

A hand is shown interacting with a tablet. The tablet screen displays a complex, colorful visualization that appears to be a network or a set of data points connected by lines, with colors ranging from blue to orange. The background is dark, and the lighting is focused on the tablet and the hand. The overall aesthetic is high-tech and futuristic.

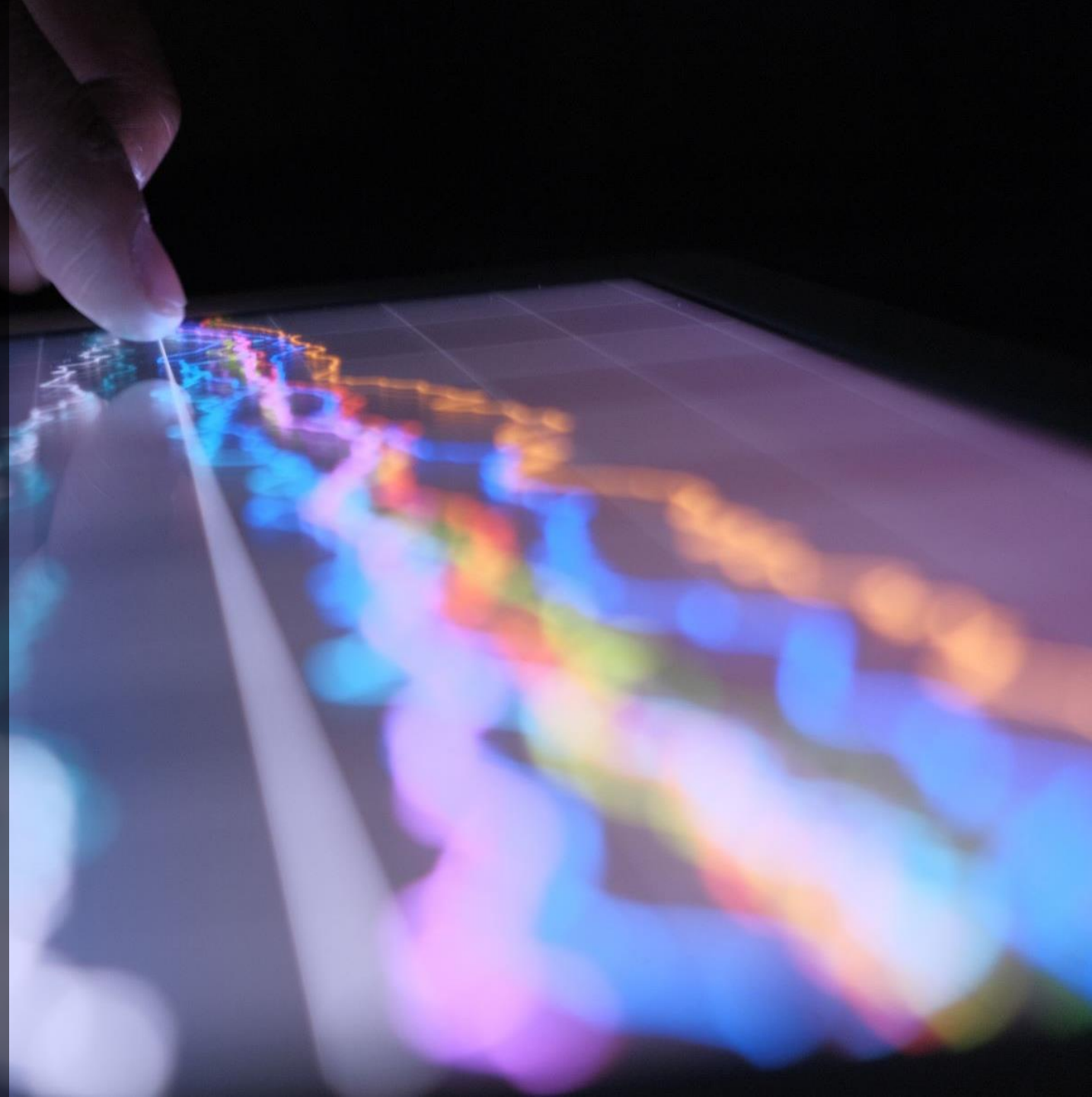
# Technology Usage and Income


- Hayden Muscha
- Kripanjali Dhungana
- Nathaniel Van Schyndel
- Zheding Zhao



# Exploring the Data Set

- US Census Data
- Company Summary
- Technology Characteristics of Business






# What can be done with the data?

- Measure of levels of usage of Technologies across multiple employment sectors
- Ranking of Industries based on how they use Technology
- Assessment of pay for these sectors



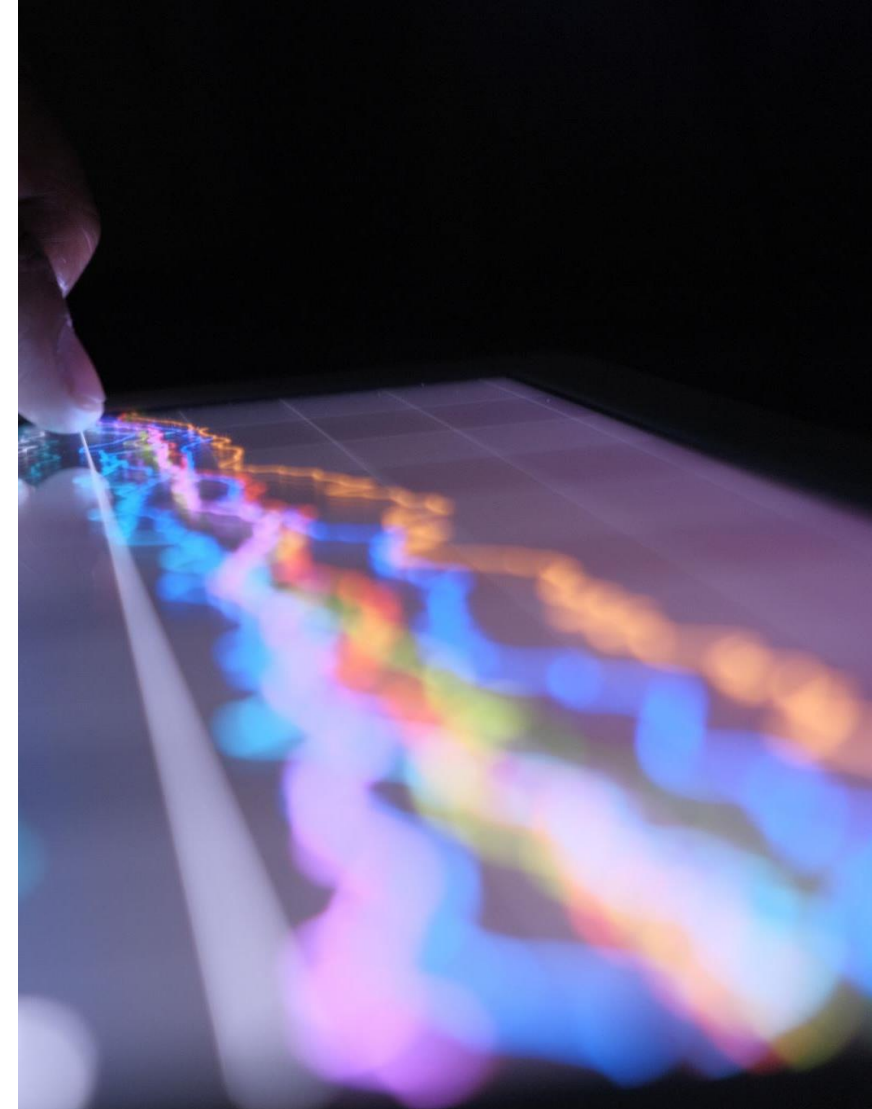
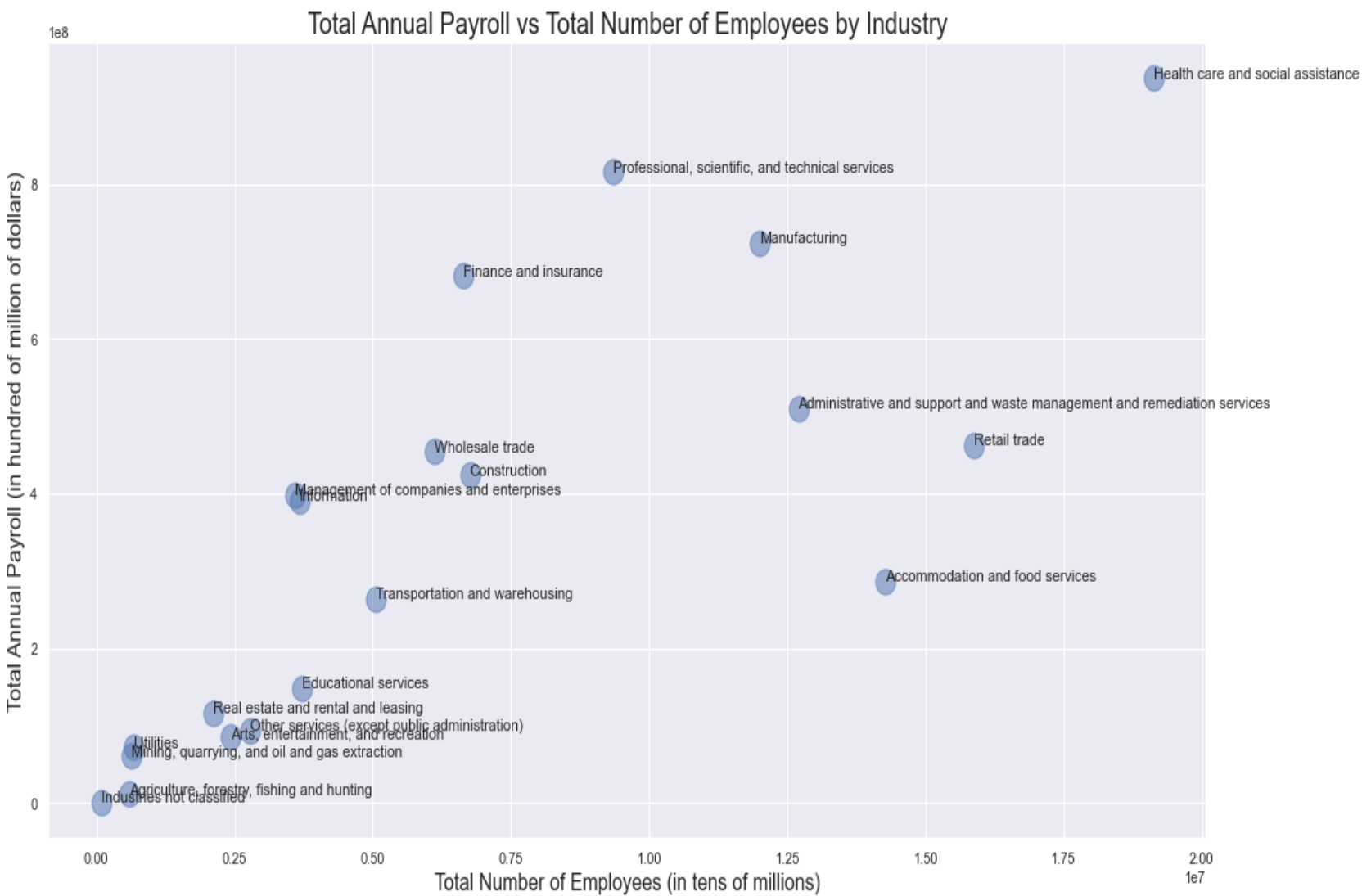
# ETL

- Import relevant packages and call Web API to get census data
- Converted the census data into Pandas data frames.
- Merge the two data frames on NAICS2017\_LABEL
- Clean the data:
  - Removed extraneous columns
  - Renamed Columns with functional labels
- Transform data into usable values
- Derive desired columns from existing columns

A hand is pointing at a glowing digital map on a tablet screen. The map is colorful and shows various geographical features. The background is dark, and the overall scene is dimly lit, with the light from the screen illuminating the hand and the map.

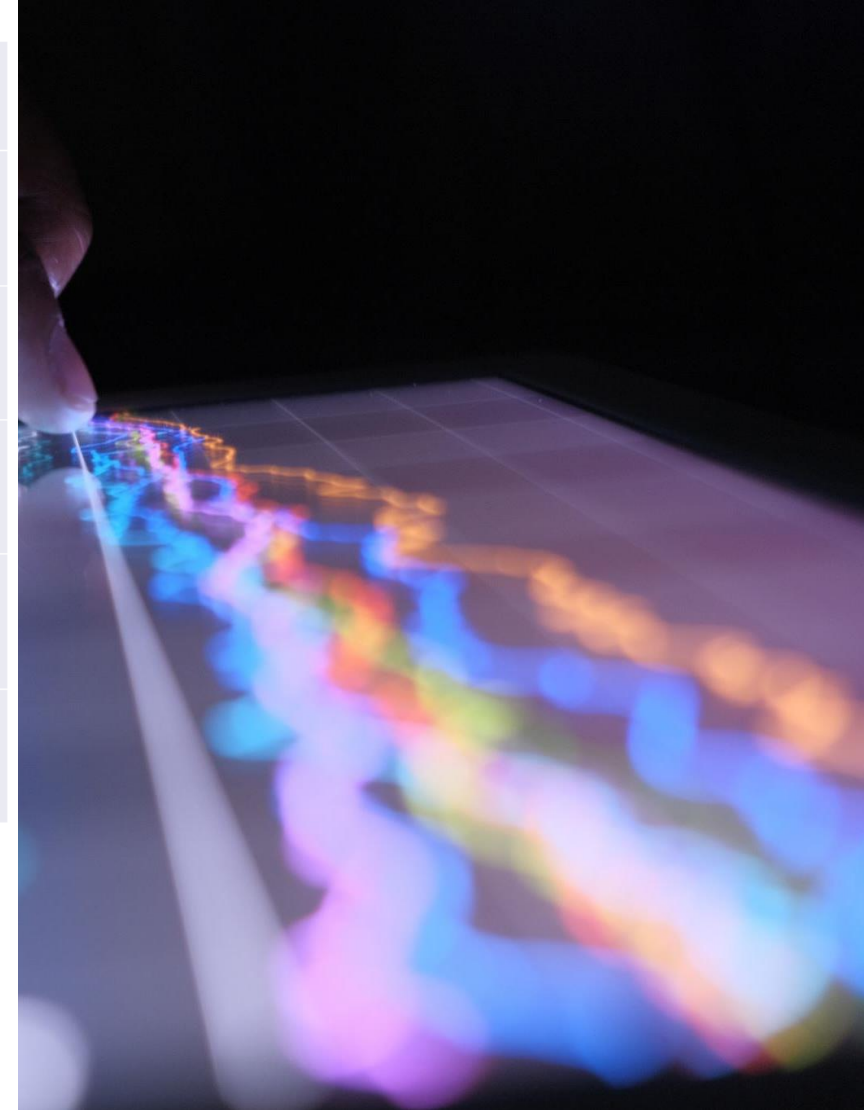
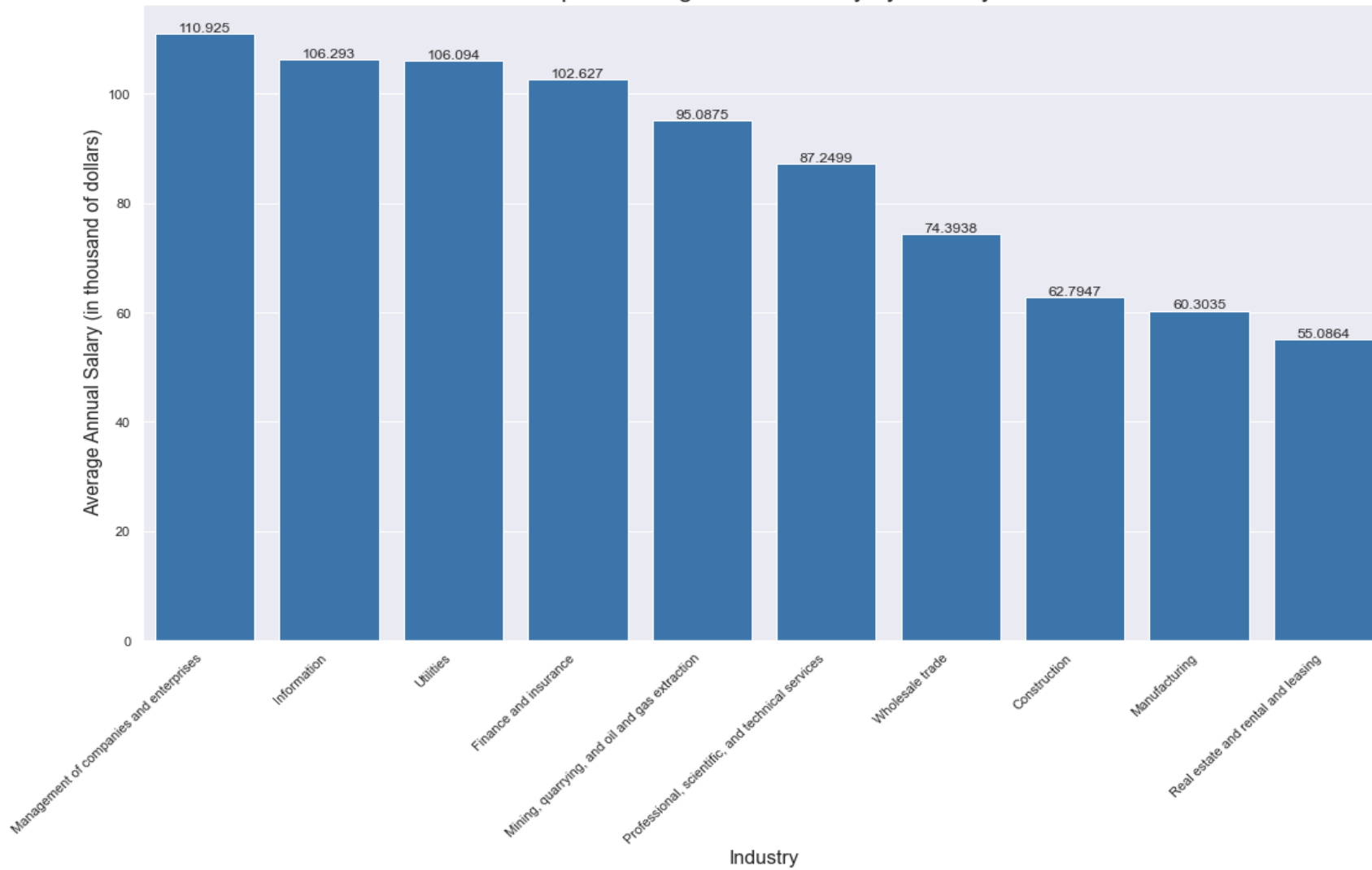
# What did we want to know?

- Which industries use these technologies the most?
- Which industries are testing these ideas the most?
- Which industries use these technologies the least?
- Does pay go up when these technologies are being implemented?
- Has the implementation of AI and Cloud Technologies Increased worker pay?



# Average Payroll by Industry Employees

Top 10 Average Annual Salary by Industry



# Average Annual Salary by Industry Employees

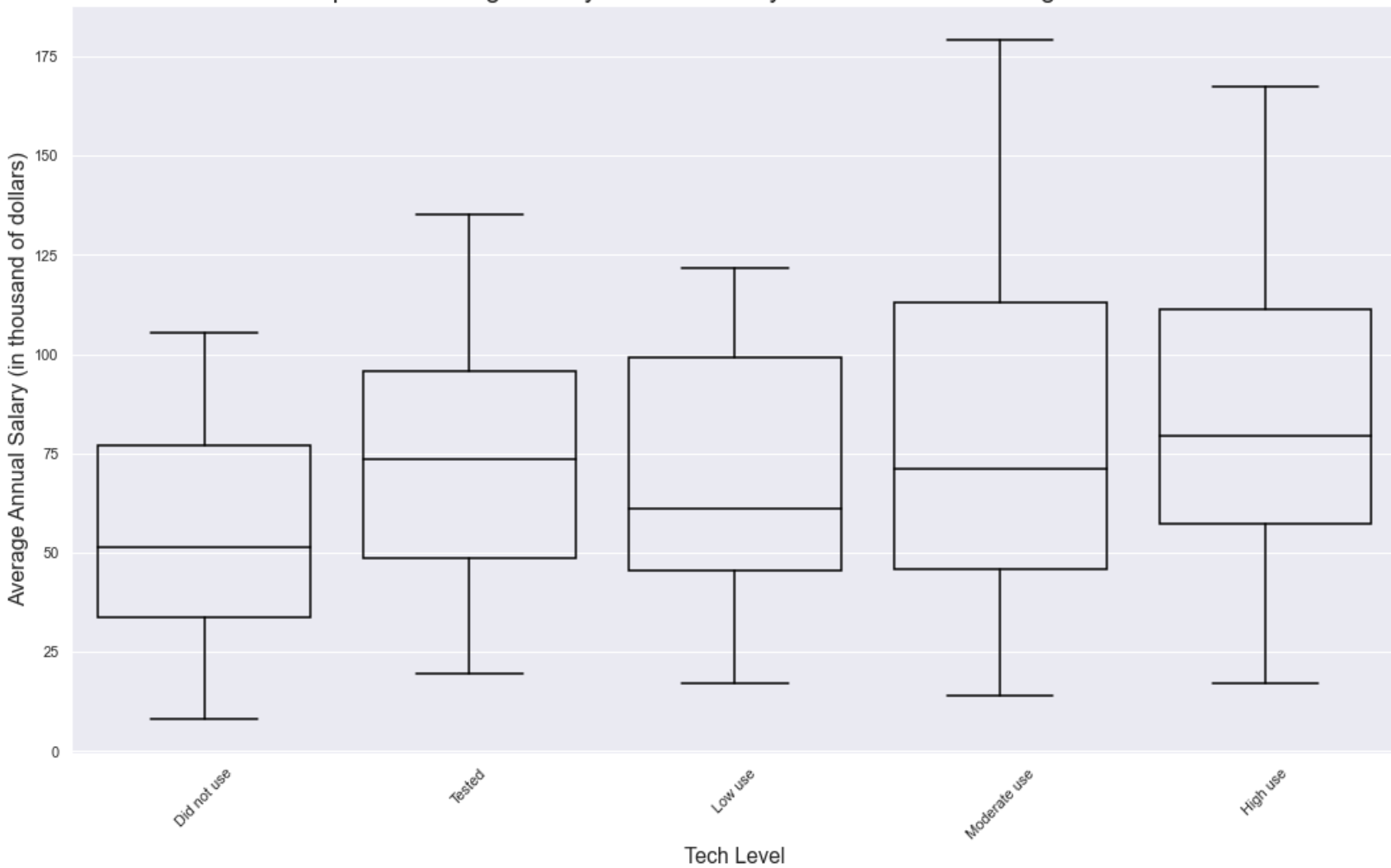
A hand is pointing at a world map displayed on a tablet screen. The map is color-coded, with various regions in different colors. The background is dark, and the lighting is focused on the hand and the screen.

# Artificial Intelligence

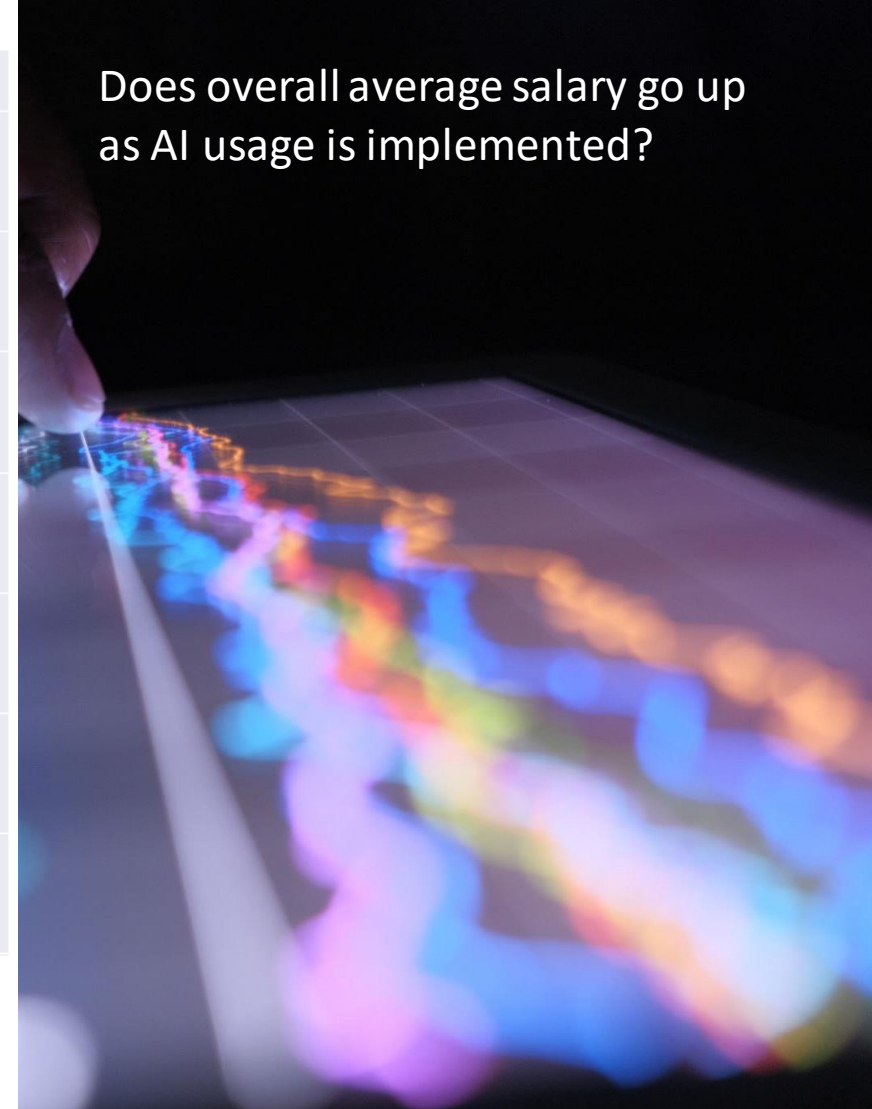
- Which industries use these technologies the least?
- Which industries are testing these ideas the most?
- Which industries use these technologies the most?
- Does salary go up when these technologies are being implemented?



Boxplot on Average Salary of industries by level of Artificial Intelligence Used

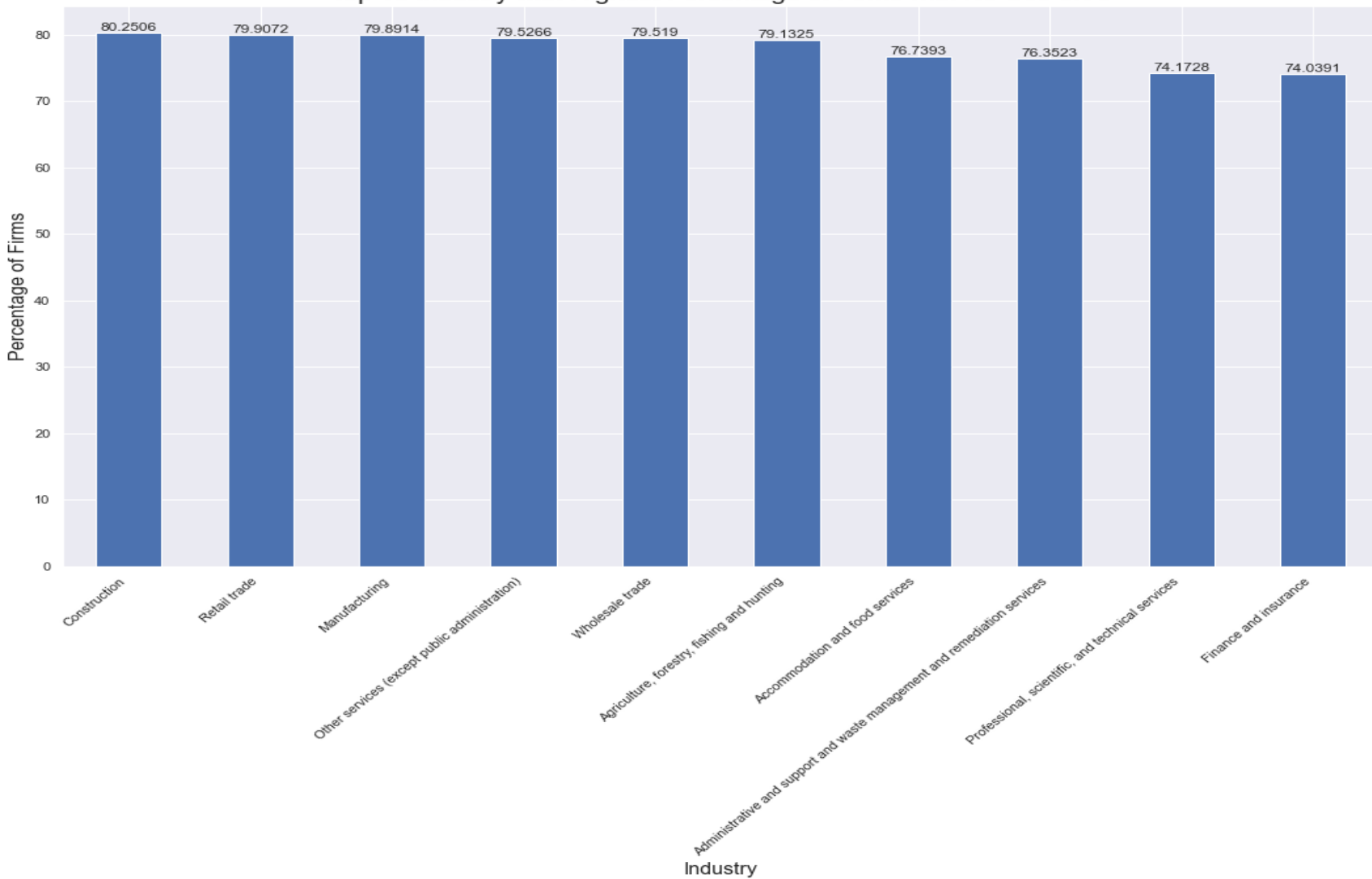


Does overall average salary go up as AI usage is implemented?

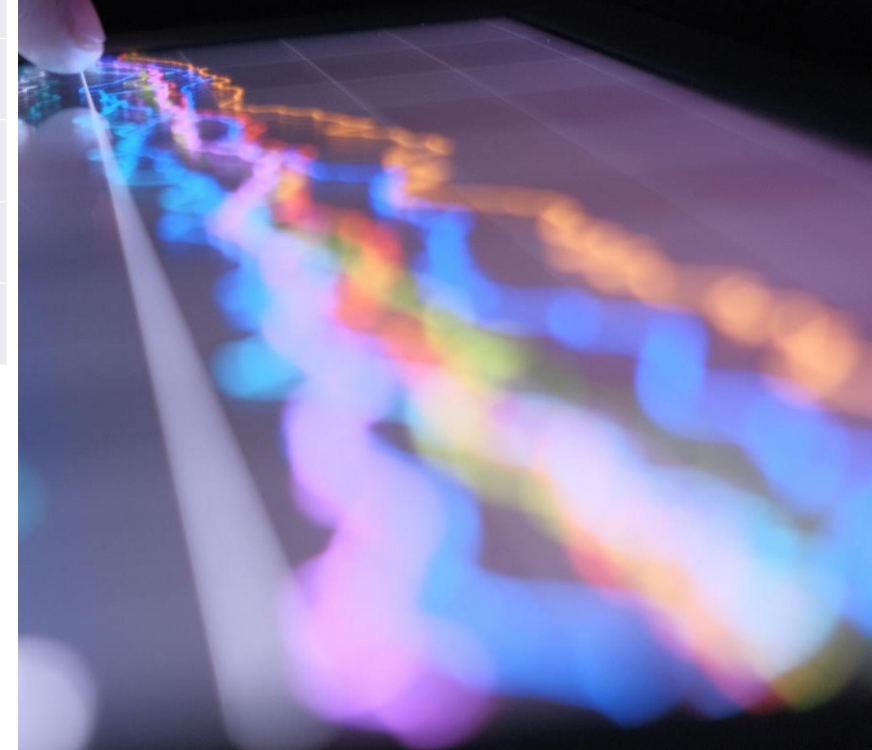


# Artificial Intelligence Industry Usage

Top 10 Industry with Highest Percentage of Firms with No Use of AI

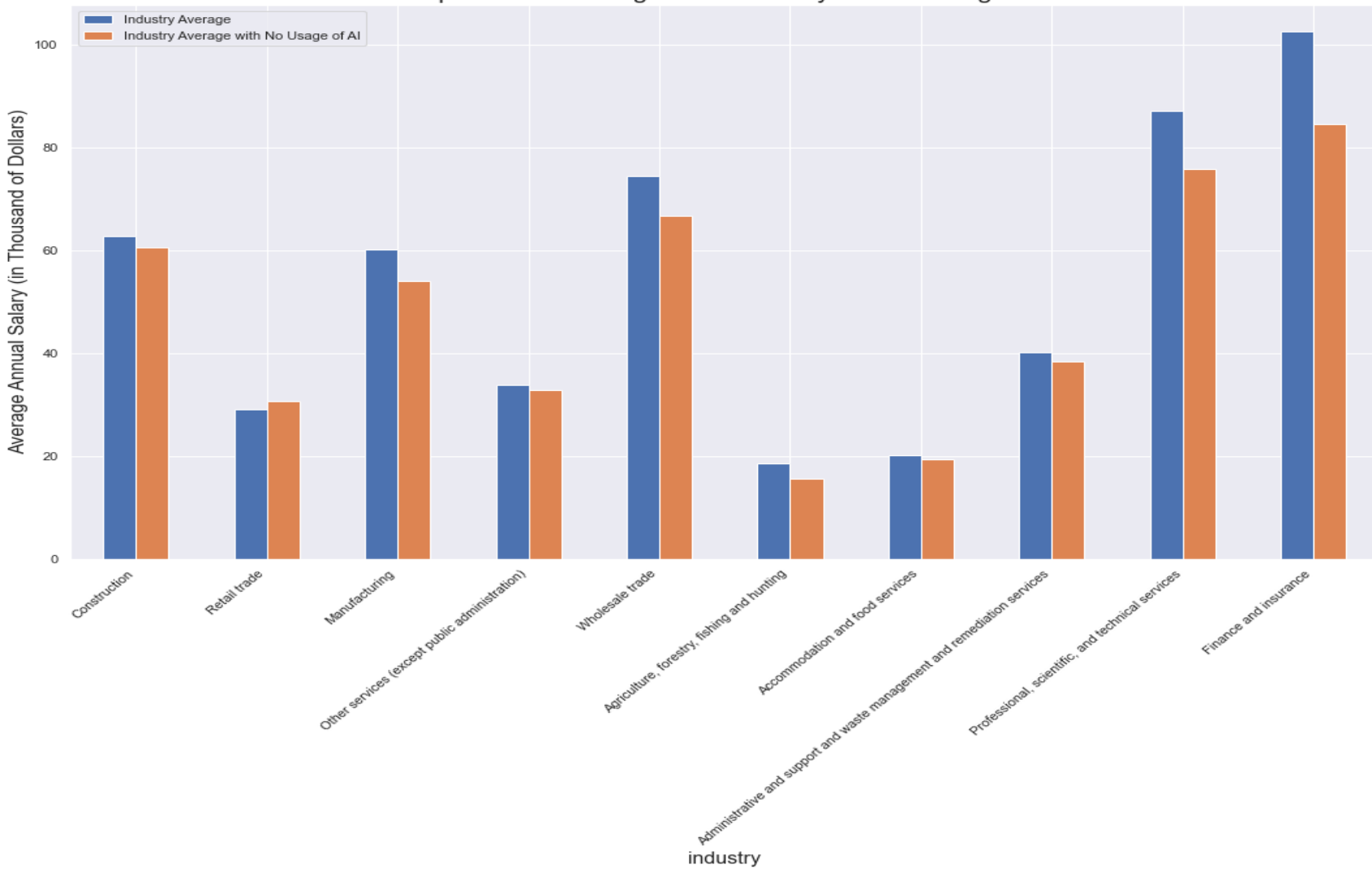


When it comes to industries not implementing AI, “Blue Collar” jobs appear to be the most likely to not implement AI solutions.



# Artificial Intelligence Industry Usage

Comparison on Average Annual Salary with No Usage of AI

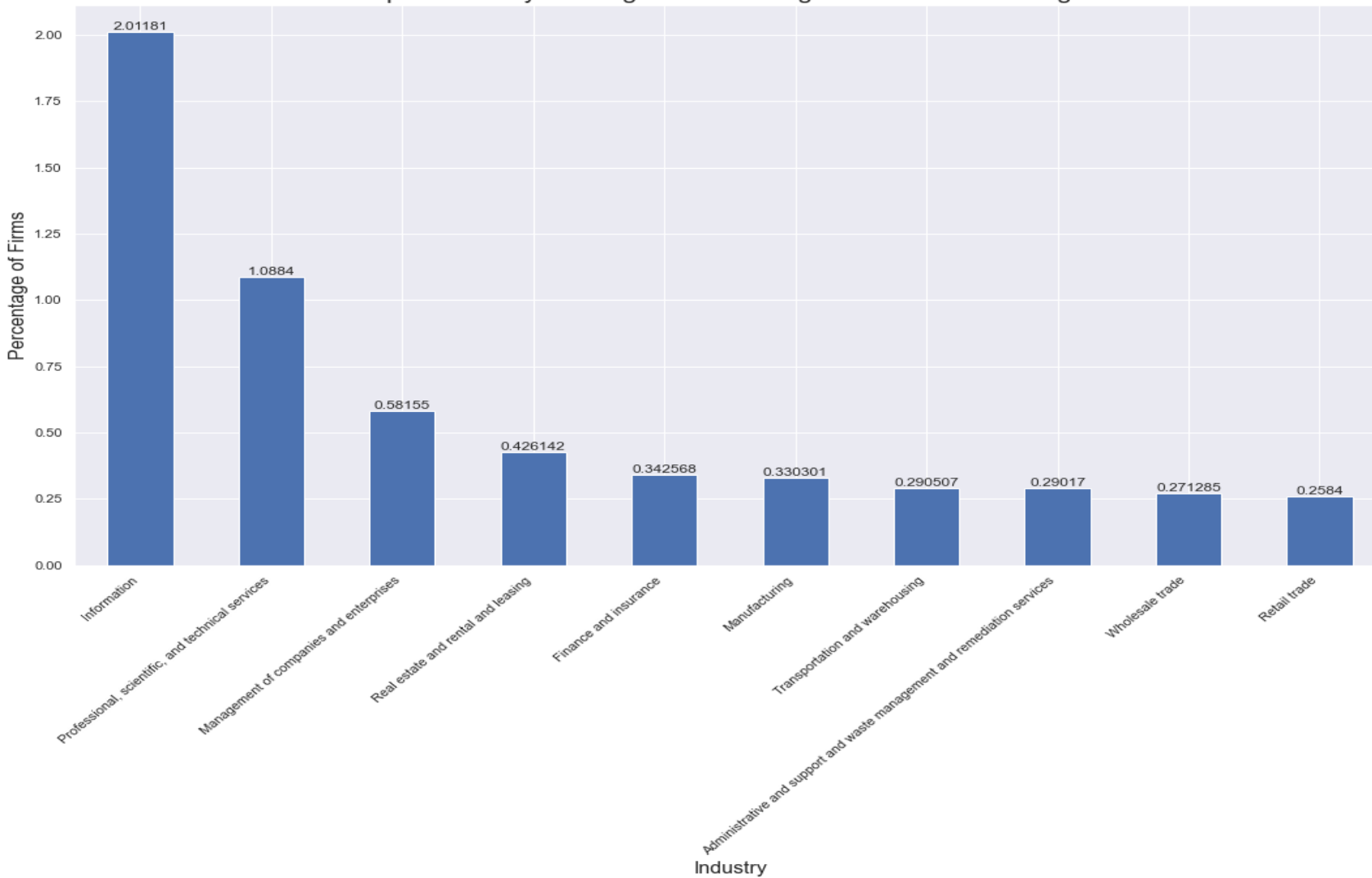


How does not using AI affect average salary in these industries?

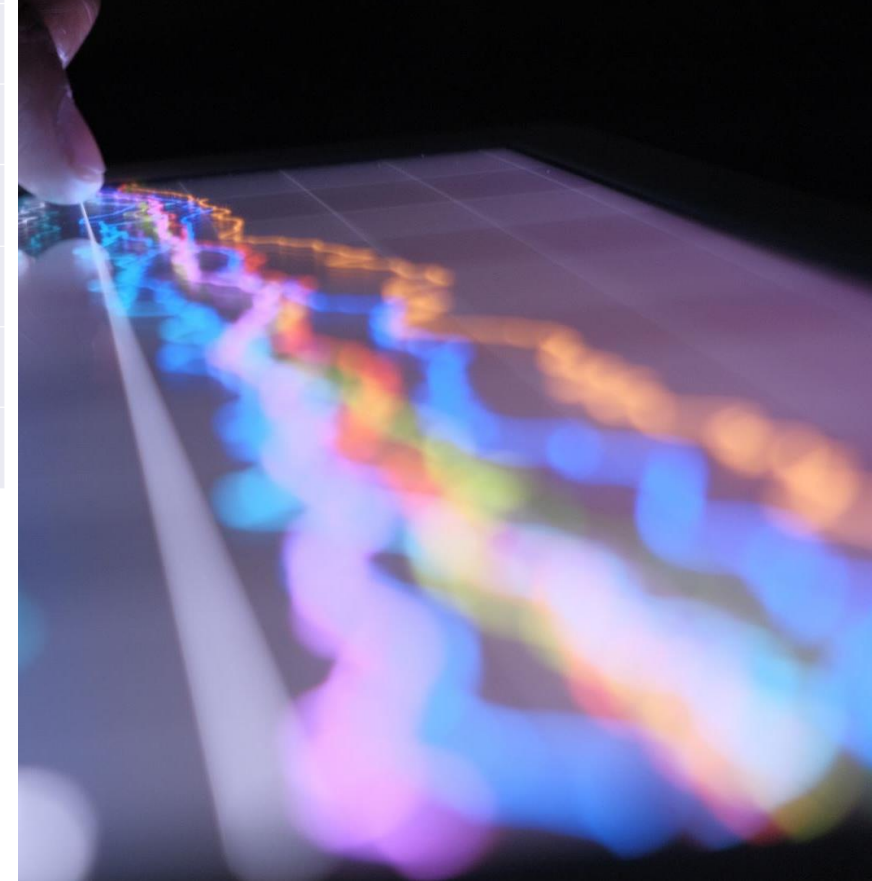


# Artificial Intelligence Industry Usage

Top 10 Industry with Highest Percentage of Firms with Testing AI

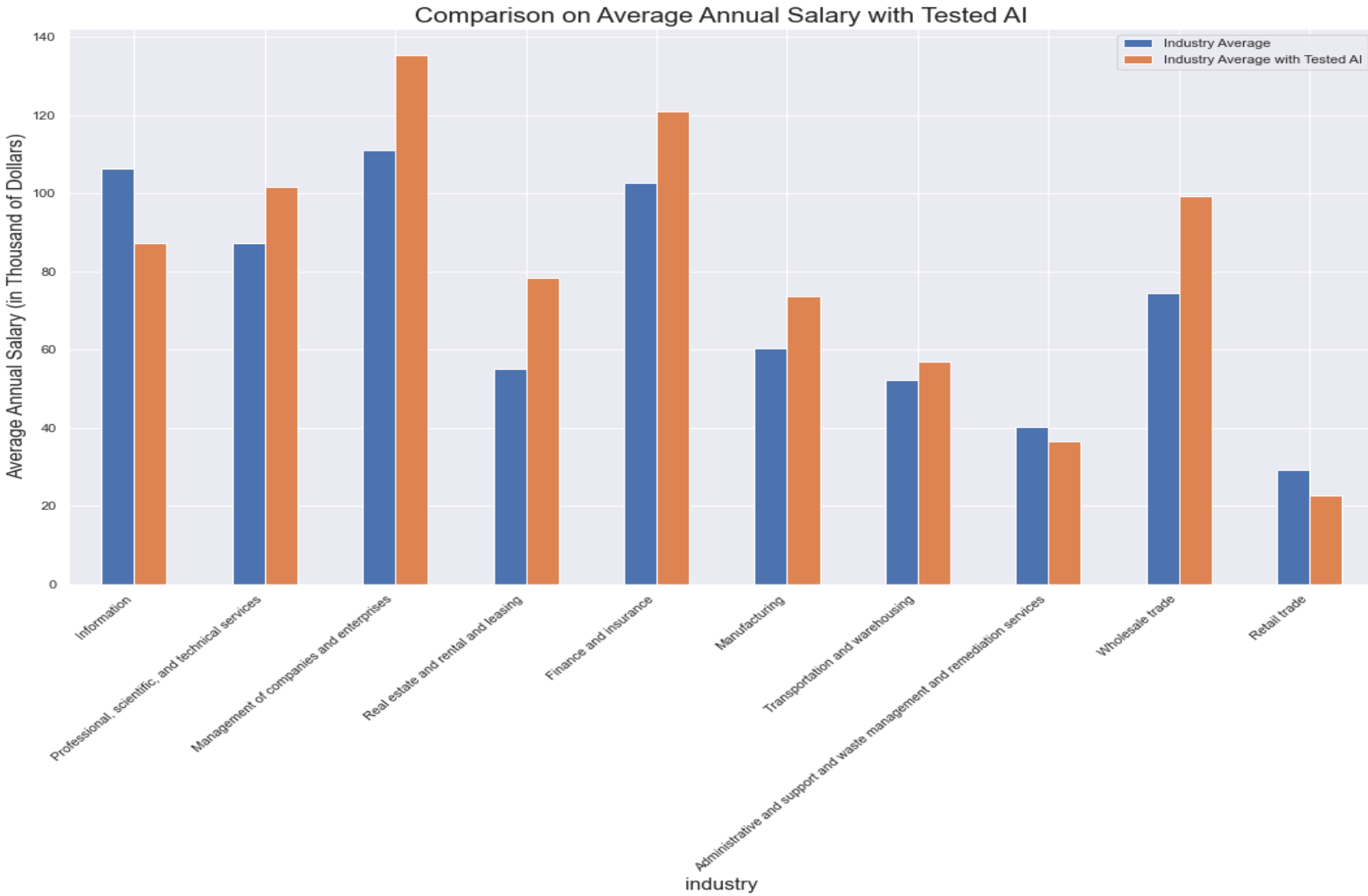


The top 3 Industries with a High Level of AI were also in the top 5 when it came to testing AI

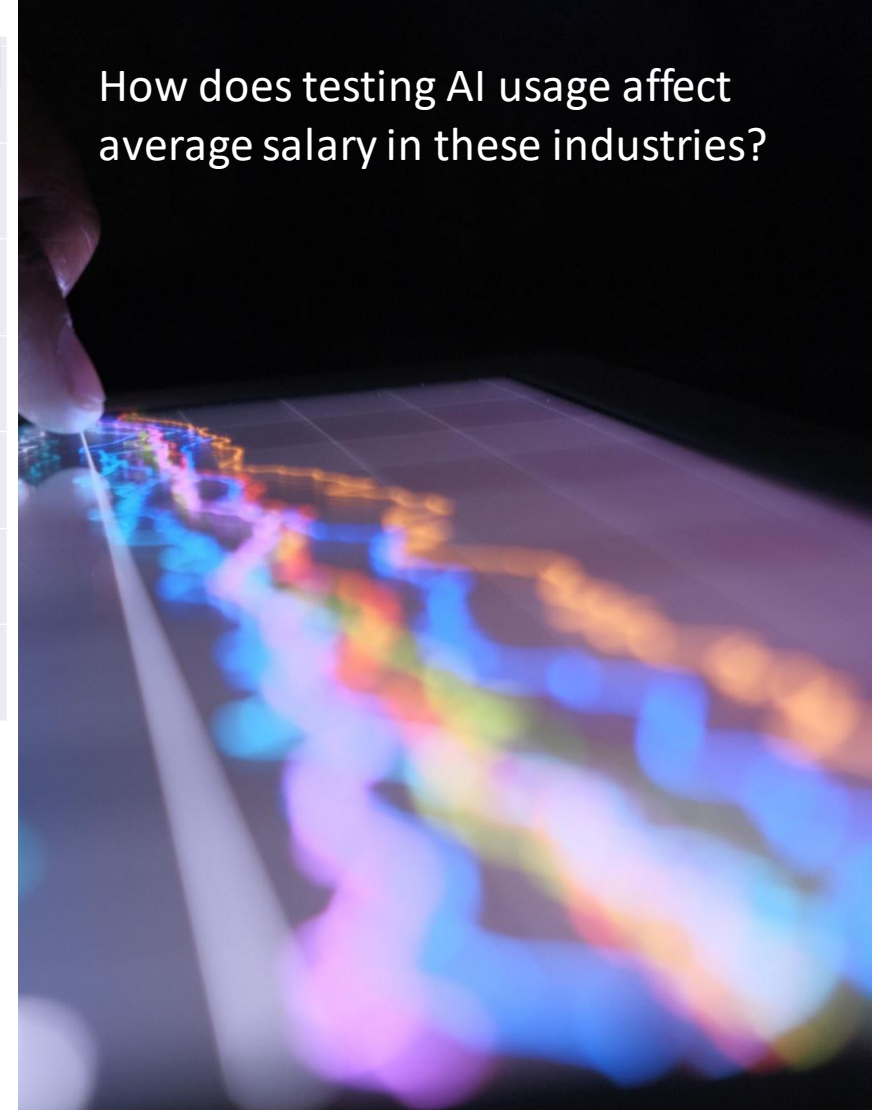


# Artificial Intelligence Industry Usage



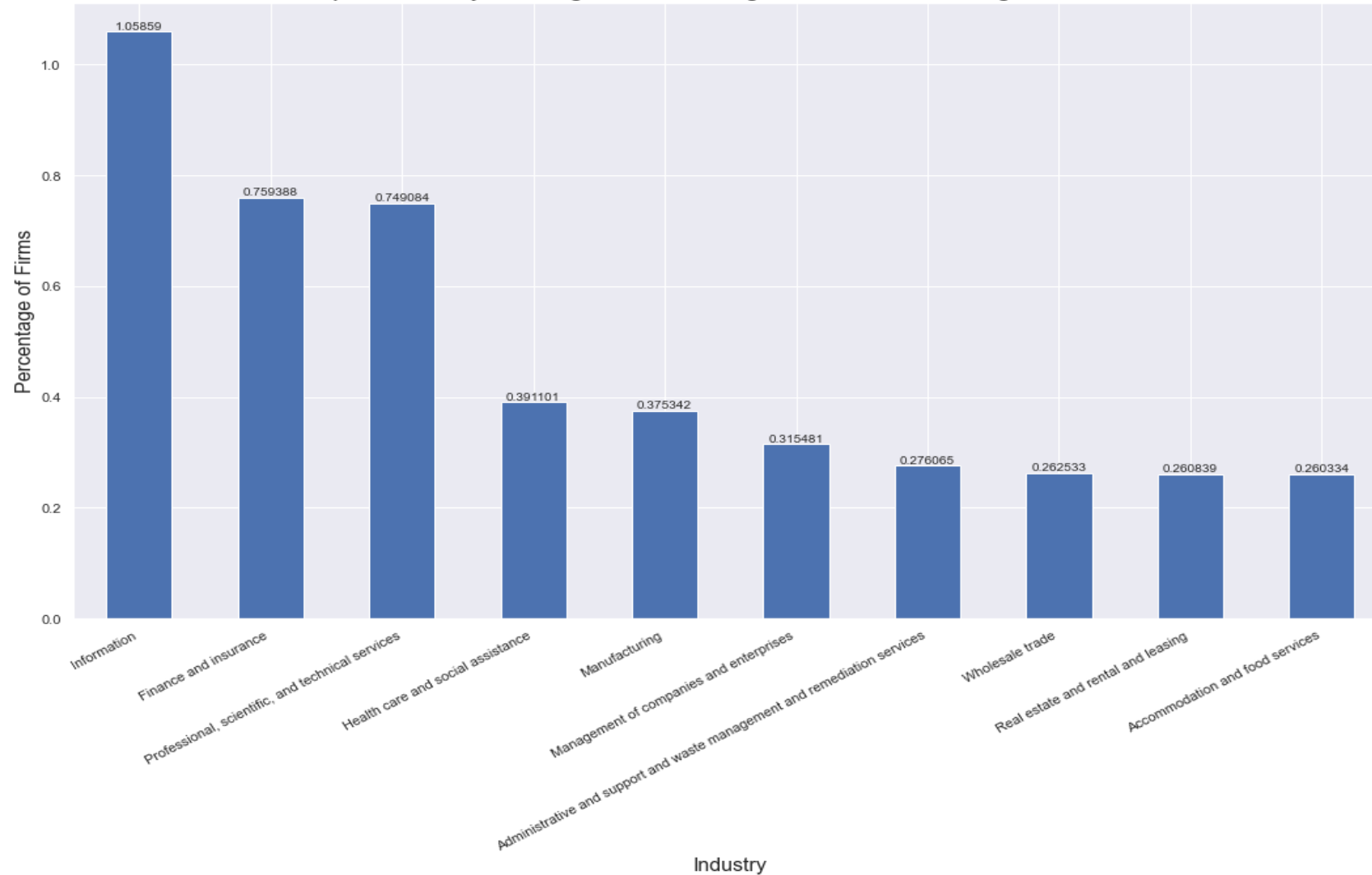


How does testing AI usage affect average salary in these industries?



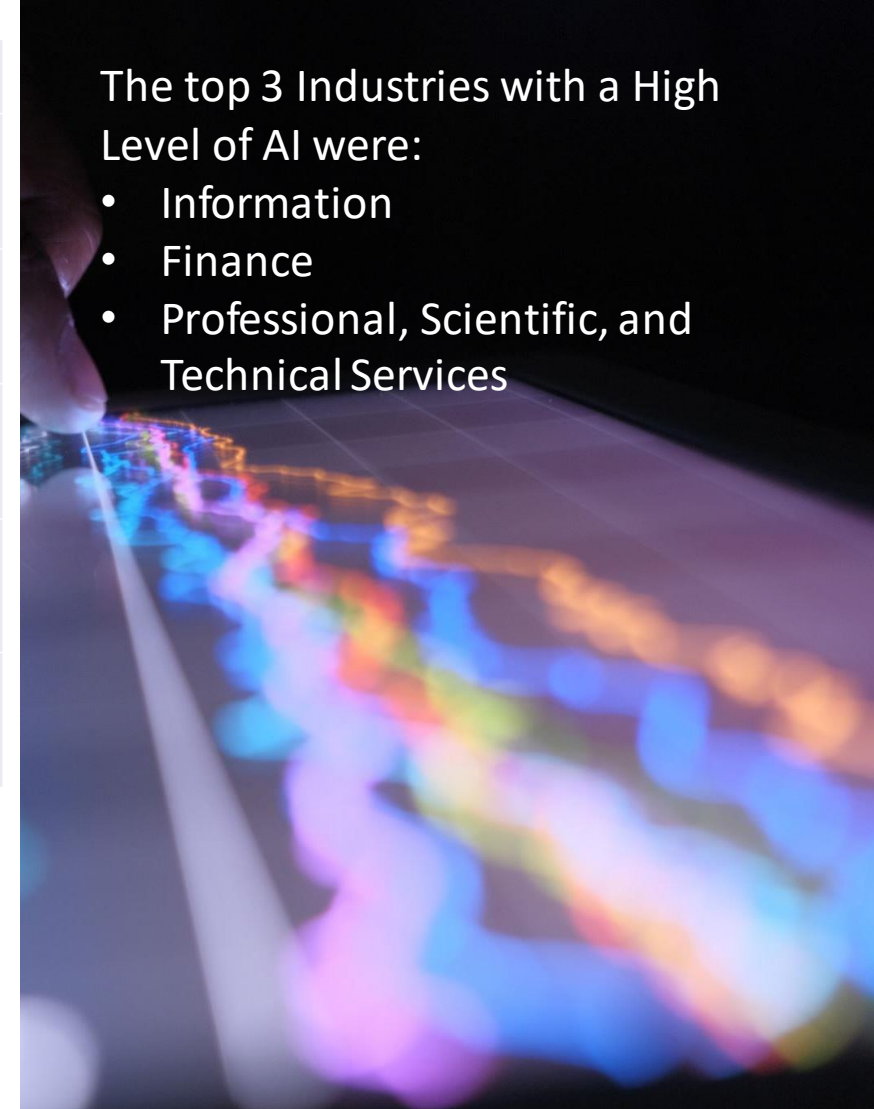
# Artificial Intelligence Industry Usage

Top 10 Industry with Highest Percentage of Firms Uses A High Level of AI



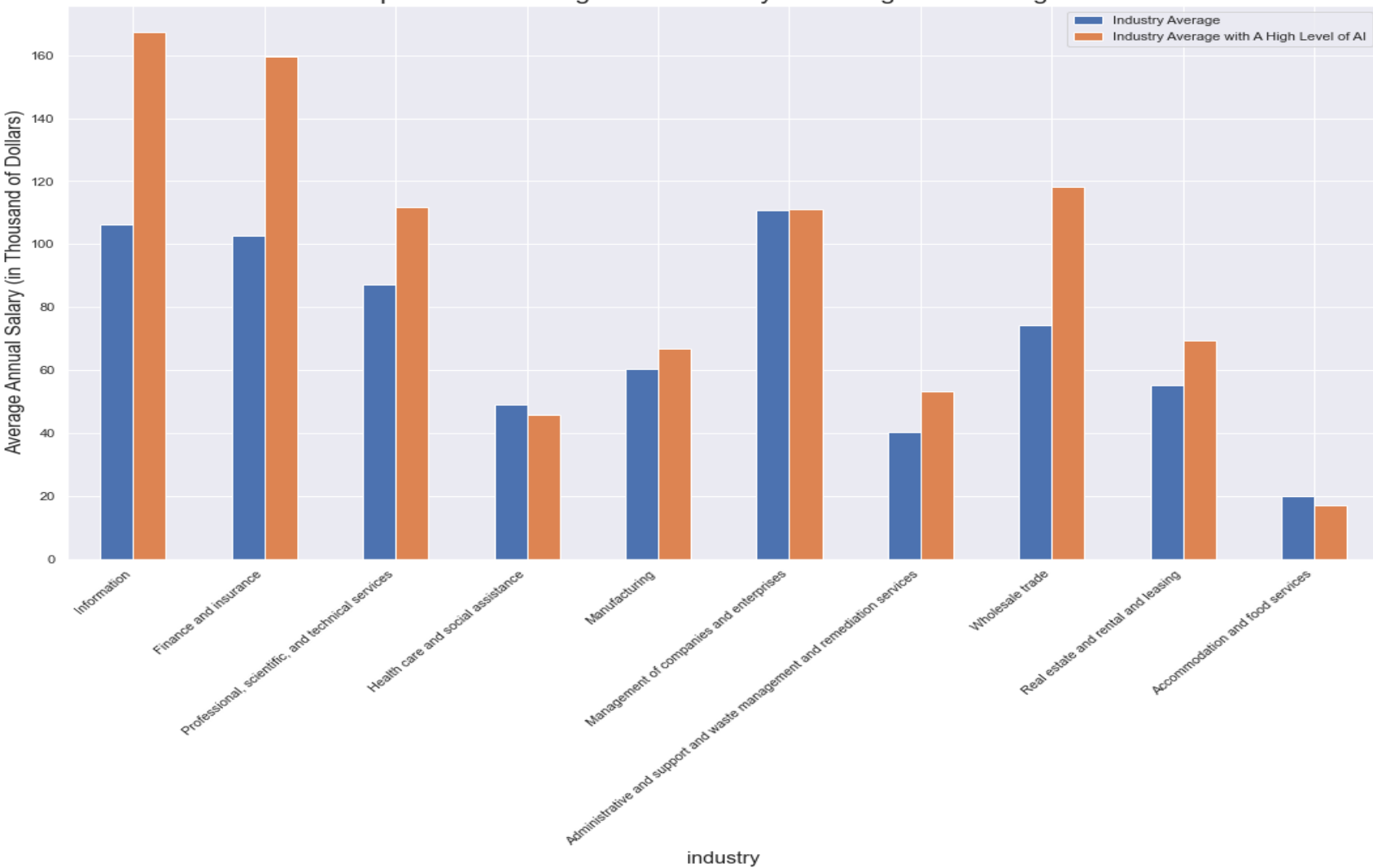
The top 3 Industries with a High Level of AI were:

- Information
- Finance
- Professional, Scientific, and Technical Services



# Artificial Intelligence Industry Usage

Comparison on Average Annual Salary with a High Level Usage of AI



How does high AI usage affect average salary in these industries?



# Artificial Intelligence Industry Usage

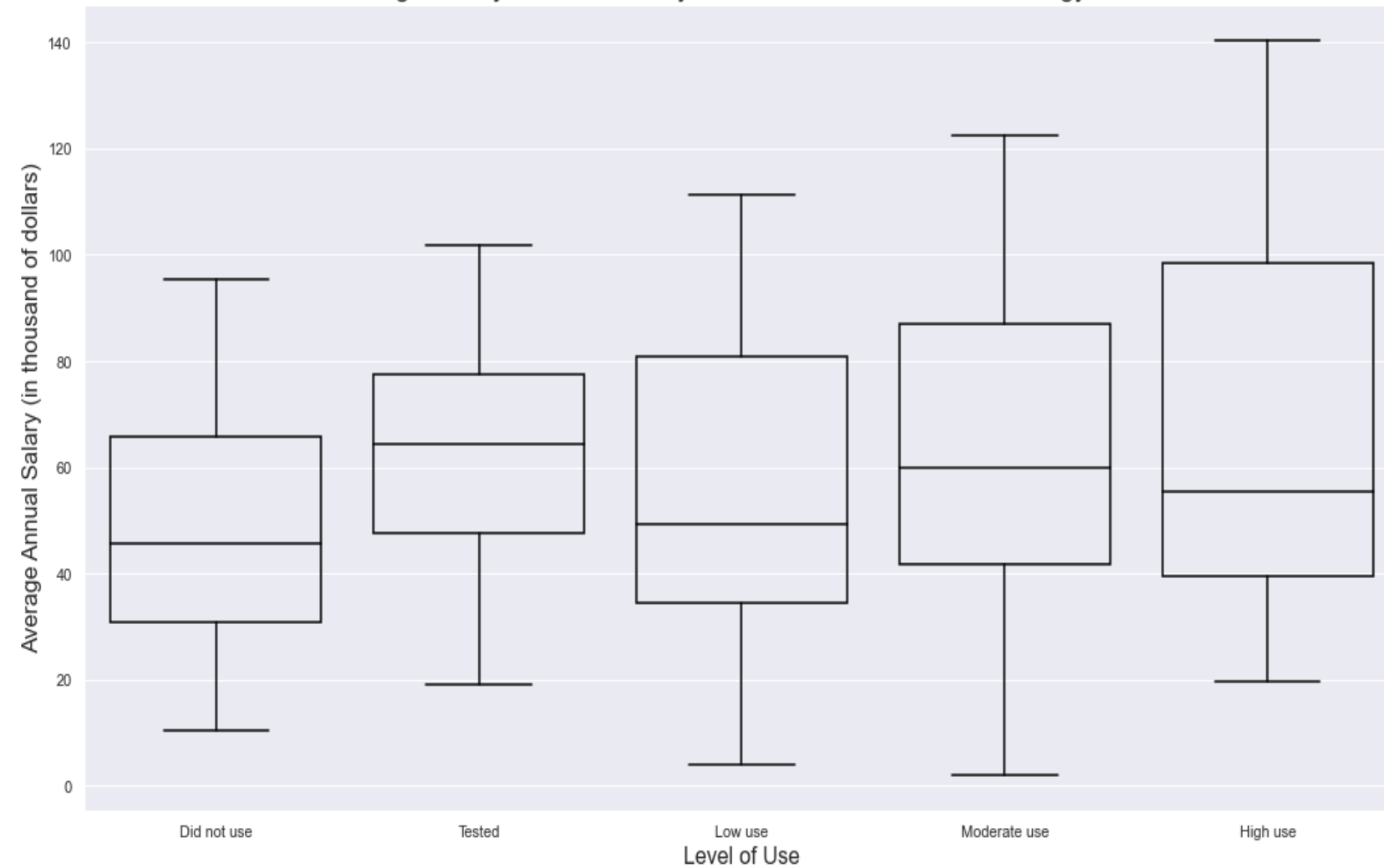
A hand is pointing at a digital map on a tablet screen. The map shows various geographical features and data points, with a bright light reflecting off the screen. The background is dark, and the overall tone is futuristic and technological.

# Cloud Based Solutions

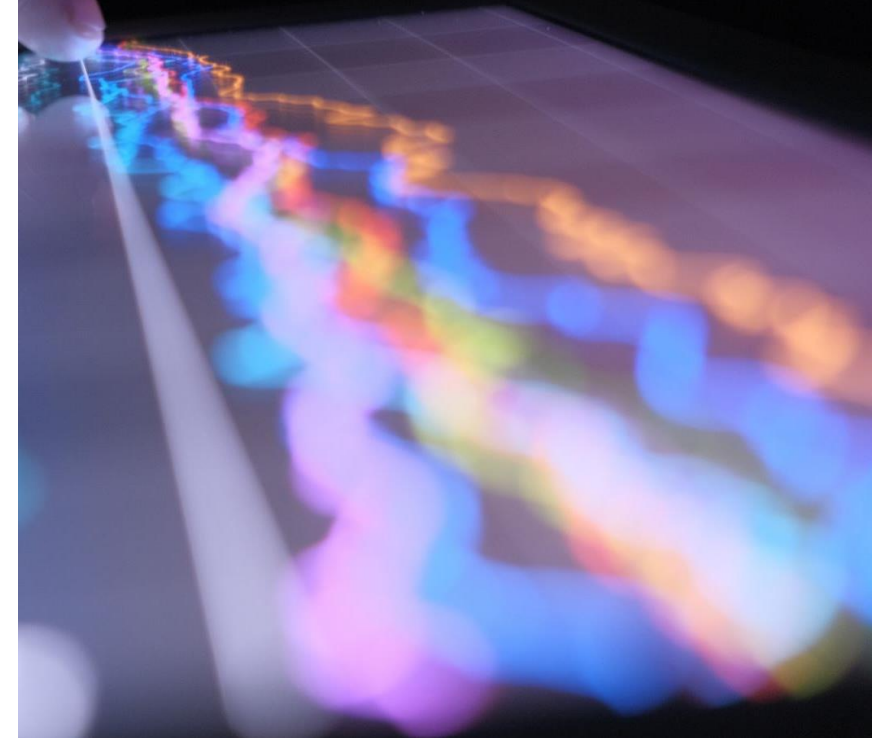
- Which industries use these technologies the most?
- Which industries are testing these ideas the most?
- Which industries use these technologies the least?
- Does pay go up when these technologies are being implemented?



Average Salary of Industries by Level of Cloud-Based Technology Used

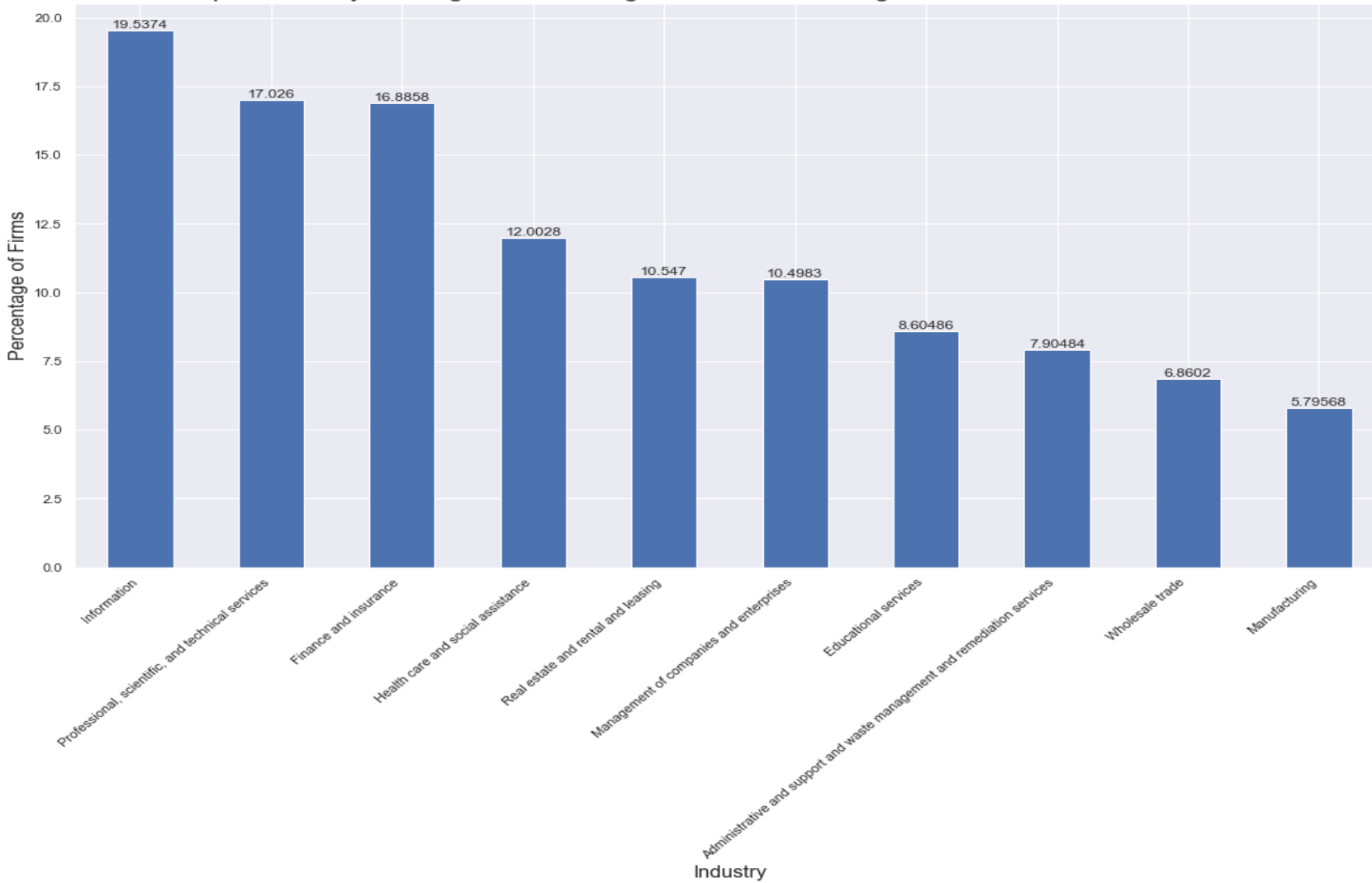


Does overall average salary go up as Cloud Based Technologies usage is implemented?



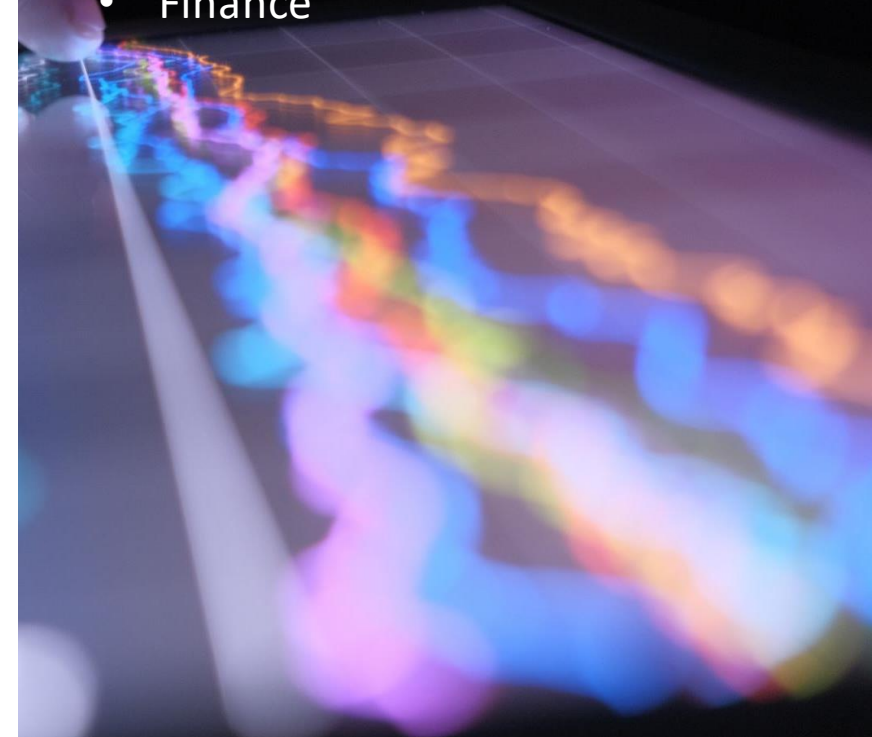
Cloud Based Industry Usage

Top 10 Industry with Highest Percentage of Firms Uses A High Level of Cloud Based Solutions



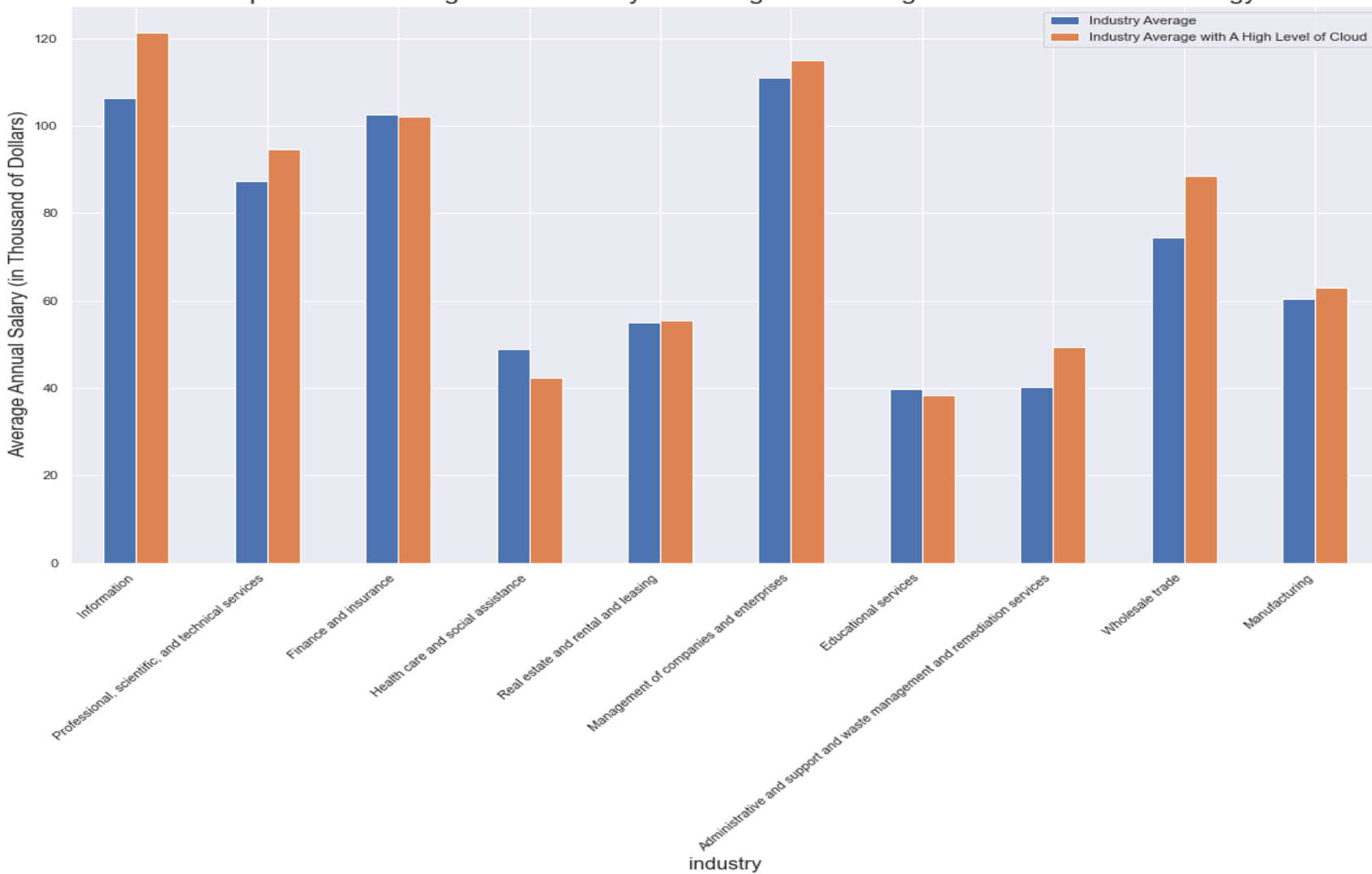
The top 3 Industries with a High Level of Cloud Usage again were:

- Information
- Professional, Scientific, and Technical Services
- Finance

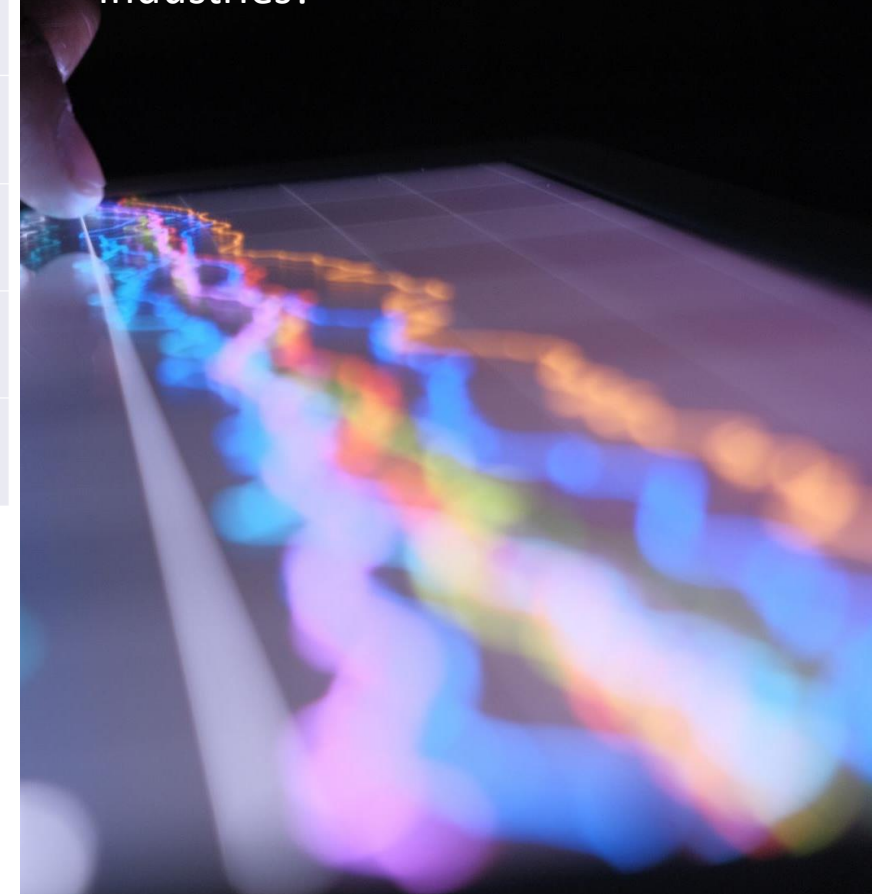


# Cloud Based Industry Usage

Comparison on Average Annual Salary with a High Level Usage of Cloud-Based Technology

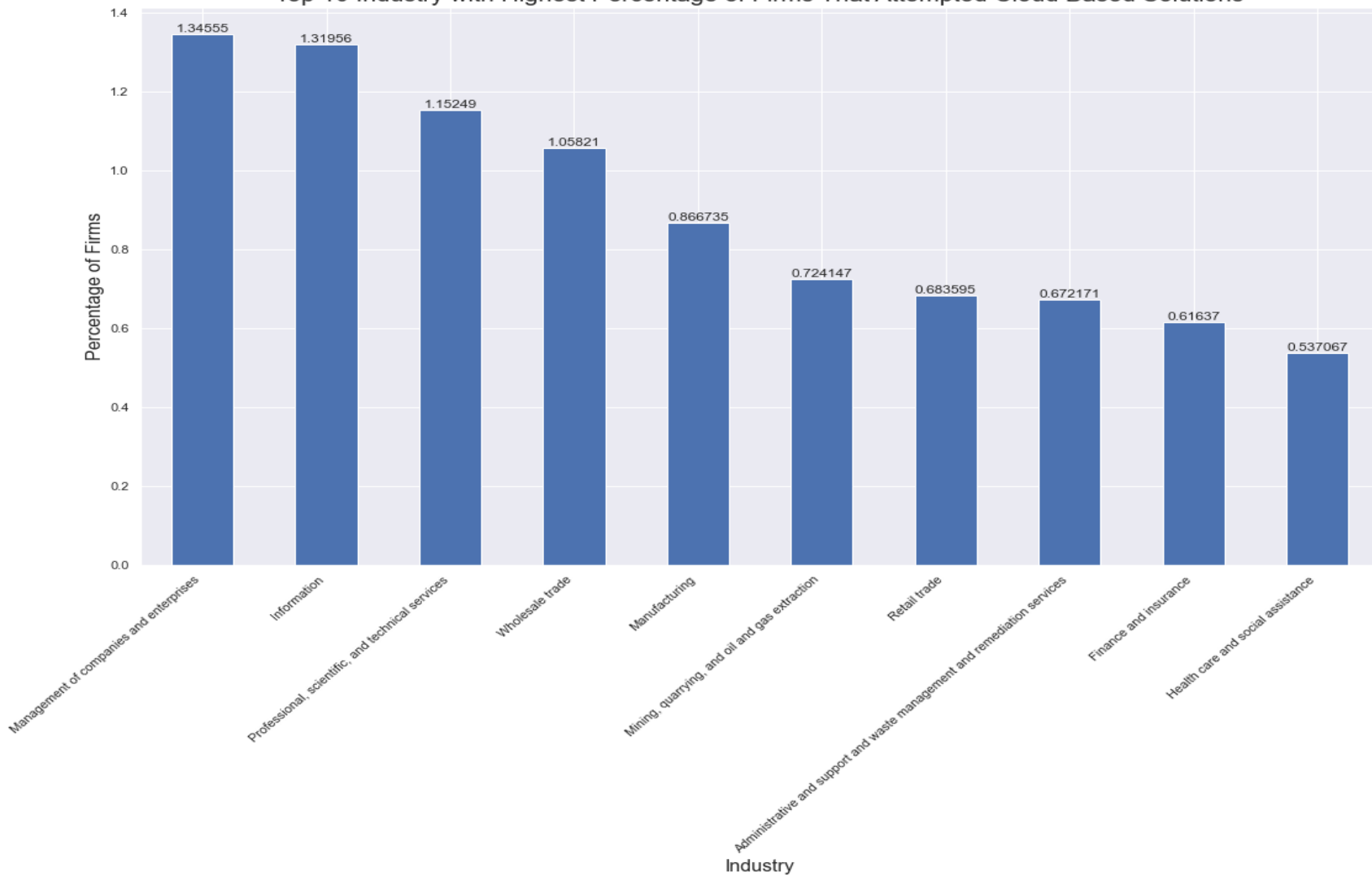


How does High Level Cloud Based usage affect average salary in these industries?



# Cloud Based Industry Usage

Top 10 Industry with Highest Percentage of Firms That Attempted Cloud Based Solutions

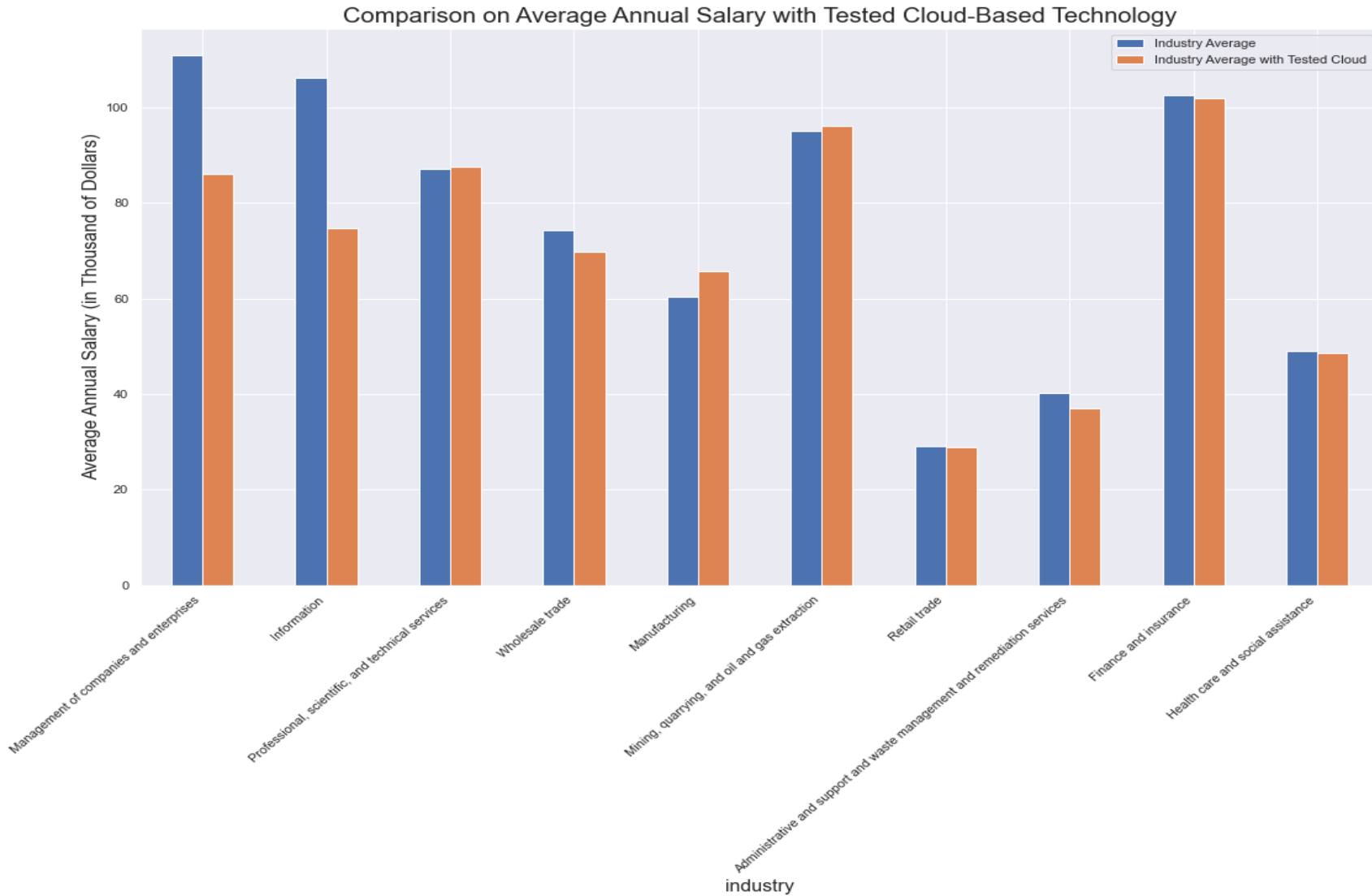


The top 3 Industries with tested of Cloud Usage again were:

- Management of companies and enterprises
- Information
- Professional, Scientific, and Technical Services

# Cloud Based Industry Usage



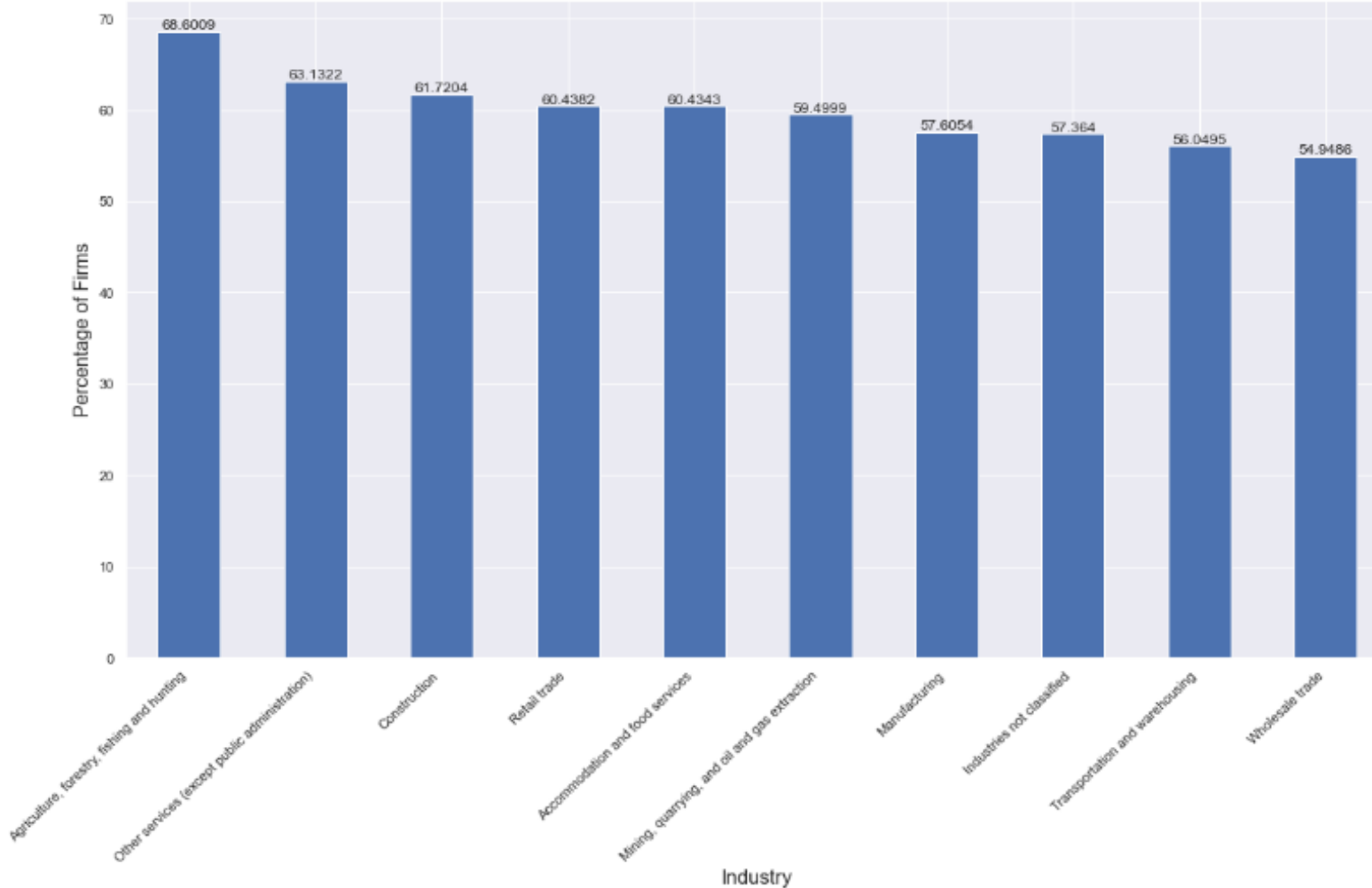


How does Testing Cloud Based technology affect average salary in these industries?



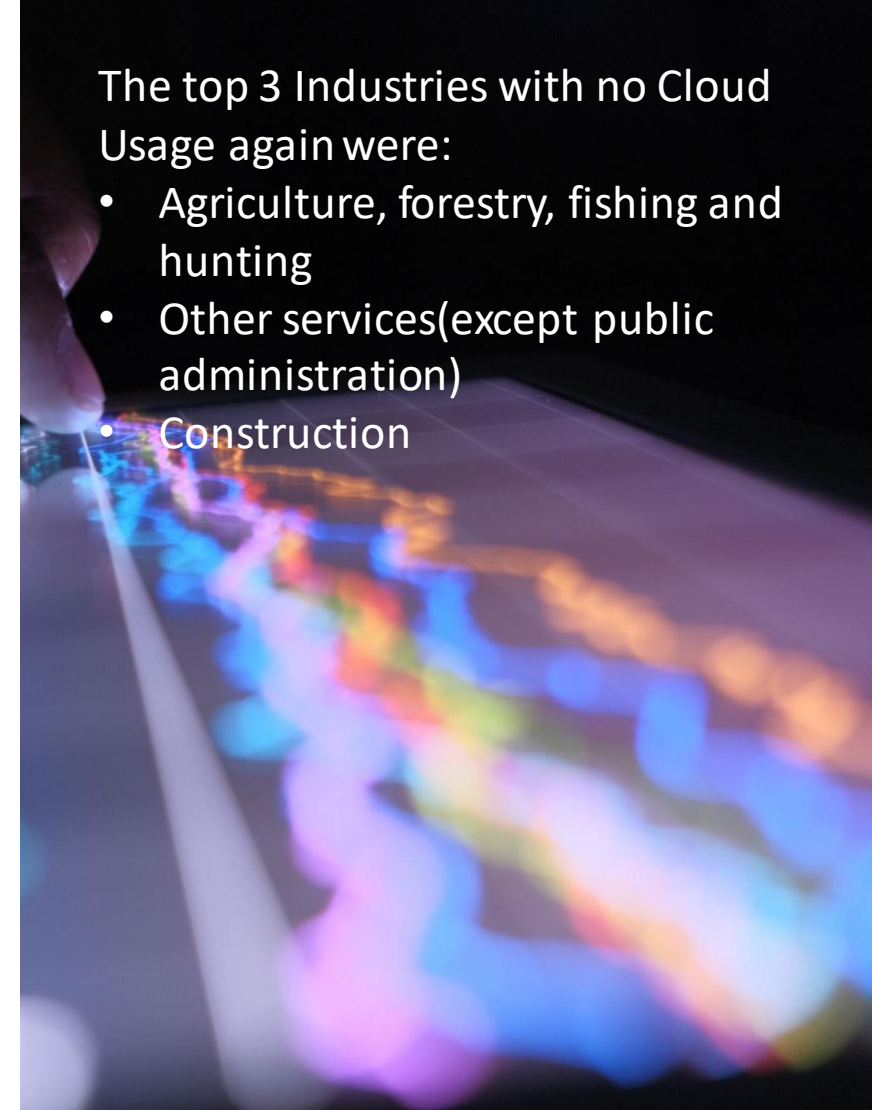
Cloud Based Industry Usage

Top 10 Industry with Highest Percentage of Firms Uses No Cloud Based Solutions



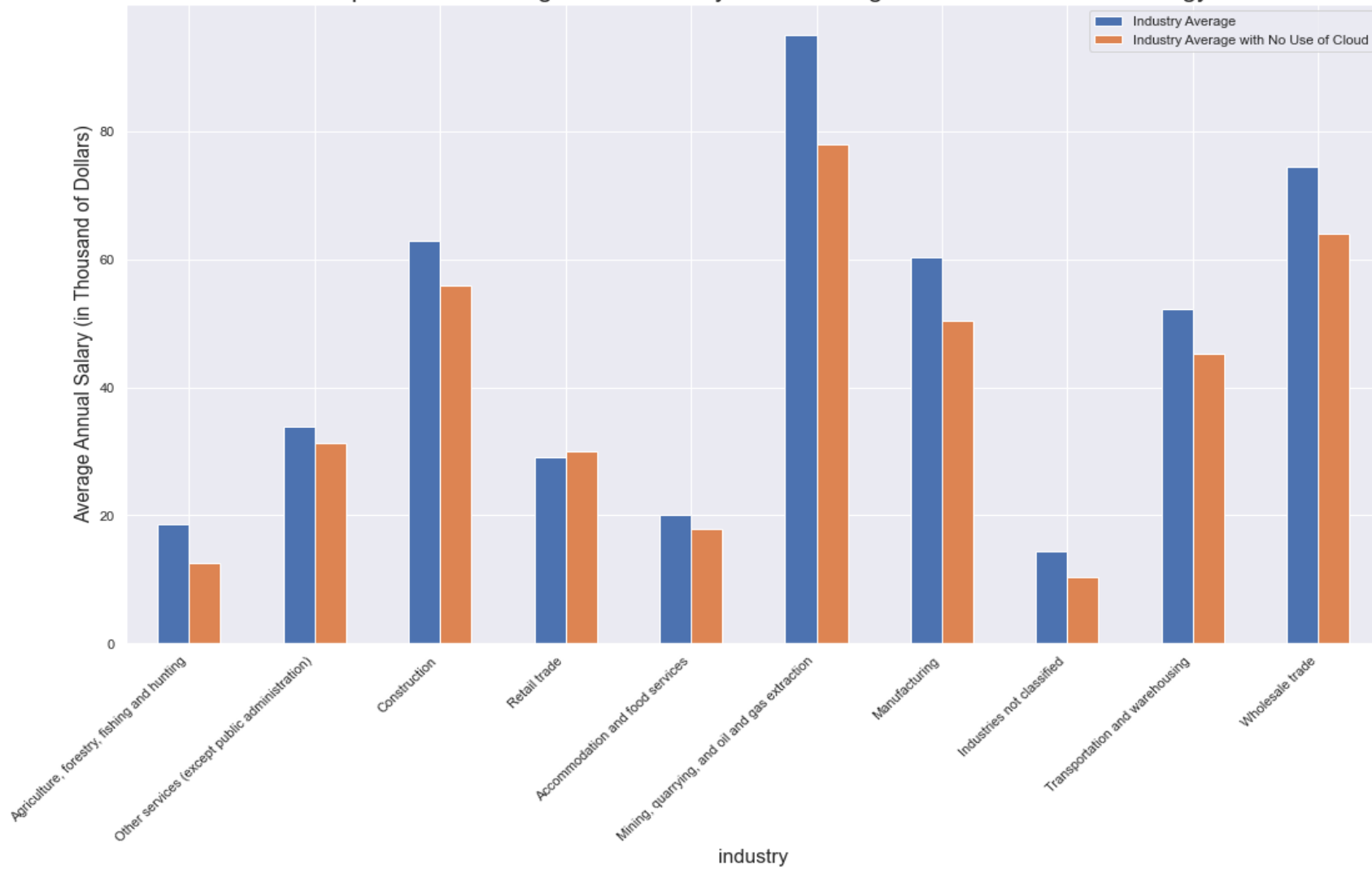
The top 3 Industries with no Cloud Usage again were:

- Agriculture, forestry, fishing and hunting
- Other services(except public administration)
- Construction

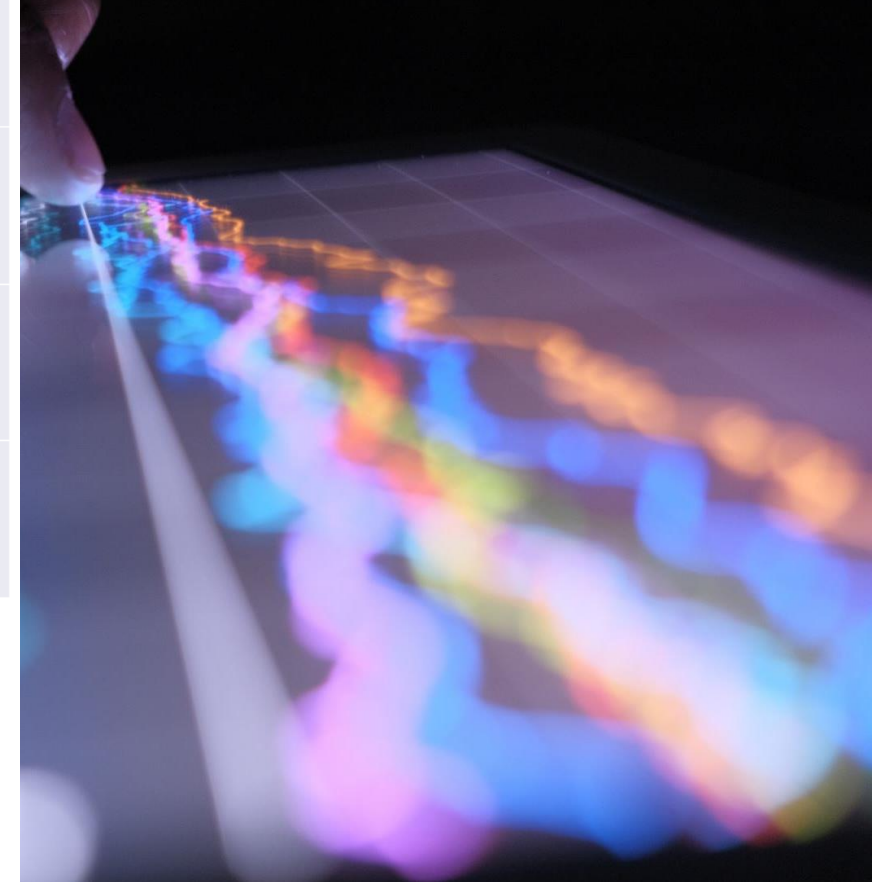


# Cloud Based Industry Usage

Comparison on Average Annual Salary with No Usage of Cloud-Based Technology



How does not using Cloud Based technology affect average salary in these industries?



# Cloud Based Industry Usage

# Conclusions

- Information and Finance seem to be utilizing AI the most. Cloud based technology is more established.
- Information and Finance are testing AI the most.
- Jobs traditionally considered “Blue Collar” are utilizing technologies the least.
- Attempting to implement AI shows an increase in median pay. Cloud based technologies does not appear to have the same relationship.
- For both AI and Cloud the average salary was higher for firms that referred to themselves as using these technologies at a high level.



A hand is pointing at a colorful, abstract projection on a screen. The projection features various shapes and colors, including blue, green, yellow, and red. The word "Questions?" is overlaid on the image in white text, with a vertical line to its left.

Questions?