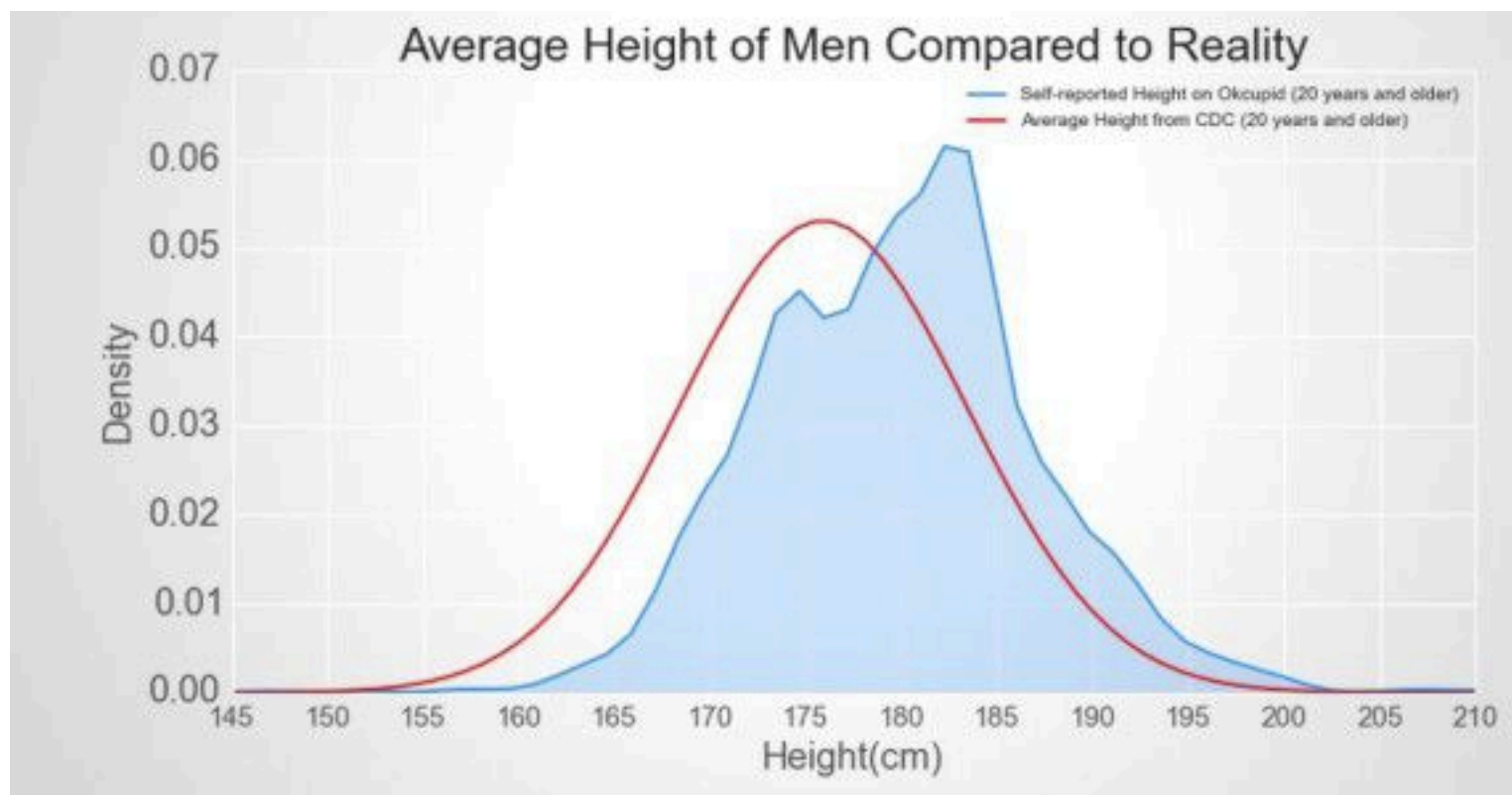# Week 1 Recitation

Ashwin Bhola and Shreyas Chandrakaladharan

CDS, NYU

Sept 4th , 2019

Data Science

1. What do you think is the reason for the shift between the two curves?

2. How do you interpret the kink at around 176 cm in the data from OkCupid?

Programming: List comprehension and slicing

1. Write a function that return a list of n numbers such that the element at index i is $(i + 1)^2$. If $n = 5$, your

   function should output $[1, 4, 9, 16, 25]$

2. How do you do the following in Python in a single line of code:

   1. Change element at index i

   2. Select elements from index i to j (inclusive) in a list

   3. Select last k elements from a list

   4. Select every alternate element in a list

   5. Select elements from a list greater than 5

   6. Sum all elements of a list

   7. Reverse a list

Programming: Strings and lists

1. What's the output of the following code:

```python
s = 'Hello'
print(s[1])
```

2. What's the output of the following code:

```python
s = 'Hello'
s[1] = 't'
print(s)
```

3. How can you check if a string is a palindrome in just one line?

4. Write a function to flatten nested lists. Try to do it without using any loops. (Hint: Recursion)