

How will Humans and AI work together?



AI-Driven Task Modeling for Workforce Optimization

Monthly Research Briefing | October 1st, 2025

Introduction



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PhD Student at MIT
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The GenAI Divide

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MIT report: 95% of generative AI pilots at companies are failing



BY **SHERYL ESTRADA**
SENIOR WRITER AND AUTHOR OF CFO DAILY

August 18, 2025 at 6:54 AM EDT



GETTY IMAGES

Agenda

1. Research | Modeling Human/AI collaboration.

2. Case Study | Finding AI Opportunities in an organization

3. Tools | Doing it at scale?

Agenda

1. Research | Modeling Human/AI collaboration.

    1. a. The research question.

    1. b. How do you model a job?

    1. c. Can you model my organization?

    1. d. Wait, can we evaluate what can be AI augmented?

    1. e. Yes.

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1. Research | Modeling Human/AI collaboration.

1. a. The research question.

1. b. How do you model a job?

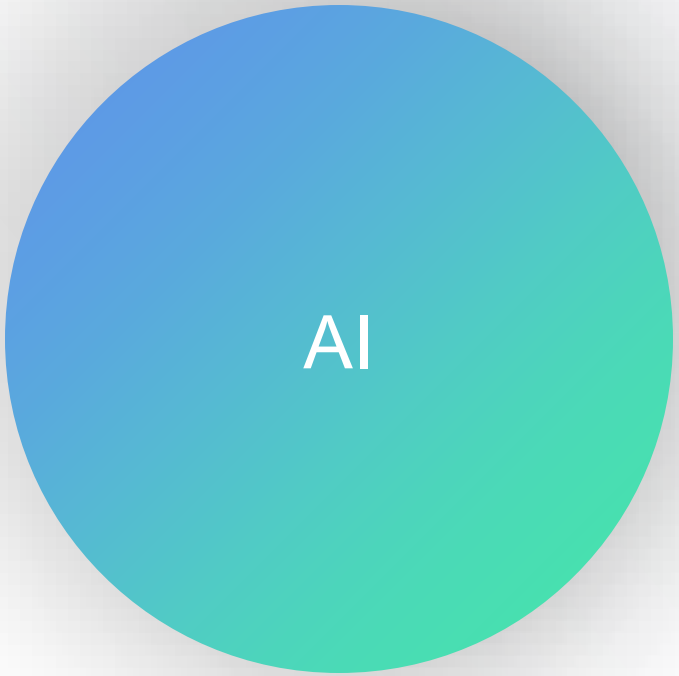
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1. a. The research question

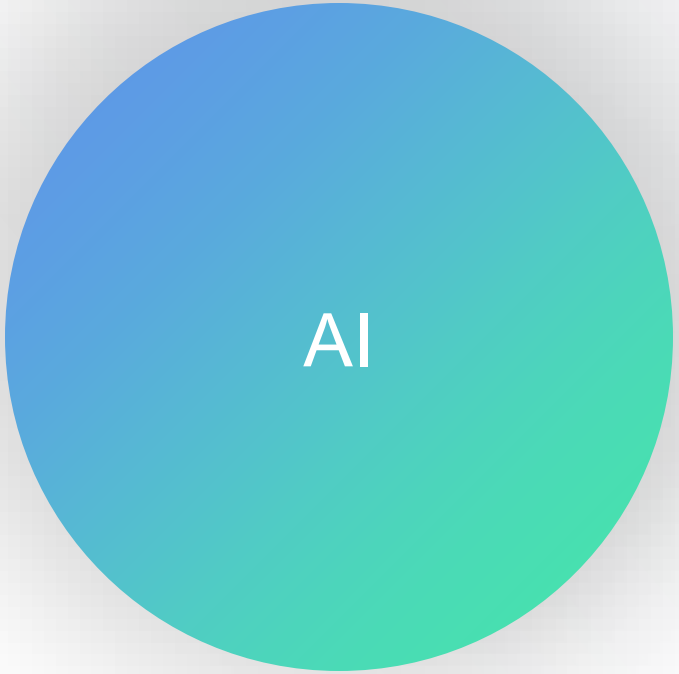
How will Humans and AI work together?



A machine able to simulate a human decision.

1. a. The research question

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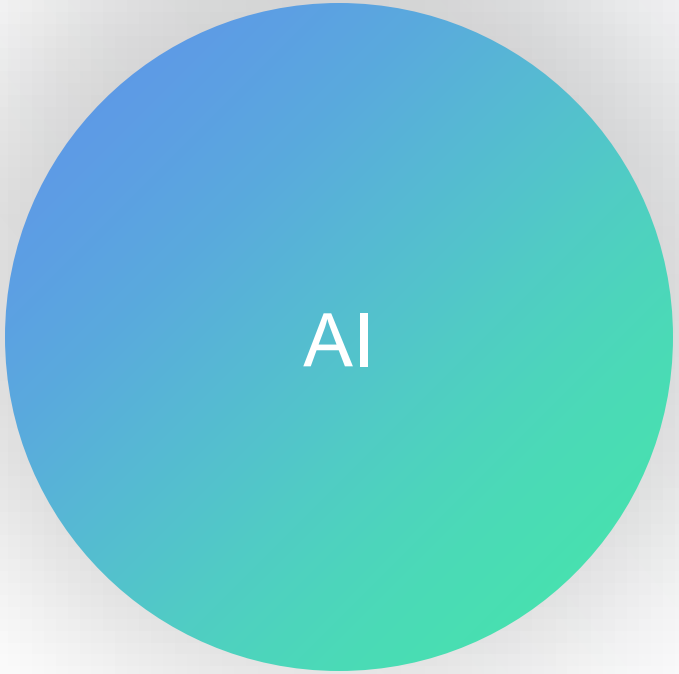
Based on stochastic or deterministic rules.

Example:

- Newsvendor model
- Economic order model

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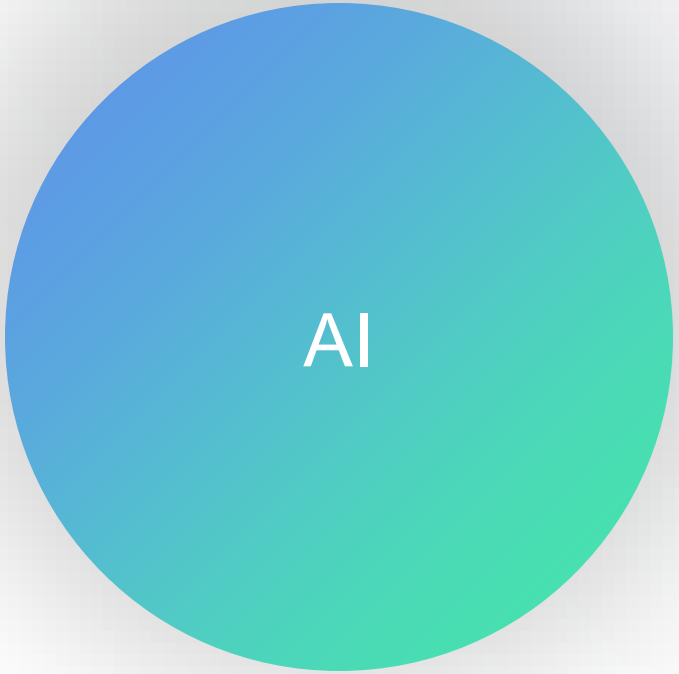


Learns from the data it sees.

Example:
- Dynamic pricing @Uber
- Generate text based on a prompt @OpenAI

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Deep learning



Reinforcement learning

Non-Exhaustive View

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1. b. How to model a job?

A job consists of a set of activities performed by an individual to create value.

Example: Graders and Sorters, Agricultural Products



1. b. How to model a job?



The oldest and largest dataset of occupational information around the world.

O*Net Occupational Information Program

25,000 companies
surveyed each year

55,000+ jobs
analyzed

900+ job profiles
Standardized descriptions



1. b. How to model a job?

Example: Graders and Sorters, Agricultural Products



1. b. How to model a job?

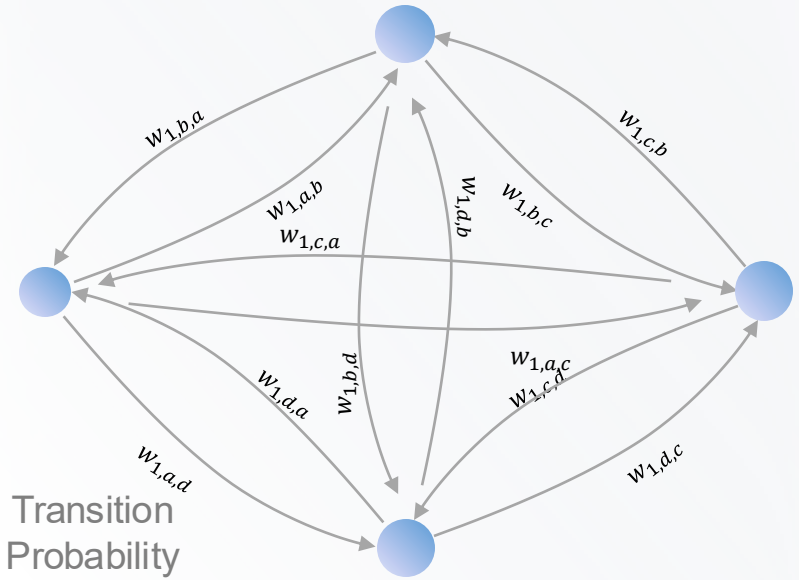
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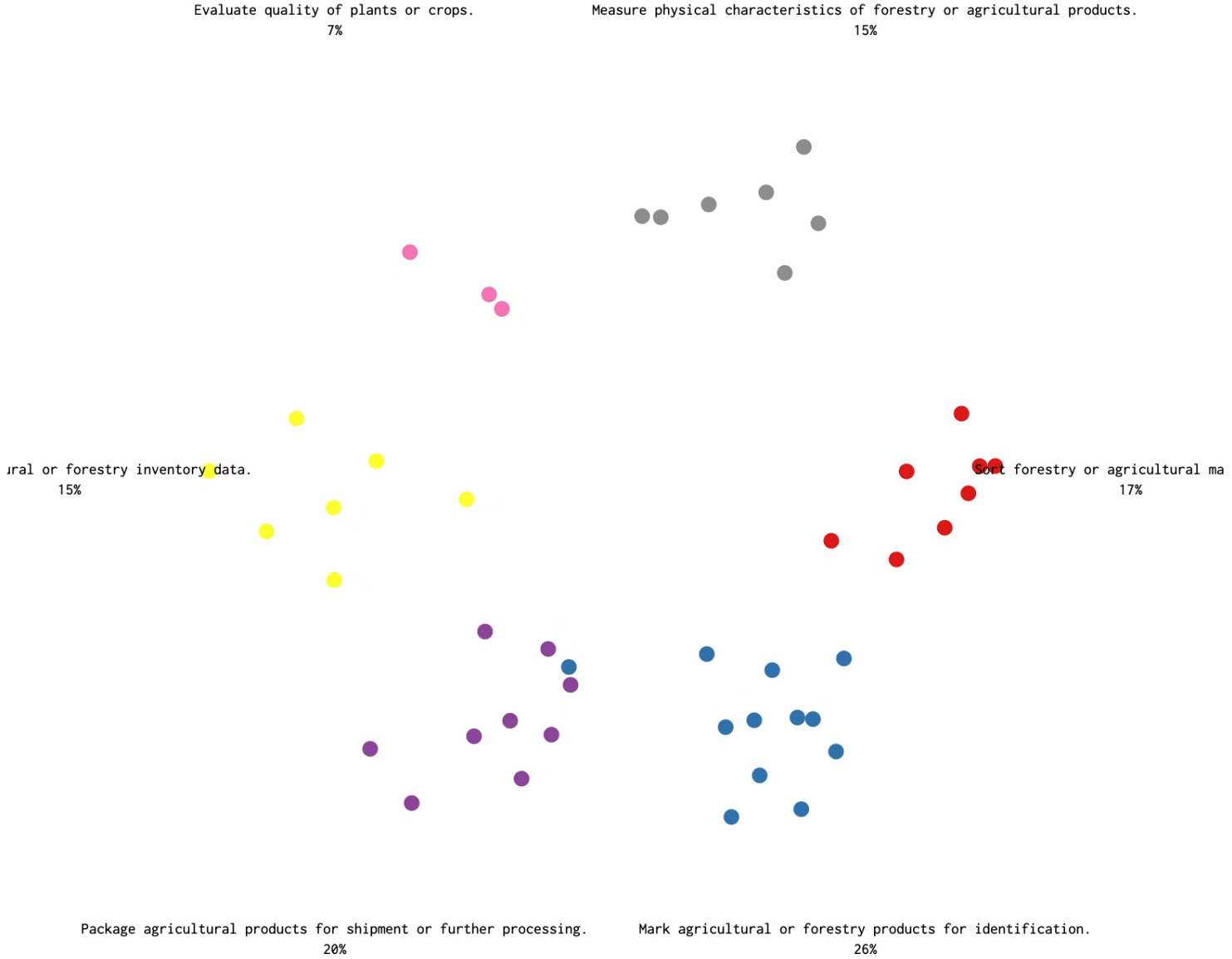


A digression



A digression





45 Workers

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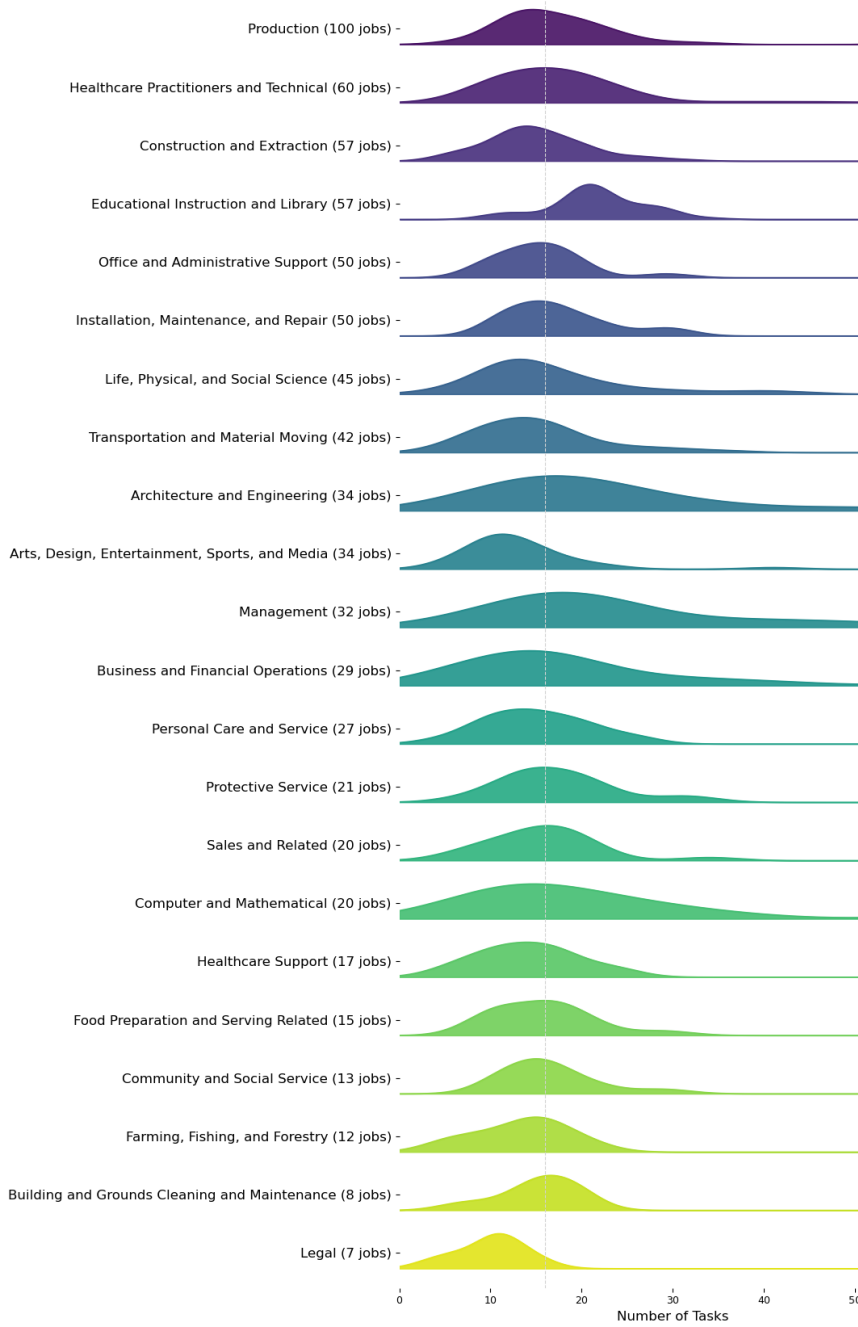
    1. e. Yes.

1. c. Can you model any organization?

"Enterprises span functions, from engineers to finance to HR. So does our model."

We've built digital twins for all occupations in the O*NET dataset.

1. Ingest HR database
2. Map it to digital twins.
3. Identify which tasks are redundant, expensive, and AI augmentable.



1. c. Can you model any organization?



- Can I have a breakdown of my company by task, showing who is responsible for what?
- Which tasks are redundant/expensive in my organization, department, or team?
- How can I determine precisely where to invest in AI to achieve the highest ROI?

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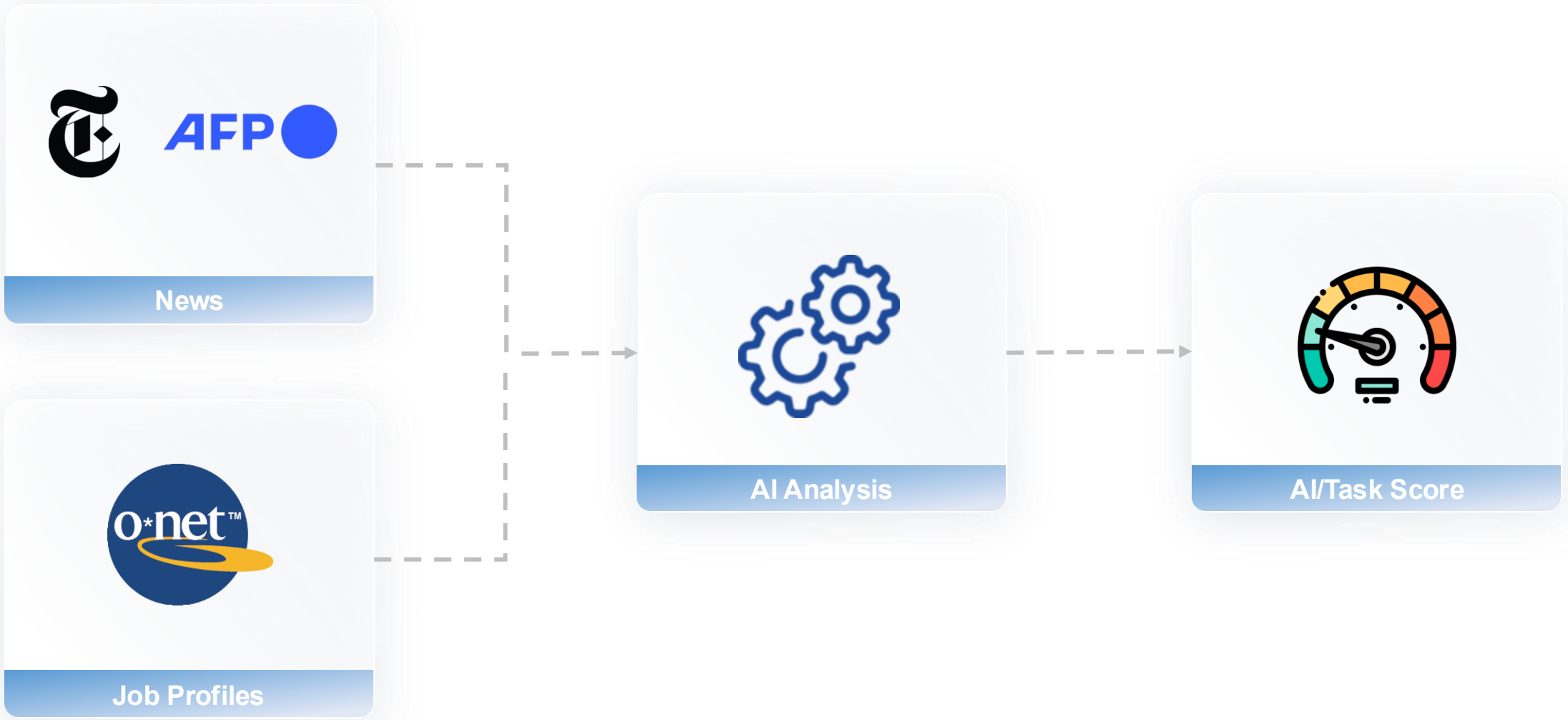
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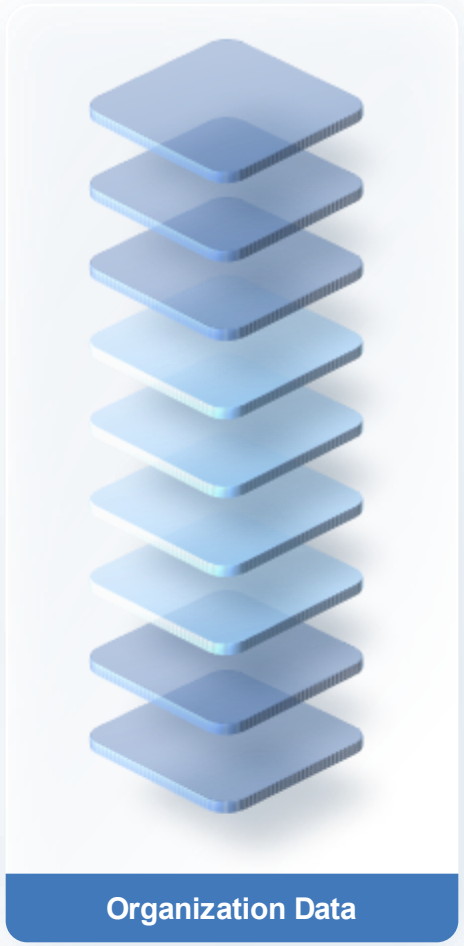
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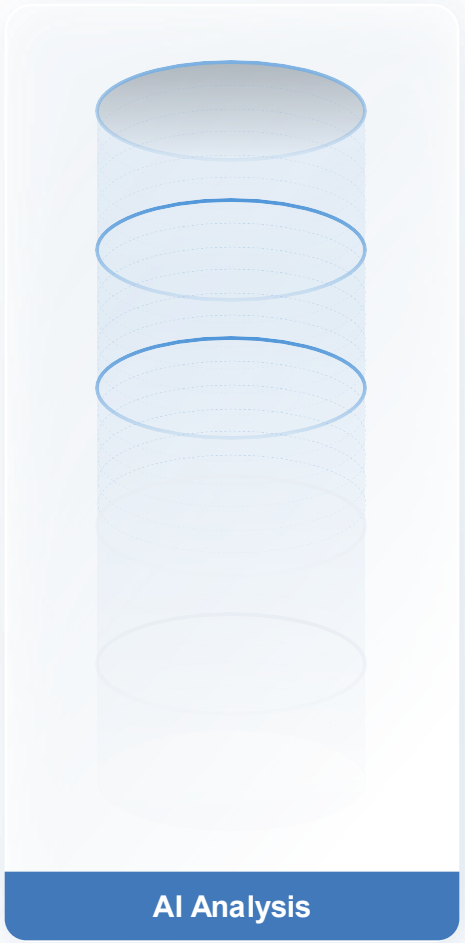
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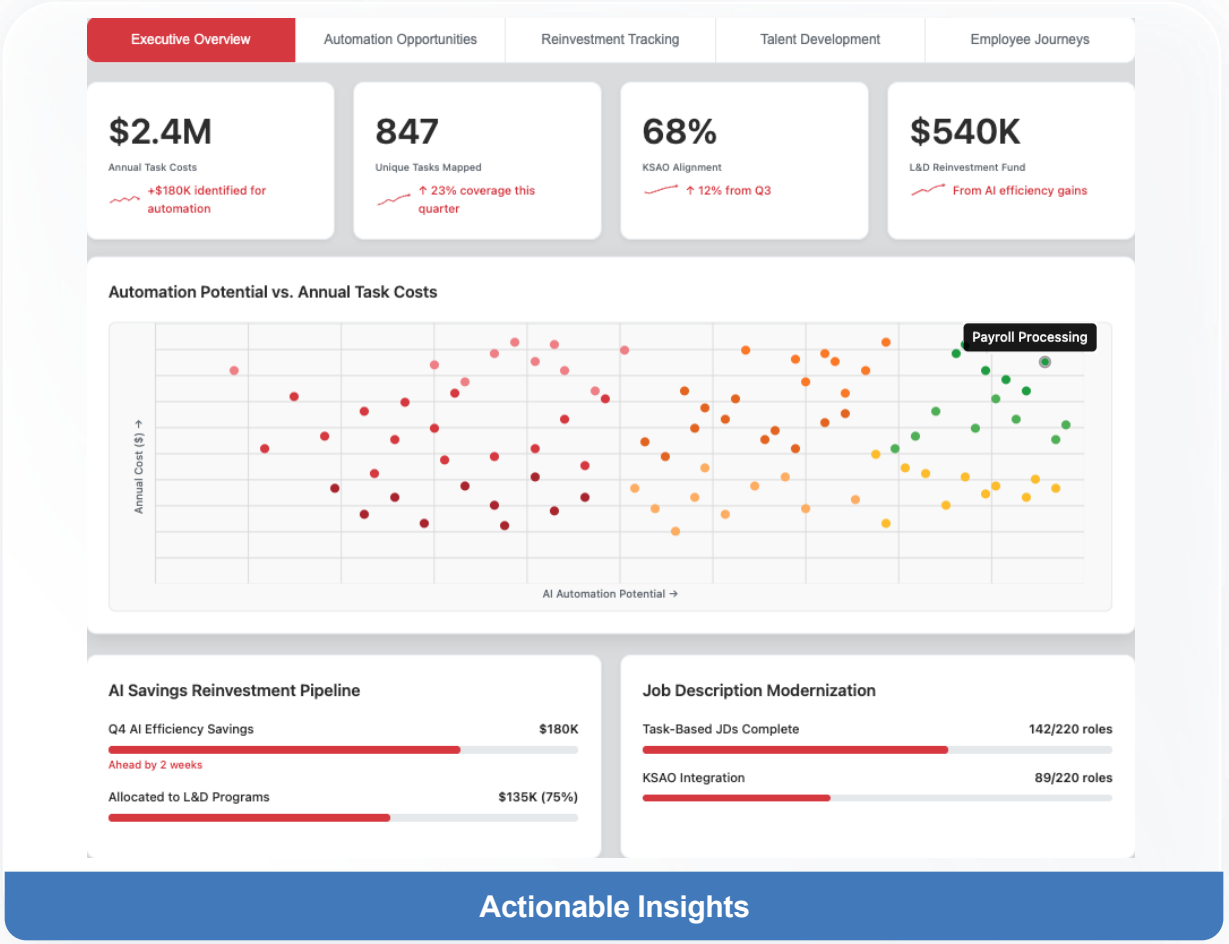
1. e. Summary



Organization Data



AI Analysis



Actionable Insights

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2. Case Study - Context

Case study: “CS Inc” a large public sector organization

60
Locations.

Locations of CS Inc.

- The wage bill of the largest location – Boston - is $86M, with 1207 FTEs.

1095
Departments.

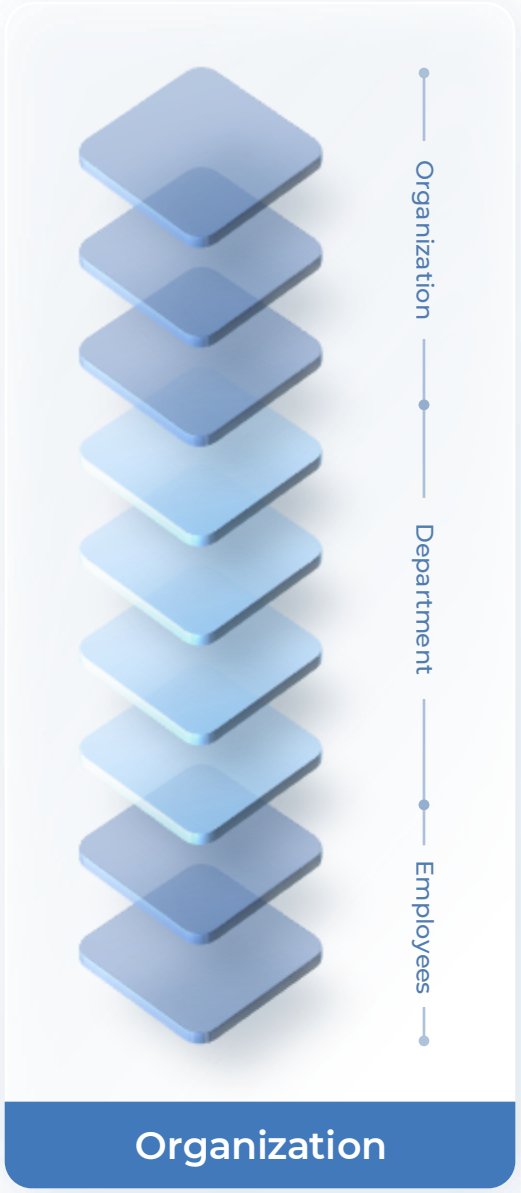
Departments in CS Inc.

- The wage bill of the largest department – Boston’s ferry office - is just under $9M, with 144 FTEs.

14.6 Thousand
Number of workers in CS Inc.

CS Inc. Employees

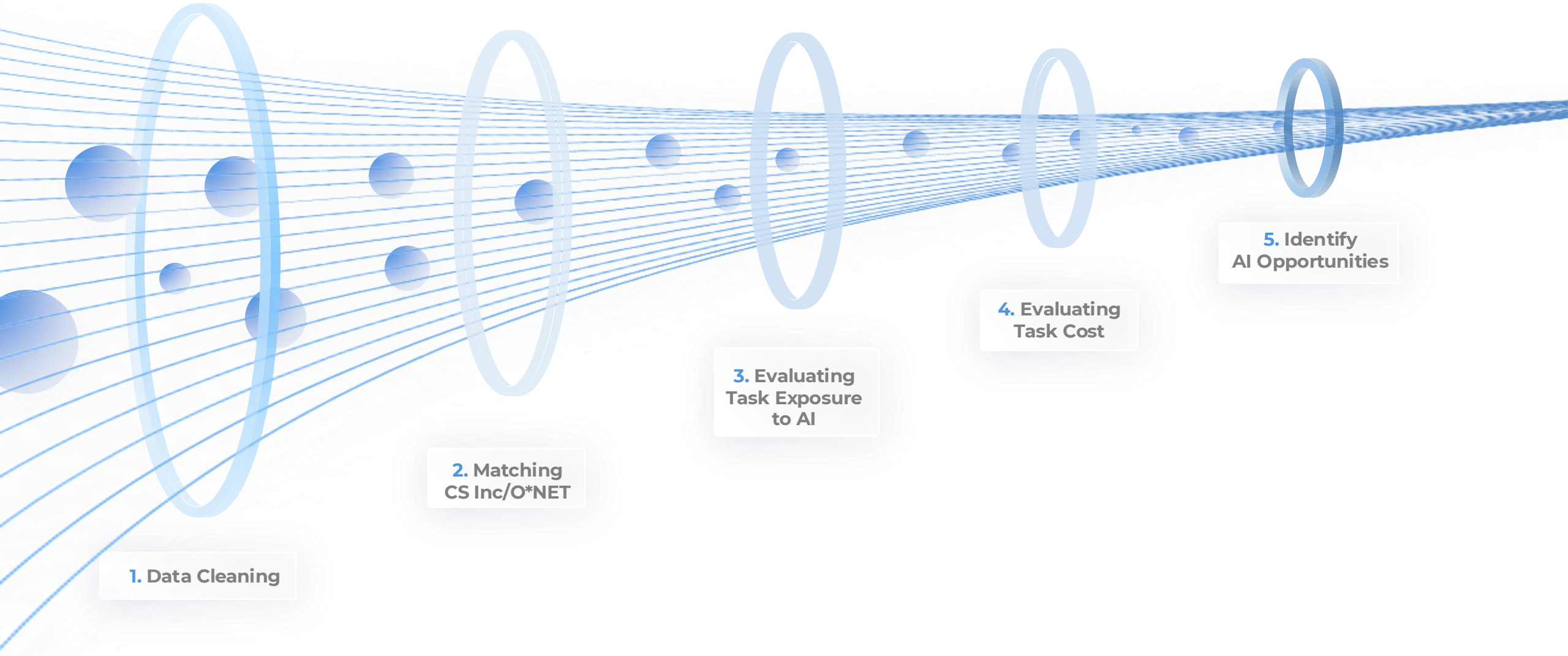
- In 2025, CS Inc. employed approximately 14.6 thousand persons, spanning from maintenance workers to high-level management.



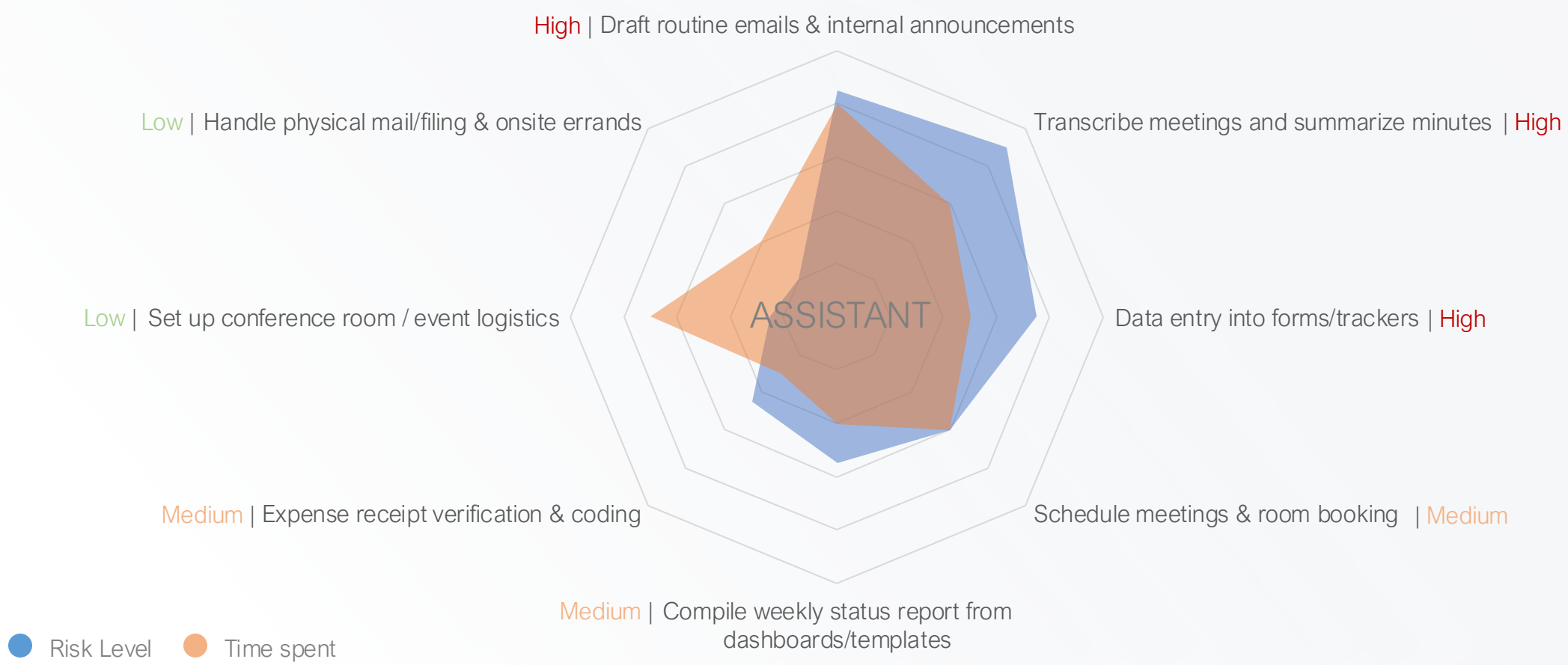
2. Case Study – Data Structure



2. Case Study – Analysis Framework



2. Case Study – Job Profile



2. Case Study – Results



$1 Billion
Total Wage Bill in CS Inc.

3262 (24.3%)
Percentage of CS Inc. employees exposed to AI.

$250 Million
Wabe Bill of CS Inc. employees exposed to AI.

Total Wage Bill in CS Inc.

- The wage bill is calculated by summing the salaries of each employee.

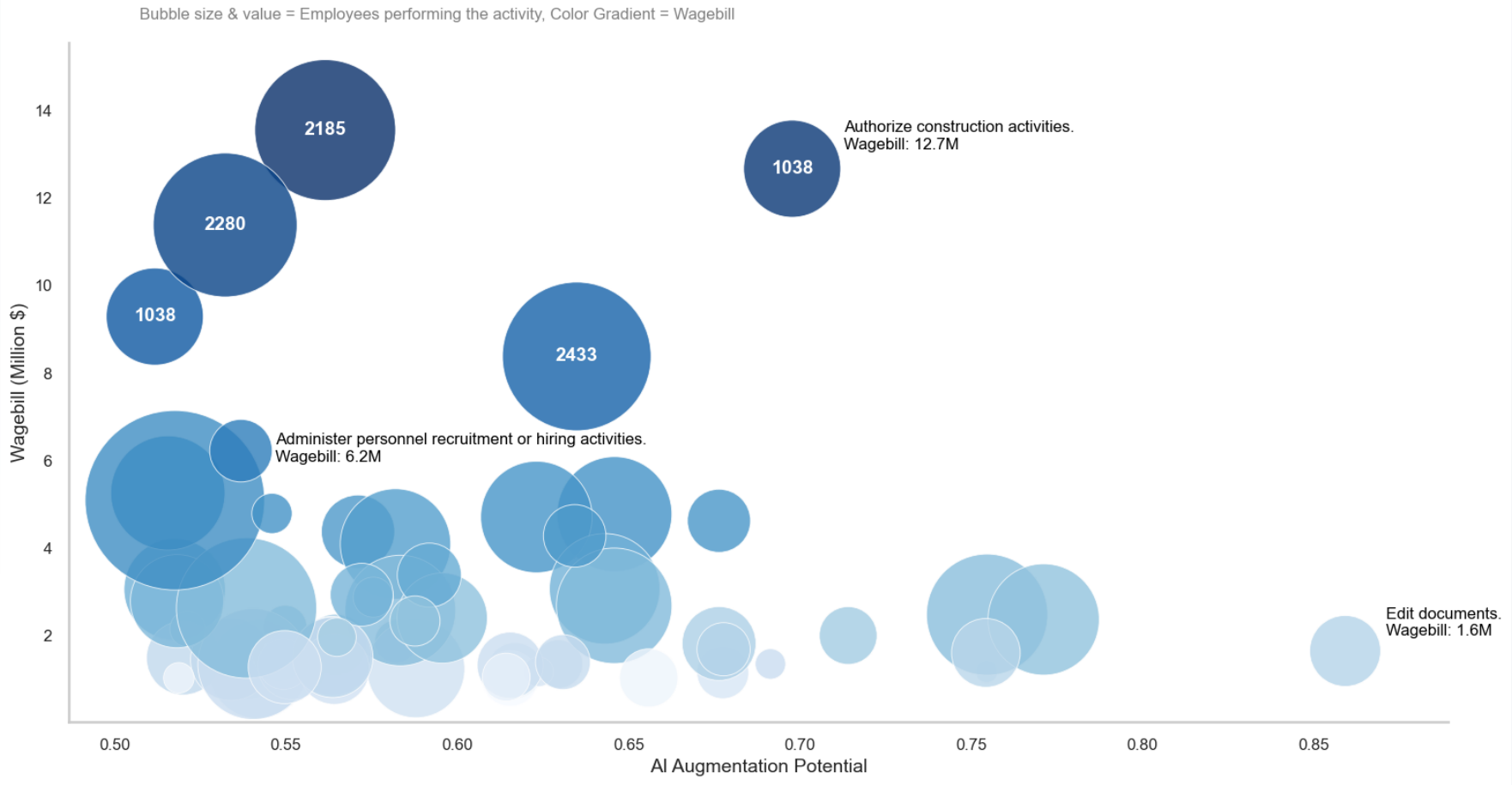
AI Acceleration of Tasks

- Approximately 3262 jobs can be accelerated through AI, which accounts for about 24.3% of the total CS Inc. workforce.

Total Wage Bill exposed to AI in CS Inc.

- While exposure rates vary, and the feasibility of implementing AI solutions must be assessed on a case-by-case basis, the potential for successful AI augmentation projects is high.

2. Case Study – Selecting Tasks for AI Investments



2. Case Study – Scenario Analysis



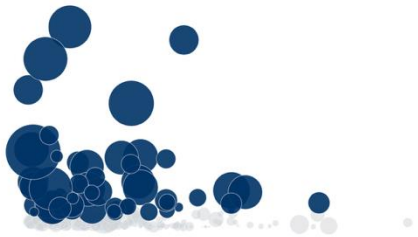
Task Minimum Annual Wage Bill – $10 Million+ Tasks ($37.6M)

Number of tasks	Scenario 5%	Scenario 15%	Scenario 25%
3	1.9 Million	5.6 Million	9.4 Million



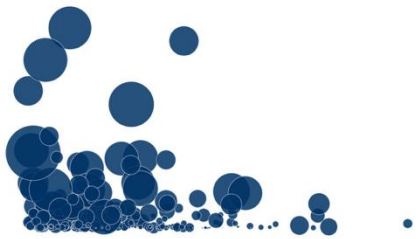
Task Minimum Annual Wage Bill – $5 Million+ Tasks ($71.9M)

Number of tasks	Scenario 5%	Scenario 15%	Scenario 25%
8	3.6 Million	10.8 Million	18.0 Million



Task Minimum Annual Wage Bill – $1 Million+ Tasks ($189.6M)

Number of tasks	Scenario 5%	Scenario 15%	Scenario 25%
63	9.5 Million	28.4 Million	47.4 Million

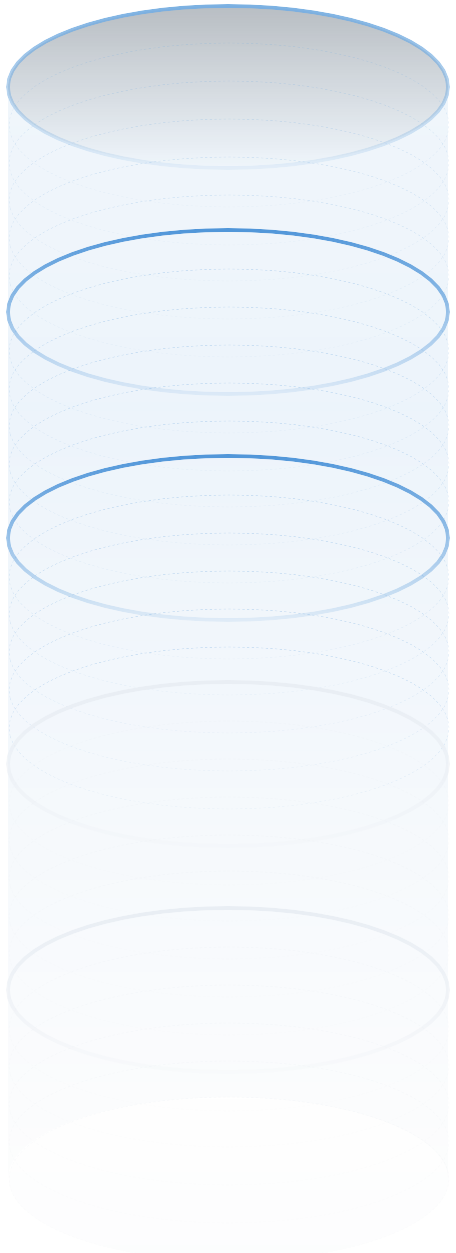


Task Minimum Annual Wage Bill – Any Task ($250.5M)

Number of tasks	Scenario 5%	Scenario 15%	Scenario 25%
389	12.5 Million	37.6 Million	62.6 Million

2. Case Study – Automating a Task

Task	AI Exposure	Employees	Wage Bill
Determine geographic coordinates.	High	104	$305k
Transcribe information.	High	358	$85k
Edit documents.	High	554	$1.6M
Read material to determine needed actions.	High	245	$844k
Prepare documents for legal proceedings.	High	35	$22k



2. Case Study – Results

Edit Documents

Clear task where AI investment can yield ROI.

$1.6M

Annual wage bill for document editing.

550

Number of workers at CS Inc. with the task of editing documents, identified by UIDs.

Clear Story

$400,000

Estimated savings from a 25% productivity increase.

$-50,000

Cost of the recommended AI tool.

$350,000

Estimated savings from AI productivity increase.

Financials

55 Locations

Across the state of MA.

220 Departments

Clearly identified.

Deployment

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3. Demo

Link

Connect



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