

# Robotic Process Automation in Accounting

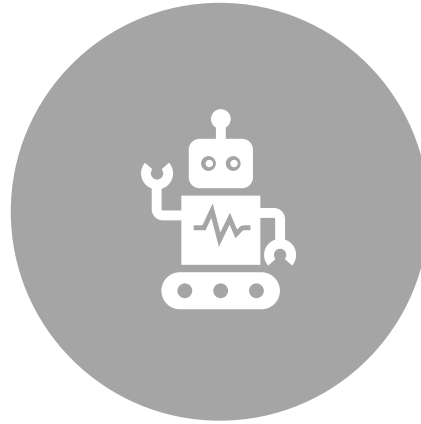
## CPA Ontario Centre in Digital Financial Information

Andrea Seaton Kelton, PhD  
MTSU Accounting Advisory Board Outstanding Professor  
Professor of Accounting

# Agenda



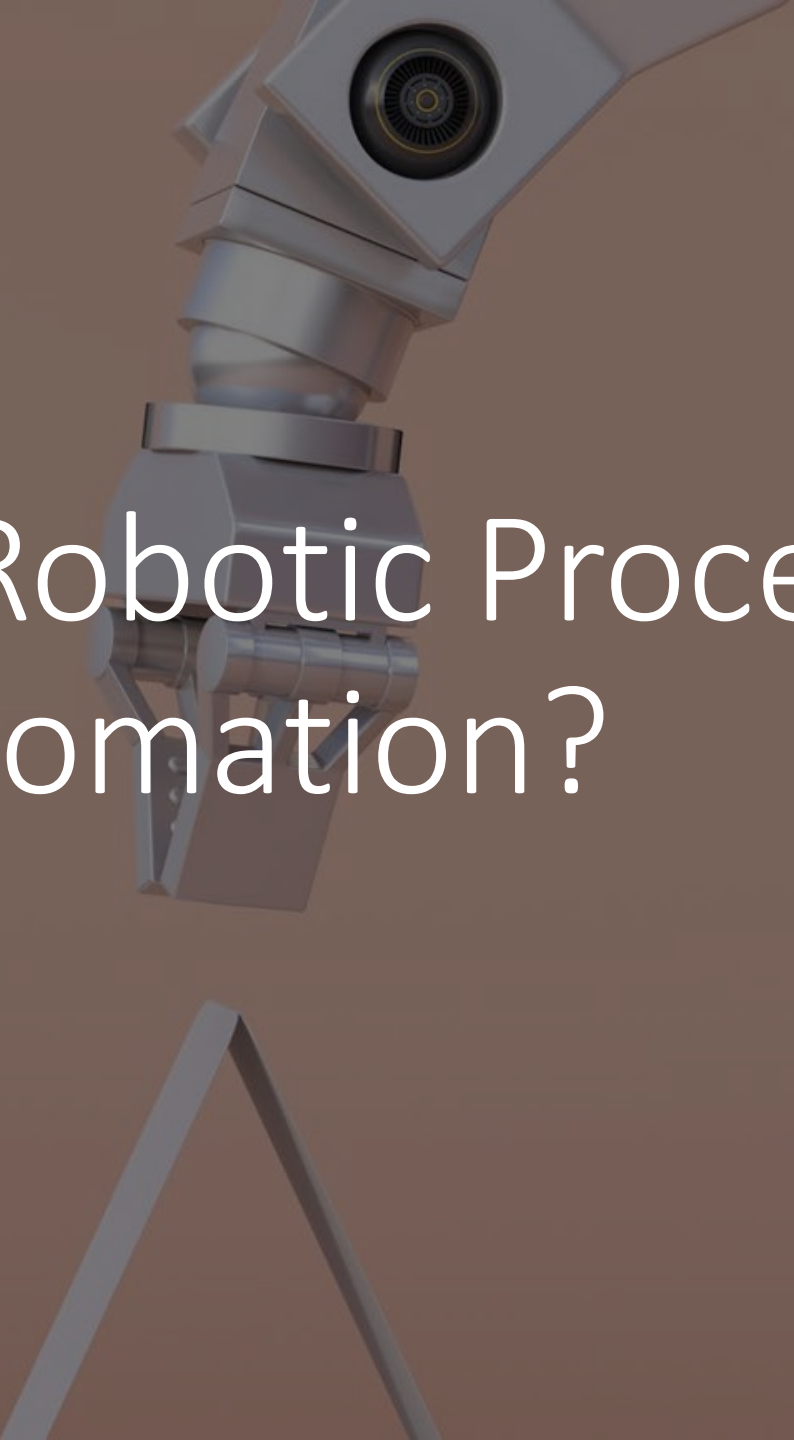
WHAT IS ROBOTIC PROCESS  
AUTOMATION?



ARE ROBOTS TAKING OVER  
ACCOUNTING?

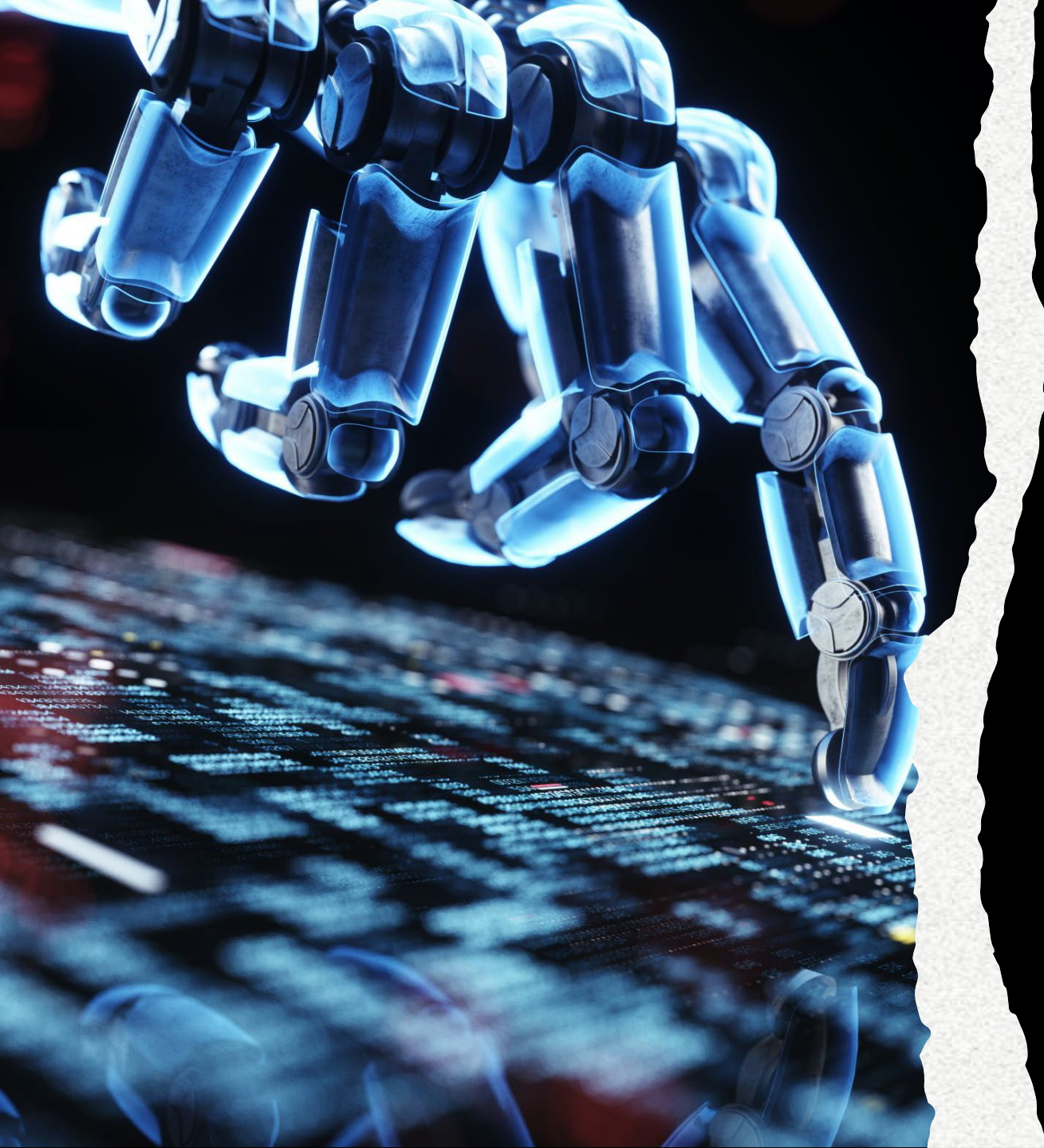


BEST PRACTICES IN ROBOTIC  
PROCESS AUTOMATION



# What is Robotic Process Automation?





# Robotic Process Automation versus Artificial Intelligence

# RPA Example



Save



Cut



Undo



Copy



Redo



Paste



Project



Notebook

Manage  
PackagesApp/Web  
RecorderTable  
Extraction

Analyze

Export  
to Excel

Publish



Run

## Activities



Search activities (Ctrl+Alt+F)

## Favorites



Group

(x) Set Variable Value

Write Line

## Recent



Use Application/Browser

## Activities

Resources

App &amp; Web Automation

Assets

Common

Data

## Excel



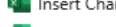
Excel Process Scope



Use Excel File

Cell

## Chart



Get Chart

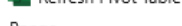


Insert Chart

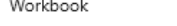


Update Chart

## Pivot Table



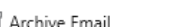
Change Pivot Data Source



Create Pivot Table



Filter Pivot Table



Refresh Pivot Table

Range

Workbook

File/Folder

Formatting

## Mail

Archive Email

Delete Email

For Each Email

Forward Email

Get Email By Id

Mark Email As Read/Unread

Main

Expand All Collapse All

## 1 Use Excel File



Excel file \*

{ } CIK.xlsx

Reference as

Excel

☒ Save changes☒ Create if not exists

Read formatting Same as project

☐ Template file

## 1.1 For Each Excel Row



For each

CurrentRow

In range \*

{ } [Excel] Sheet1

☒ Has headers☐ Save after each row

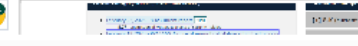
## 1.1.1 Use Browser Chrome: EDGAR Entity Landing Page



Browser URL \*

{ } https://www.sec.gov/edgar/browse/?CIK= [Curi...]

## 1.1.1.1 Extract Table Data



100%



# Who are the RPA Vendors?



© Gartner, Inc  
**Gartner**

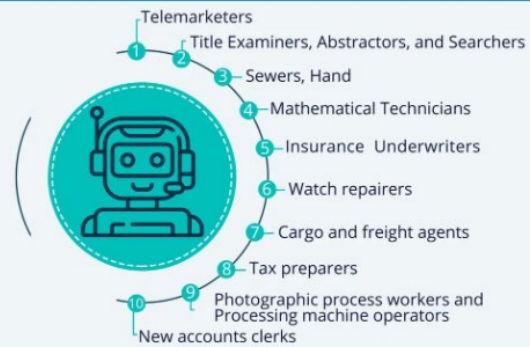
Source: [Garner \(2024\)](#)

# Are robots replacing accountants?





### Top 10 Jobs Likely to Be Automated

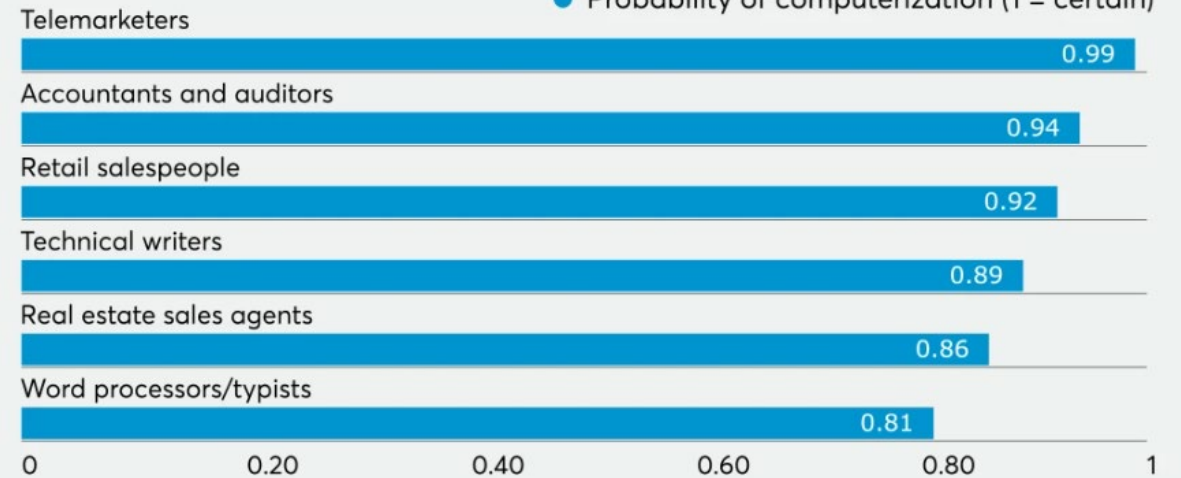


Source: The University of Oxford

Research.com

### Accounting jobs are likely to be automated

● Probability of computerization (1 = certain)



Source: The Economist/"The Future of Employment" by C. Frey/M. Osborne (2013)

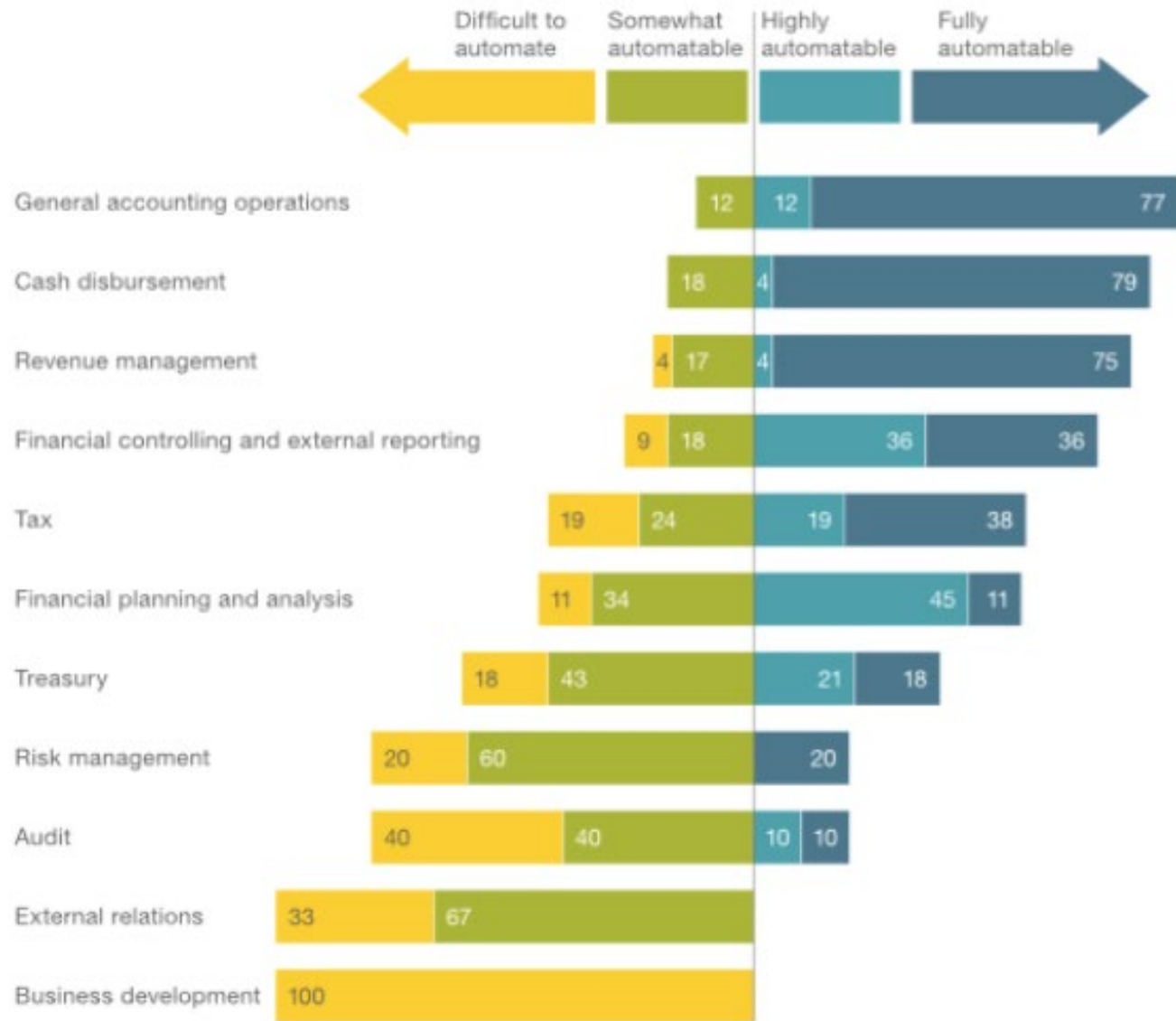
Why is  
accounting  
ripe for  
automation?

WHICH OF THE FOLLOWING FINANCIAL PROCESSES  
HAVE YOU ALREADY AUTOMATED?



## Good news for accounting

Activities that can be automated using demonstrated technologies, %<sup>1</sup>



<sup>1</sup>Proportion of tasks. Figures may not sum to 100%, because of rounding.

Some more  
good news  
for  
accounting

## Accountants and Auditors

Percent change in employment, projected 2023-33

Accountants and auditors

6%

Financial specialists

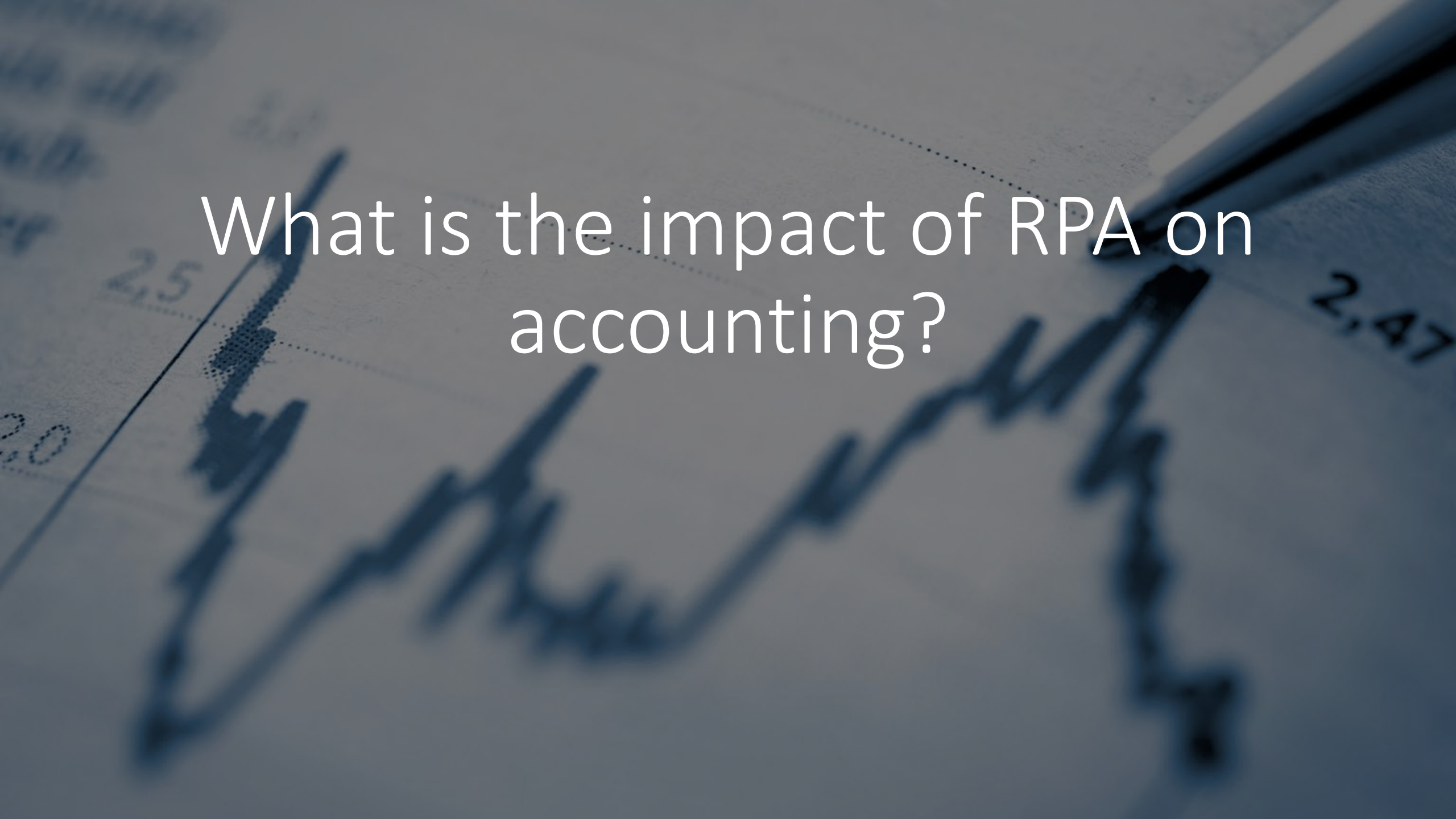
6%

Total, all occupations

4%

Note: All Occupations includes all occupations in the U.S. Economy.

Source: U.S. Bureau of Labor Statistics, Employment Projections program



What is the impact of RPA on  
accounting?



# Source: Cooper et al. (2022)

01

Changes the work accountants perform from mundane to more value-added tasks

02

Open new opportunities, thereby increasing job satisfaction

03

Improve career prospects within accounting firms, increasing the attractiveness of the accounting profession

04

RPA will not result in reduced hiring



# What is the impact of RPA on public accounting?



"I think we've made jobs easier and allowed people to focus on more value-driven work... You've got a lot more time to focus on reviewing that tax return, thinking of creating ideas to help the client."



"A lot of people don't like the mundane... It's not exciting. Everybody's talking about how in the audit profession we're going to fire 50 % of our people once bots do things.. It's the exact opposite; we're going to use them to do more value-added work."



"...higher value things that are going to require their innate cognitive sort of ability to make decisions as opposed to just do the same thing day-in and day-out. I think it's going to reduce turnover."



"It has allowed me to focus on client relationships and interpreting data rather than on mundane tasks."



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# Best Practices in Robotic Process Automation



Automate the  
“right” processes

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# Attributes of Automatable Tasks

- Stable environment
- Rules based
- Low complexity
- High volume of transactions
- Structured data
- Repetitive
- Accessing multiple systems
- Clear understanding of manual costs
- Digital data
- High error rate

Source: Eulerich et al. (2022)



## RPA Use Cases

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Sales order processing – use bots to create orders, update inventory and prepare sales invoices

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Inventory management – use bots to track inventory levels, notify managers of low stock, and monitor production for defects

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Fraud detection – use bots to identify anomalies like policy and approval limits, contract amounts, and bank account details

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Data collection – scrape websites for current data – e.g., stock prices, foreign currencies, interest rates, etc.



This post is way overdue, but I wanted to share some good news!

A couple weeks ago, the Finance Interns presented the projects we spent just about all summer working on to the finance team and executives. Everyone's presentations were great and showed how hard we all worked this summer! I worked on automating a tax calculation done in Excel each quarter using Tableau Prep. By using this automation, something that took the tax team around a day each quarter can be reduced to only taking around an hour to complete! The main takeaway from this project was giving the team more time to analyze the data rather than spending the majority of their time just completing the calculation itself.

I had the best summer working at Nissan and I'm happy to announce it isn't ending just yet! My internship with the Tax Team has been extended and I couldn't be happier! I want to thank my team once again for all of the continuous help and guidance they give me and I'm excited to continue working with this great team!

## My Student's RPA Projects

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Automatically send birthday emails to employees

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Tracks the prices of eggs for four prominent grocery stores in the US

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Extract data from Excel worksheet to populate a fillable PDF

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A large orange circle with a thin white outline, centered on a white background.

Manage RPA risks

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# What are the risks of RPA?

- 
1. RPA is often used as a quick-fix band-aid instead of fixing core problems
  2. RPA can cause internal control and security problems
  3. The true cost of RPA is often misunderstood and understated
  4. RPA governance is complicated and challenging
  5. RPA can lead to a loss of process knowledge



## 1. Band-Aid versus Fixing Core Problems

“RPA...offers a great solution...but they should be seen as a drug: It helps to relieve you of certain pain...we run the risk that we spend more time adhering to and trying to optimize a sub-optimal solution or workflow [using RPA]....instead of fundamentally redesigning the process..”

Source: Eulerich et al. (2024a)

## 2. Internal Control and Security Issues

“...it’s easy to generate a robot, and therefore, it’s not that easy to know here it was created and with which technology.”

“...somebody might think that it is in the best interest of the company to develop a robot, and use it for a certain process, but not realize that there might also be... and assurance perspective to be considered. And, you need to have certain controls in place on that robot...”

“If you hijack that bot that you can do whatever fraudulent activities you want. That is one of the biggest problems because you have to grant them powerful privileges.”

Source: Eulerich et al. (2024a)

### 3. Costs of RPA

“Of course, the security problems are eventually resolved and this costs a lot of money and interestingly, in the beginning we thought, ‘well this is a very cheap service, and we can sell it to everybody,’ but with all the security measures now, it’s no longer a cheap service.”

## 4. RPA Governance

“I think the biggest problem we are facing ... to give everybody rules that are on the one hand totally sufficient when it comes to compliance..., but on the other hand, easy and fast enough so the user does not have to go through several processes.”

Source: Eulerich et al. (2024a)

## 5. RPA and Knowledge Loss

“...if you have processes that you have set up with the help of RPA, they are working, and then nobody asks how they work, and with time we might lose the knowledge, the domain knowledge, that is behind the process.”

“What we would like to avoid is that robots do not become this understanding of ‘Okay. It’s like a VBA macro that worked as long as my working student is there, and once he’s gone, then it doesn’t work anymore.’”



# RPA Governance Framework



BOT USAGE DECISION



ACCESS AND  
AUTHORIZATION  
MANAGEMENT



MANAGING RPA PROCESS  
CHANGES



IT OPERATIONS

Source: Eulerich et al. (2024b)

# In conclusion.....

- The robots are NOT coming for accountants' jobs
- RPA can free up resources for analysis and decision making
- Automation is here to stay.

**ANY  
QUESTIONS?**

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