific Islanders,
- African American or Black,
- White
- Unknown

This classification follows the 2030 US census.

We will repeat the analysis separating the census Asians category into two categories (“South Asian” and “East or Southeast Asian”). This means we will include these perceived ethnicity controls (leaving one as base group).

- Alaskan or Native American,
- Hispanic,
- South Asian (e.g., Indian)
- East or Southeast Asian (e.g., Korean, Japanese, Chinese),
- Middle East or North African,
- Native Hawaiian or Pacific Islanders,
- African American or Black,
- White
- Unknown

In summary, we estimate 8 regressions in total.

PARTICIPANT info

PARTICIPANT INFORMATION

Please read the following information carefully.

This survey aims to understand people's names. It should take around 5 minutes to complete and it is anonymous; we do not record identifiable information.

By completing this survey, you will receive \$1.5. In addition, you can earn \$1.5 more depending on your responses, bringing the total to \$3. Please read the following instructions carefully. The additional payment will be paid out to you 2-3 working days after you complete the survey. You will be ineligible for any payment if you do not finish all the sections.

Please note some of the questions are timed and require you to spend a minimum time before you proceed. We have also included attention checks to ensure quality. If you fail multiple attention checks you may be ineligible for payment.

This survey has been approved by the Monash Ethics Committee project number: 14985

Queries

If you have any questions regarding the study please contact Joseph Vecchi at joseph.vecchi@monash.edu

Country

In which country do you currently live?

Which of the following best describes the sector you primarily work in?

- ☐ Agriculture
- ☐ Architecture and Construction
- ☐ Education and Training
- ☐ Information Technology
- ☐ Legal
- ☐ Manufacturing
- ☐ Retail
- ☐ None of the above

Do you have any experience in making hiring decisions (i.e. have you been responsible for hiring job candidates)?

- ☐ Yes
- ☐ No
- ☐ Rather not say

Have you ever been employed in any of the following roles?

- ☐ Writer
- ☐ Recruitment Consultant
- ☐ Financial Advisor
- ☐ Therapist
- ☐ Coder, Programmer
- ☐ Human Resources
- ☐ Event Management
- ☐ None of the above

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Today you will be asked to perform a task and answer a survey.

Please pay attention to the instructions and questions as your answers may affect how much you earn.

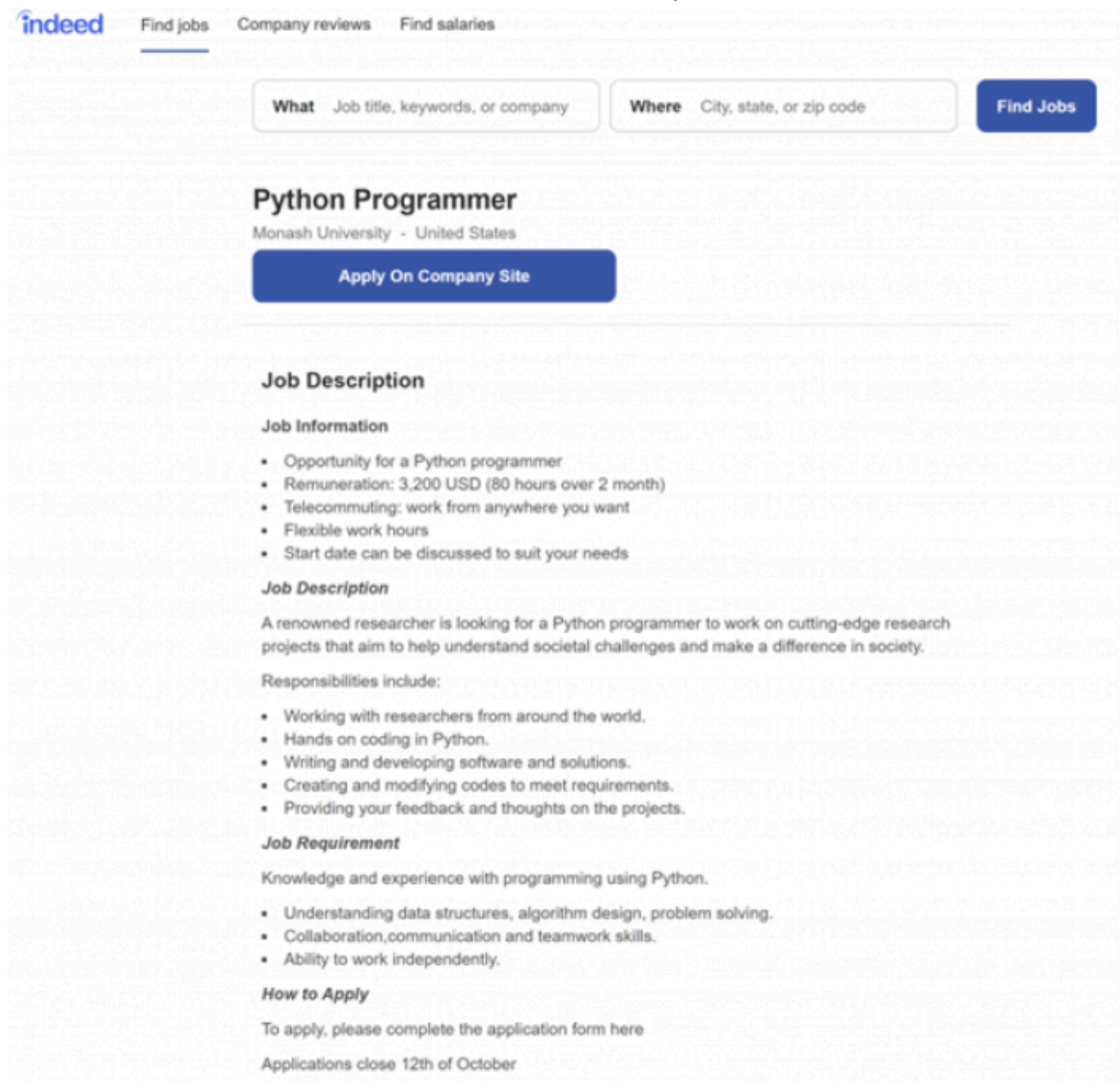
The survey consists of two parts

Part 1: Background and Instructions (approx. 2 min)

Part 2: Task (approx. 2 min)

Please read this page carefully. Failure to understand can affect how much you will earn.

Below is a picture of a real job advertisement used to hire two Python programmers. They were hired to work with university researchers.



The screenshot shows the top portion of an Indeed job listing. At the top, the Indeed logo is on the left, and navigation links for 'Find jobs', 'Company reviews', and 'Find salaries' are in the center. Below these are two search input fields: 'What' (Job title, keywords, or company) and 'Where' (City, state, or zip code), followed by a blue 'Find Jobs' button. The job title 'Python Programmer' is prominently displayed, followed by the employer 'Monash University - United States'. A blue button labeled 'Apply On Company Site' is positioned below the employer name. The 'Job Description' section follows, containing a 'Job Information' list of bullet points, a 'Job Description' paragraph, a 'Responsibilities include:' list, a 'Job Requirement' section with a paragraph and a list, and a 'How to Apply' section with a paragraph and a closing date.

indeed Find jobs Company reviews Find salaries

What Job title, keywords, or company Where City, state, or zip code Find Jobs

Python Programmer
Monash University - United States

Apply On Company Site

Job Description

Job Information

- Opportunity for a Python programmer
- Remuneration: 3,200 USD (80 hours over 2 month)
- Telecommuting: work from anywhere you want
- Flexible work hours
- Start date can be discussed to suit your needs

Job Description

A renowned researcher is looking for a Python programmer to work on cutting-edge research projects that aim to help understand societal challenges and make a difference in society.

Responsibilities include:

- Working with researchers from around the world.
- Hands on coding in Python.
- Writing and developing software and solutions.
- Creating and modifying codes to meet requirements.
- Providing your feedback and thoughts on the projects.

Job Requirement

Knowledge and experience with programming using Python.

- Understanding data structures, algorithm design, problem solving.
- Collaboration, communication and teamwork skills.
- Ability to work independently.

How to Apply

To apply, please complete the application form here

Applications close 12th of October

The job was posted twice on multiple platforms, including Indeed and Dice, for applicants across the United States.

Please answer the following questions.

What job is being advertised?

- ☐ Accountant
- ☐ Programmer
- ☐ Copywriter
- ☐ Web Designer

Where are the applicants recruited from?

- ☐ All over the world
- ☐ United States
- ☐ California
- ☐ Canada

You answered incorrectly.

The screenshot shows the Indeed job listing interface. At the top, there are navigation links: "indeed", "Find jobs", "Company reviews", and "Find salaries". Below these are search filters: "What" (Job title, keywords, or company), "Where" (City, state, or zip code), and a "Find Jobs" button. The job listing is for a "Python Programmer" at "Monash University - United States". There is a blue button labeled "Apply On Company Site". The "Job Description" section includes "Job Information" (Opportunity for a Python programmer, Remuneration: 3,200 USD (80 hours over 2 month), Telecommuting: work from anywhere you want, Flexible work hours, Start date can be discussed to suit your needs), "Job Description" (A renowned researcher is looking for a Python programmer to work on cutting-edge research projects that aim to help understand societal challenges and make a difference in society. Responsibilities include: Working with researchers from around the world, Hands on coding in Python, Writing and developing software and solutions, Creating and modifying codes to meet requirements, Providing your feedback and thoughts on the projects.), "Job Requirement" (Knowledge and experience with programming using Python, Understanding data structures, algorithm design, problem solving, Collaboration, communication and teamwork skills, Ability to work independently.), and "How to Apply" (To apply, please complete the application form here, Applications close 12th of October).

What job is being advertised?

- ☐ Accountant
- ☐ Programmer
- ☐ Copywriter
- ☐ Web Designer

Your response was incorrect. Remember applicants were recruited from the United States

Where are the applicants recruited from?

- ☐ All over the world
- ☐ United States
- ☐ California
- ☐ Canada

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Please read this page carefully. Failure to understand it can affect how much you will earn.

Eligible applicants were invited to take a Python Programming test provided that they:

- Live in the United States
- Know how to program in Python

Task

You will be shown up to 10 first names of several real applicants who completed the

test for our Python programming job. Your task is to guess the ethnicity of the applicant.

Bonus payment

We will randomly select one name out of the names that you have been shown.

For the selected name, you will receive an additional \$1.5 if your guess the same as the guess of the majority of Prolific participants who were shown that name in this study.

All participants in this study work in the IT sector, have hiring experience and reside in the United States.

Please answer the following question to test understanding.

If a name is chosen for payment, I will receive \$1.5 if:

- ☐ My guess is the same as the actual ethnicity of the candidate
- ☐ My guess is the same as the ethnicity guessed by the majority of Prolific participants with no hiring experience
- ☐ My guess is the same as the ethnicity guessed by the majority of Prolific participants in the IT sector with hiring experience

Your answer was incorrect. Please read this information again and retry.

Bonus payment

We will randomly select one name out of the names that you have been shown.

For the selected name, you will receive an additional \$1.5 if your guess the same as the guess of the majority of Prolific participants who were shown that name in this study.

All participants in this study work in the IT sector, have hiring experience and reside in the United States.

If a name is chosen for payment, I will receive \$1.5 if:

- ☐ My guess is the same as the actual ethnicity of the candidate
- ☐ My guess is the same as the ethnicity guessed by the majority of Prolific participants with no hiring experience
- ☐ My guess is the same as the ethnicity guessed by the majority of Prolific participants in the IT sector with hiring experience

NameBlock1

Remember, if this question is randomly chosen for payment, you will receive a bonus payment of \$1.50 if your guess for this name is the same as that of the majority of the respondents.

Please guess the ethnicity of the following name:

Paras

This person is most likely to be

- ☐ White
- ☐ Hispanic
- ☐ African American or Black

- ☐ East or Southeast Asian (e.g. Chinese, Japanese, Korean)
- ☐ South Asian (e.g. Indian)
- ☐ Middle Eastern or North African
- ☐ Alaskan or Native American
- ☐ Native Hawaiian or Pacific Islanders

Remember, if this question is randomly chosen for payment, you will receive a bonus payment of \$1.50 if your guess for this name is the same as that of the majority of the respondents.

Please guess the ethnicity of the following name:

Kordell

This person is most likely to be

- ☐ White
- ☐ Hispanic
- ☐ African American or Black
- ☐ East or Southeast Asian (e.g. Chinese, Japanese, Korean)
- ☐ South Asian (e.g. Indian)
- ☐ Middle Eastern or North African
- ☐ Alaskan or Native American
- ☐ Native Hawaiian or Pacific Islanders

Remember, if this question is randomly chosen for payment, you will receive a bonus payment of \$1.50 if your guess for this name is the same as that of the majority of the respondents.

Please guess the ethnicity of the following name:

Abigail

This person is most likely to be

- ☐ White
- ☐ Hispanic
- ☐ African American or Black
- ☐ East or Southeast Asian (e.g. Chinese, Japanese, Korean)
- ☐ South Asian (e.g. Indian)
- ☐ Middle Eastern or North African
- ☐ Alaskan or Native American
- ☐ Native Hawaiian or Pacific Islanders

Remember, if this question is randomly chosen for payment, you will receive a bonus payment of \$1.50 if your guess for this name is the same as that of the majority of the respondents.

Please guess the ethnicity of the following name:

Aasim

This person is most likely to be

- ☐ White
- ☐ Hispanic
- ☐ African American or Black
- ☐ East or Southeast Asian (e.g. Chinese, Japanese, Korean)
- ☐ South Asian (e.g. Indian)

- ☐ Middle Eastern or North African
- ☐ Alaskan or Native American
- ☐ Native Hawaiian or Pacific Islanders

Remember, if this question is randomly chosen for payment, you will receive a bonus payment of \$1.50 if your guess for this name is the same as that of the majority of the respondents.

Please guess the ethnicity of the following name:

Taylor

This person is most likely to be

- ☐ White
- ☐ Hispanic
- ☐ African American or Black
- ☐ East or Southeast Asian (e.g. Chinese, Japanese, Korean)
- ☐ South Asian (e.g. Indian)
- ☐ Middle Eastern or North African
- ☐ Alaskan or Native American
- ☐ Native Hawaiian or Pacific Islanders

Remember, if this question is randomly chosen for payment, you will receive a bonus payment of \$1.50 if your guess for this name is the same as that of the majority of the respondents.

Please guess the ethnicity of the following name:

Aaron

This person is most likely to be

- ☐ White
- ☐ Hispanic
- ☐ African American or Black
- ☐ East or Southeast Asian (e.g. Chinese, Japanese, Korean)
- ☐ South Asian (e.g. Indian)
- ☐ Middle Eastern or North African
- ☐ Alaskan or Native American
- ☐ Native Hawaiian or Pacific Islanders

Remember, if this question is randomly chosen for payment, you will receive a bonus payment of \$1.50 if your guess for this name is the same as that of the majority of the respondents.

Please guess the ethnicity of the following name:

Peter

This person is most likely to be

- ☐ White
- ☐ Hispanic
- ☐ African American or Black
- ☐ East or Southeast Asian (e.g. Chinese, Japanese, Korean)
- ☐ South Asian (e.g. Indian)
- ☐ Middle Eastern or North African

- ☐ Alaskan or Native American
- ☐ Native Hawaiian or Pacific Islanders

Remember, if this question is randomly chosen for payment, you will receive a bonus payment of \$1.50 if your guess for this name is the same as that of the majority of the respondents.

Please guess the ethnicity of the following name:

Edward

This person is most likely to be

- ☐ White
- ☐ Hispanic
- ☐ African American or Black
- ☐ East or Southeast Asian (e.g. Chinese, Japanese, Korean)
- ☐ South Asian (e.g. Indian)
- ☐ Middle Eastern or North African
- ☐ Alaskan or Native American
- ☐ Native Hawaiian or Pacific Islanders

Remember, if this question is randomly chosen for payment, you will receive a bonus payment of \$1.50 if your guess for this name is the same as that of the majority of the respondents.

Please guess the ethnicity of the following name:

Ahmed

This person is most likely to be

- ☐ White
- ☐ Hispanic
- ☐ African American or Black
- ☐ East or Southeast Asian (e.g. Chinese, Japanese, Korean)
- ☐ South Asian (e.g. Indian)
- ☐ Middle Eastern or North African
- ☐ Alaskan or Native American
- ☐ Native Hawaiian or Pacific Islanders

Remember, if this question is randomly chosen for payment, you will receive a bonus payment of \$1.50 if your guess for this name is the same as that of the majority of the respondents.

Please guess the ethnicity of the following name:

Muizudeen

This person is most likely to be

- ☐ White
- ☐ Hispanic
- ☐ African American or Black
- ☐ East or Southeast Asian (e.g. Chinese, Japanese, Korean)
- ☐ South Asian (e.g. Indian)
- ☐ Middle Eastern or North African
- ☐ Alaskan or Native American
- ☐ Native Hawaiian or Pacific Islanders

Demographics Survey

Thank you for answering the prior questions. You will now be asked a number of demographic questions.

To proceed please select strongly disagree

- ☐ Strongly Agree
- ☐ Agree
- ☐ Somewhat agree
- ☐ Neither agree nor disagree
- ☐ Somewhat disagree
- ☐ Disagree
- ☐ Strongly disagree

What is your gender?

- ☐ Male
- ☐ Female
- ☐ Prefer not to say
- ☐ Enter below

What is your year of birth?

What is the highest level of education that you have **completed**?

- ☐ Some High School Without Graduation
- ☐ High School Graduate
- ☐ Some College
- ☐ Graduated 2-year College
- ☐ Graduated 4-year College
- ☐ Post Graduate

Are you currently employed

- ☐ Yes - Full Time
- ☐ Yes - Part Time
- ☐ No

What is your occupation/profession?

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Thank you for participating in the survey

Your validation code is 15795

Bonus payment will be made in 2-3 working days

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