



# Measuring AI exposure using work activities from online profiles and job postings

NABE TEC 2024  
Lisa Simon



# Agenda

1. Revelio Labs Data Intro
2. Measuring AI exposure in work activities
3. The AI productivity matrix

# The entire workforce revealed

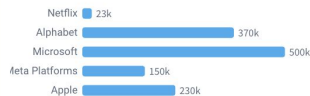
- Track company headcounts
- Compare to competitors
- Analyze industry trends
- Understand worker trajectories
- Job analysis

## Company > Compositions

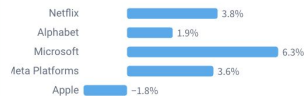
Netflix X Alphabet X Microsoft X Meta Platforms X Apple X [+/- Company & Industry](#)

Filter

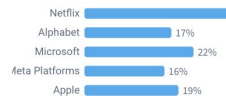
### Headcount



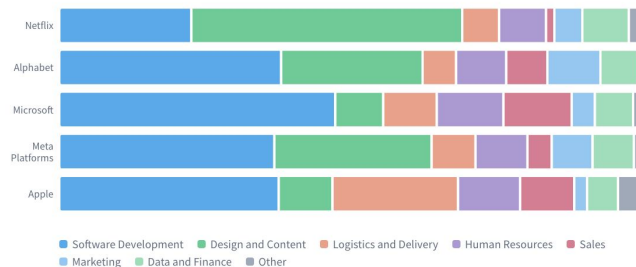
### Growth Rate



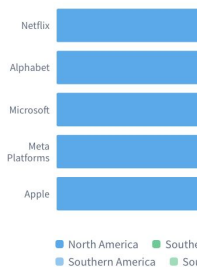
### Hiring Rate



### Role



### Geography



# Our Data



## Profiles

- linkedIn
- Maimai
- Xing
- Jobcase



## Postings

- Company websites
- Aggregator sites
- LinkedIn



## Sentiment

- Glassdoor
- Indeed
- Blind



## Government

- WARN layoffs
- H-1B visa filings
- Government stats (BLS, ILO, Eurostat, etc.)
- Patent data



## Other

- Upwork
- Crunchbase
- Levels.fyi
- Layoffs.fyi
- Parachute list etc.

# Overview

- Individual
- Workforce Dynamics
- Transitions
- Job Postings
- Sentiment
- Layoffs

## Data Dictionary

- Includes the universe of public and private companies
- 24 M companies mapped
- 1.4 B positions held
- 0.8 B unique users
- 1 B job postings
- 36 M company reviews
- 57 K layoff events

# Standardization & Enrichment

## Problems:



Sampling bias



Lags in Reporting



No unique company identifier



Unstandardized job titles



No easy way to compare seniority



No universal skill language

## Solutions:



[Cross sectional weights](#)



[Nowcasting model](#)



[Company mapping](#)



[Occupational taxonomy](#)



[Seniority model](#)



[Skill clustering](#)

# AI Exposure

- Which parts of a job can be performed or enhanced by AI technology?
- Break down every job into activities it performs every day. How many of those could be fully or partially done by AI?
- The idea is not new and has been measured in the past using O\*NET (e.g Brynjolfsson, Mitchell, Rock, 2018, Webb 2019 etc)
- Our approach allows for overtime variation + company / industry specific insights and benchmarking
- AI has an impact on how work gets done or who does it

# Unstructured Work Activities...



## Bristol Myers Squibb

6 yrs 2 mos

### • Vice President, Workforce Experience & Strategies

Full-time

Mar 2022 - Jan 2023 · 11 mos

Princeton, New Jersey, United States

Enhanced enterprise capabilities for engagement, employee experience, culture, team effectiveness, and performance management.

- Collaborated with HRLT members to create an HR strategy aligned with enterprise goals.
- Orchestrated programs to enhance leadership capabilities for onboarding new employees, business knowledge, hybrid work, decision making, and career and performance development.
- Crafted a bespoke quarterly program to engage top senior leaders in strategic problem-solving focused on shortening drug development by 50% and expanding the brand portfolio by 2x.
- Collaborated with business leaders, IT, and facilities to develop and implement a global hybrid work policy, measurement, and leadership guidelines to drive 2x more office collaboration.
- Delivered engagement and culture plans improving results by 5-10% at targeted locations.
- Designed and implemented a new digital onboarding experience for the global workforce, resulting in 20% improvement in the onboarding experience.

Q3 2022: Onboarding Performance Measurement - 15% Improvement

## Dental Hygienist

42 North Dental  | 368 West Broadway, South Boston, MA 02127

From \$50 an hour

Apply now



### Responsibilities:

- Comprehensive documentation and continuous communication/collaboration with the doctor(s).
- Perform accurate assessments according to ADA and AAP guidelines/standards including, but not limited to: caries risk; periodontal condition; oral cancer; radiographic technique and findings.
- Effectively perform appropriate preventive or therapeutic procedure as prescribed by the doctor.
- Educate patients about clinical findings, oral health/overall health, progression of disease, proper home care and recare frequencies.
- Focus on comprehensive patient care.
- Manage schedules.
- Commitment to maintaining dental hygiene licensure and knowledge through continuing education.

# ... into a hierarchical activity taxonomy

## Business Operations

|                        |                                                                      |                                                                |
|------------------------|----------------------------------------------------------------------|----------------------------------------------------------------|
| Business operations    | Enhance client relations and business development                    | Enhance client relations and business growth                   |
|                        | Manage financial operations                                          | Analyze financial data for compliance insights                 |
|                        | Manage financial transactions and reconciliation                     | Direct credit banking financial operations                     |
|                        | Manage financial reporting                                           | Manage financial reporting and contract negotiations           |
|                        | Enhance retail sales                                                 | Manage client documentation for regulatory compliance          |
|                        | Develop marketing strategies for customer engagement                 | Optimize retail sales, merchandising, and customer service     |
| Technical development  | Maintain technical systems and equipment                             | Provide IT support and manage technical solutions              |
|                        |                                                                      | Maintain and troubleshoot IT systems for operational integrity |
|                        | Lead technical projects and develop engineering solutions            | Lead technology solution development and integration           |
|                        | Manage and develop software                                          | Direct engineering projects and provide technical expertise    |
| Customer service       | Optimize retail operations                                           | Develop and integrate software and system solutions            |
|                        | Resolve customer issues and manage vendor relations in retail        | Manage IT security and incident response operations            |
|                        | Provide retail customer service                                      | Lead team innovation and problem-solving initiatives           |
| Safety and maintenance | Maintain and repair industrial and healthcare equipment              | Manage retail operations and customer engagement               |
|                        |                                                                      | Resolve customer issues and manage vendor relations in retail  |
|                        |                                                                      | Provide customer service                                       |
|                        |                                                                      | Provide specialized retail customer service                    |
| Retail operations      | Implement quality control in manufacturing processes                 | Conduct maintenance, safety operations on equipment            |
|                        | Coordinate delivery and inventory management in retail and logistics | Develop methods and equipment, maintain safety standards       |
| Data analysis          | Analyze data to optimize business processes                          | Provide automotive repair and maintenance services             |
|                        |                                                                      | Execute technical and manual tasks in production settings      |
| Human resources        | Build and develop teams in corporate environments                    | Manage quality control and equipment management                |
|                        |                                                                      | Control maintenance and safety in workplaces                   |
| Healthcare             |                                                                      | Lead quality and process improvement in manufacturing          |
|                        |                                                                      | Develop quality control and safety measures                    |
| Programs and services  | Develop and facilitate professional development programs             | Analyze data to inform business decisions                      |
|                        |                                                                      | Develop compliance data and manage regulatory risks            |
| Construction           | Coordinate construction project management and compliance            | Analyze financial data and generate reports                    |
|                        |                                                                      | Manage regulatory compliance, training, and performance        |

Analyze financial data for compliance insights

Enhance sales and customer relations management

# Which activities could AI do?

| K1665_LABEL                                                                 | CLASSIFICATION |
|-----------------------------------------------------------------------------|----------------|
| Collect data, participate in care planning, maintain professional standards | 1              |
| Collect specimens and perform basic laboratory procedures                   | 0              |
| Collect, analyze, and report data in various business operations            | 1              |
| Collect, process, and manage rental payments in property management         | 0              |
| Communicate and ensure compliance in corporate management                   | 1              |
| Communicate effectively and achieve organizational goals                    | 0              |
| Communicates with patients in a healthcare setting                          | 0              |
| Communicating and implementing administrative policies                      | 1              |

# Which activities can be done by AI?

ChatGPT prompt (version 4o)t:

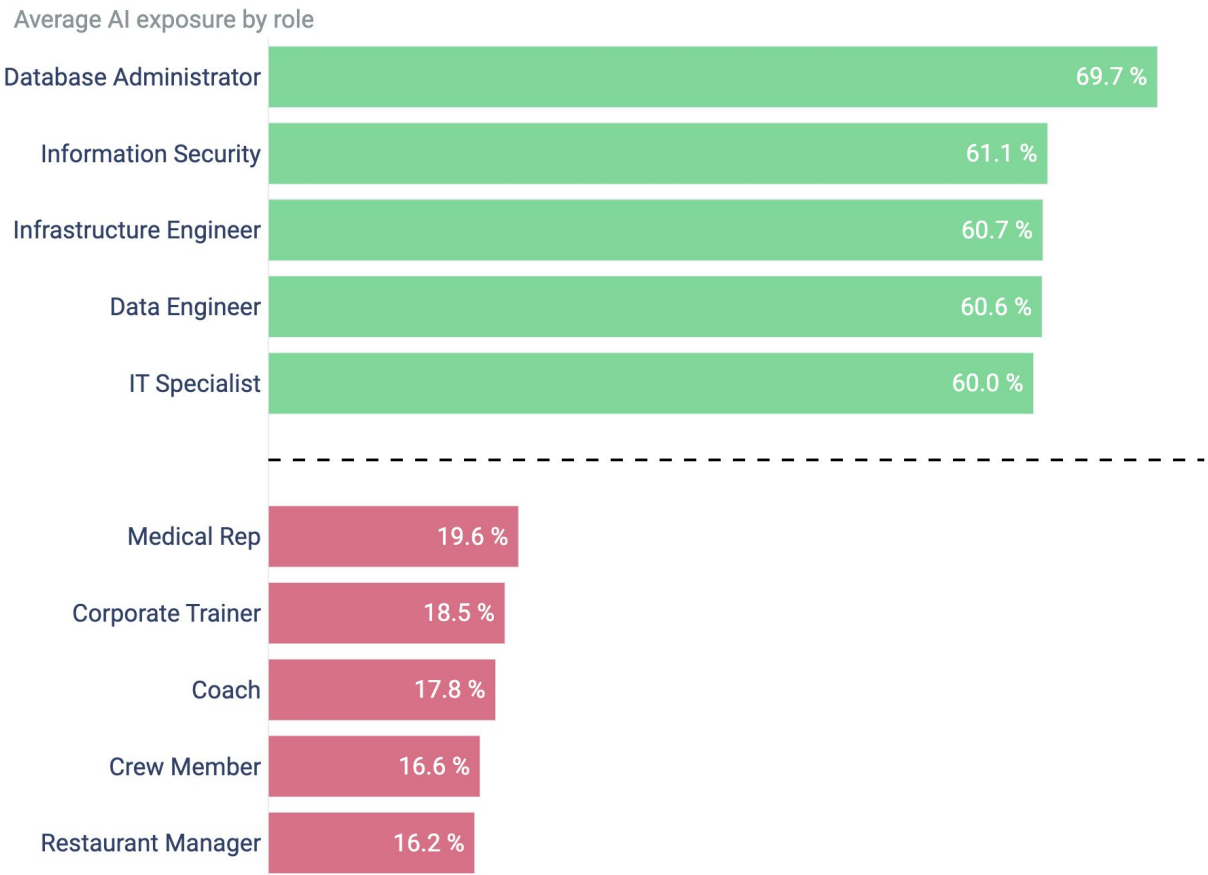
*I am going to give you a list of 500 work activities. I want you to classify them into whether you think you can perform them instead of a human or not (0,1). Please assume you cannot take over team and people management tasks directly at this time and also cannot directly deal with healthcare patients. You also cannot handle manual tasks in construction or food preparation.*

# Adoption

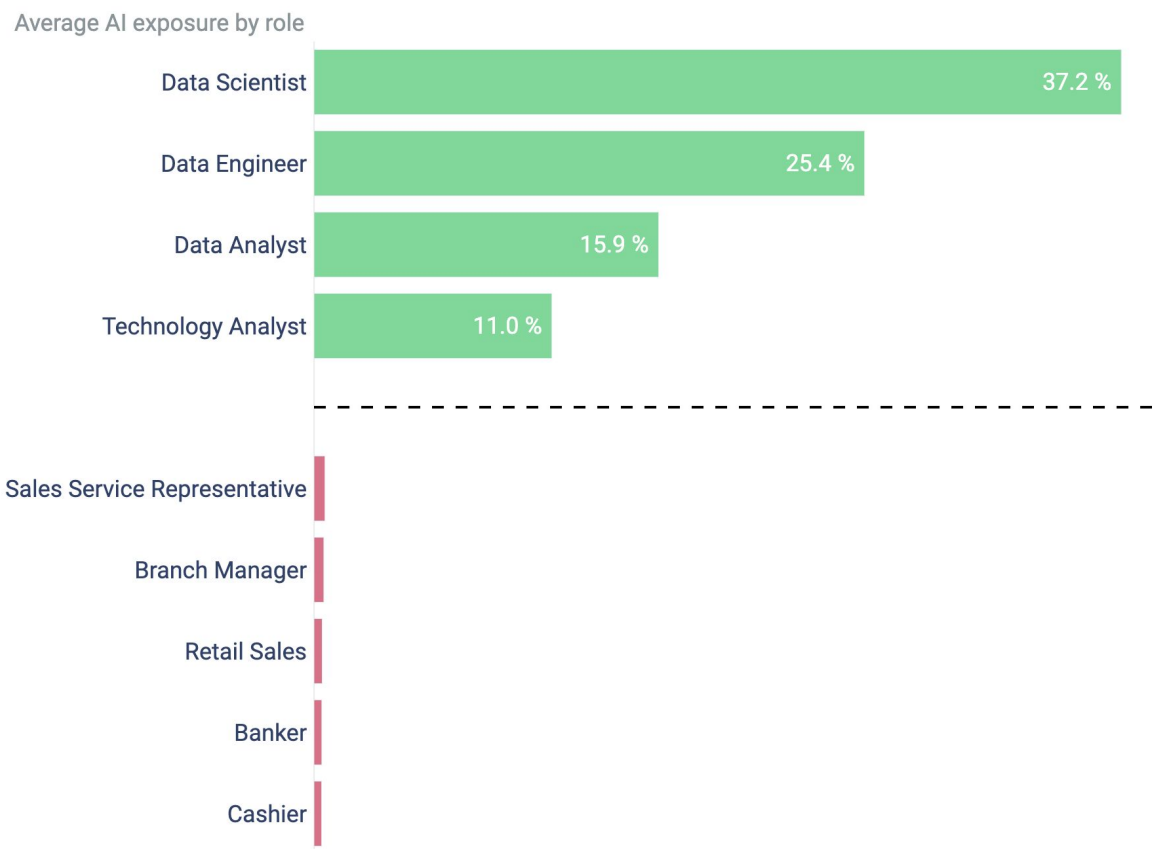
## Keywords used:

machine learning, computer vision, neural networks, ml , chatgpt, aixcoder, copilot, a i lawyer, deepbrain ai, midjourney, chatsonic, deamstudio, character.ai, booth ai, synthesia, bard, h20.ai, a i detection, deepswap, gemini, copyai, chatbots, ai , claude, fireflies, imagen, gemma, llama, vicuna, stable beluga, dall-e, midjourney, jasper, TensorFlow, PyTorch, Keras, Caffe, Theano, MXNet, Scikit-learn, CNTK, ONNX, JAX, RapidMiner, Weka, KNIME, DataRobot, H2O.ai, Alteryx, BigML, SAS Enterprise Miner, NLTK, SpaCy, GPT, BERT, OpenNLP, TextBlob, CoreNLP, Gensim, Hugging Face Transformers, OpenCV, YOLO, Detectron2, VGG, Fastai, Mediapipe, IBM Watson, Google AI, Microsoft Azure AI, AWS AI Services, Salesforce Einstein, Oracle AI, SAP Leonardo, UiPath, Blue Prism, Automation Anywhere, ABBYY FlexiCapture, Kofax RPA, Tableau, Power BI, QlikView, Looker, Sisense, Domo, Google Cloud AI, Azure Machine Learning, Amazon SageMaker, IBM Cloud AI, Oracle Cloud AI, Anaconda, Apache Spark MLlib, MLflow, ChatGPT, Google Dialogflow, Microsoft Bot Framework, Rasa, Intercom, Drift, SAS Visual Data Mining and Machine Learning, RapidMiner Studio, IBM SPSS Modeler, Alteryx Designer, NVIDIA Drive, Waymo, Tesla Autopilot, IBM Watson Health, Google DeepMind Health, PathAI, Darktrace, Cylance, Vectra A

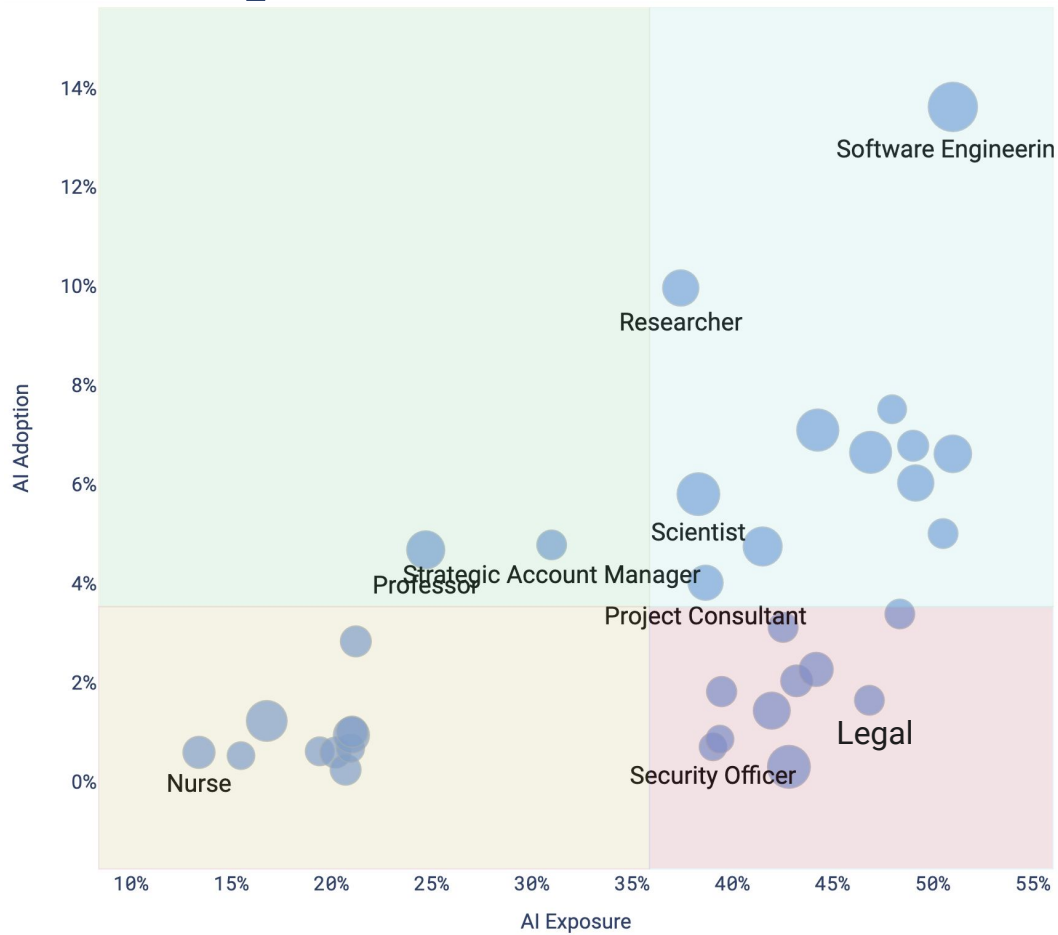
# Tech and finance roles most exposed



# Tech Engineering is leading in AI Adoption



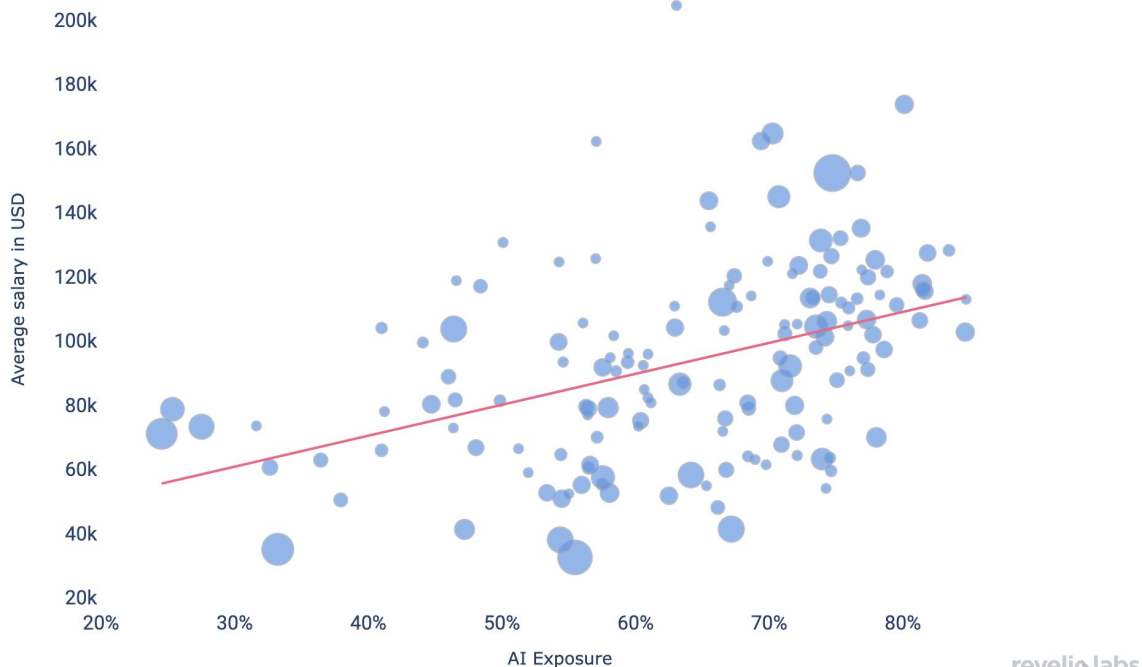
# AI productivity matrix



# AI Exposure correlates positively with salary

## Highly AI exposed roles tend to be high pay

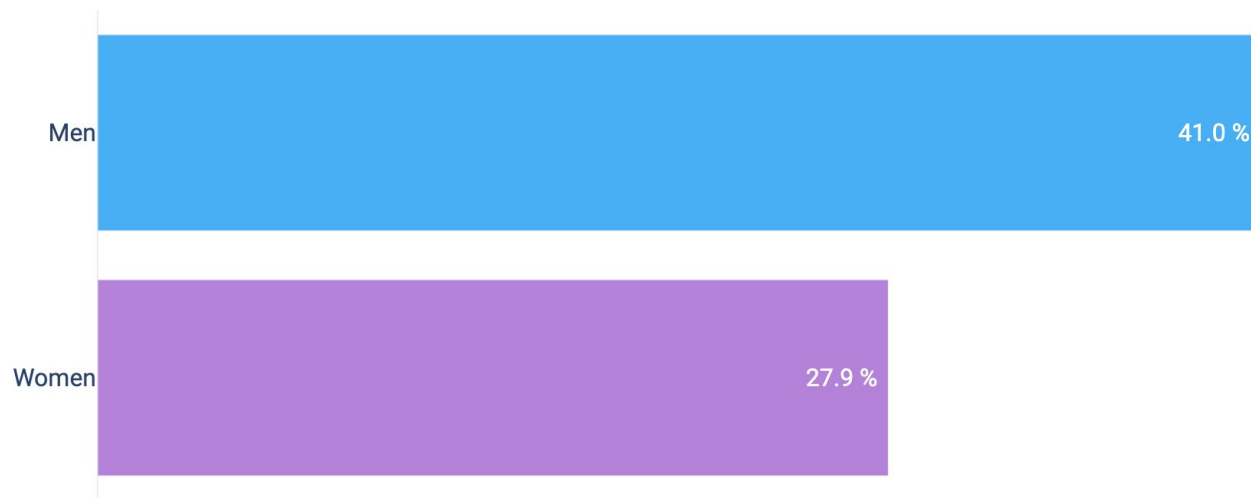
AI exposure rates and salaries by role, bubble size show role size



# Gender Gap

## AI Exposure is actually higher for men

Average AI exposure by gender

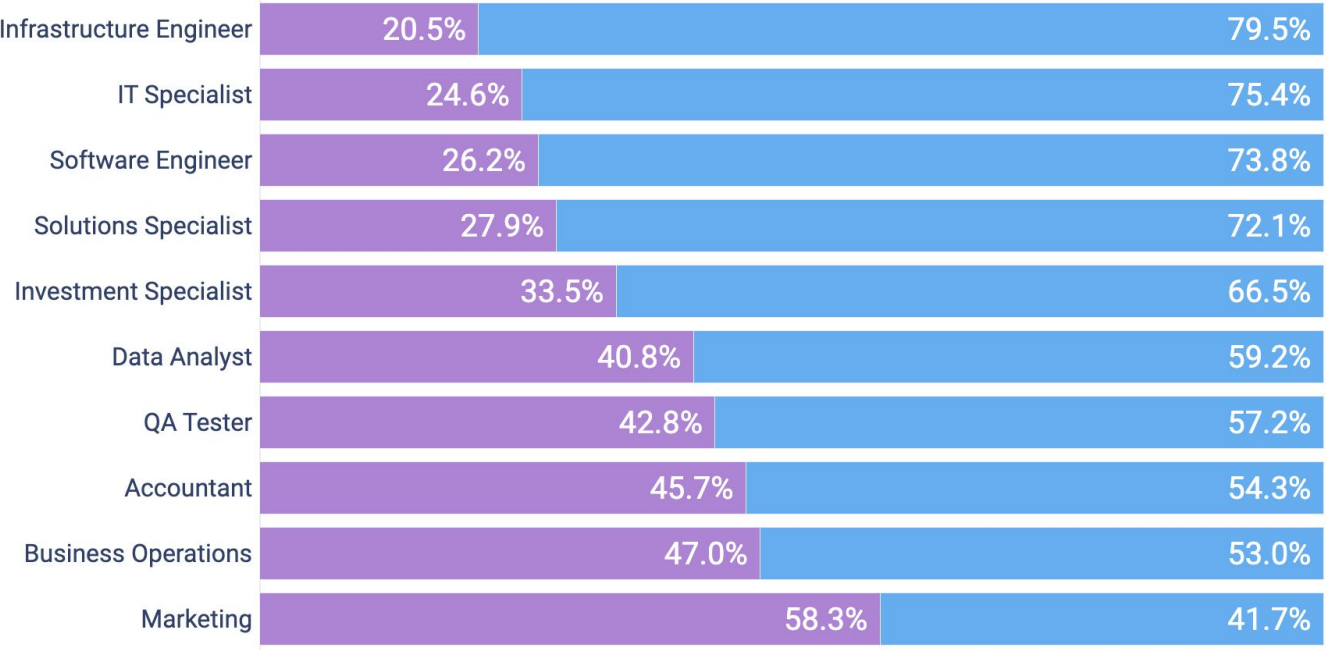


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# Gender Gap

## Women are underrepresented in the most AI exposed roles

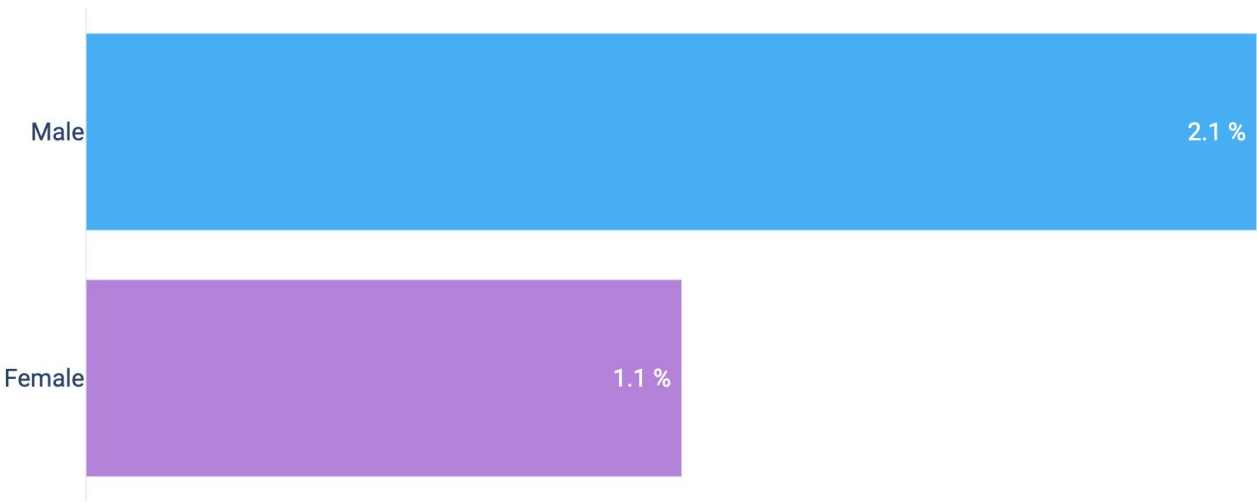
Distribution of Men and Women in top 10 most AI exposed roles



# Gender Gap

## AI Adoption twice as high for men than women

Average AI adoption by gender



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# Gender Gap

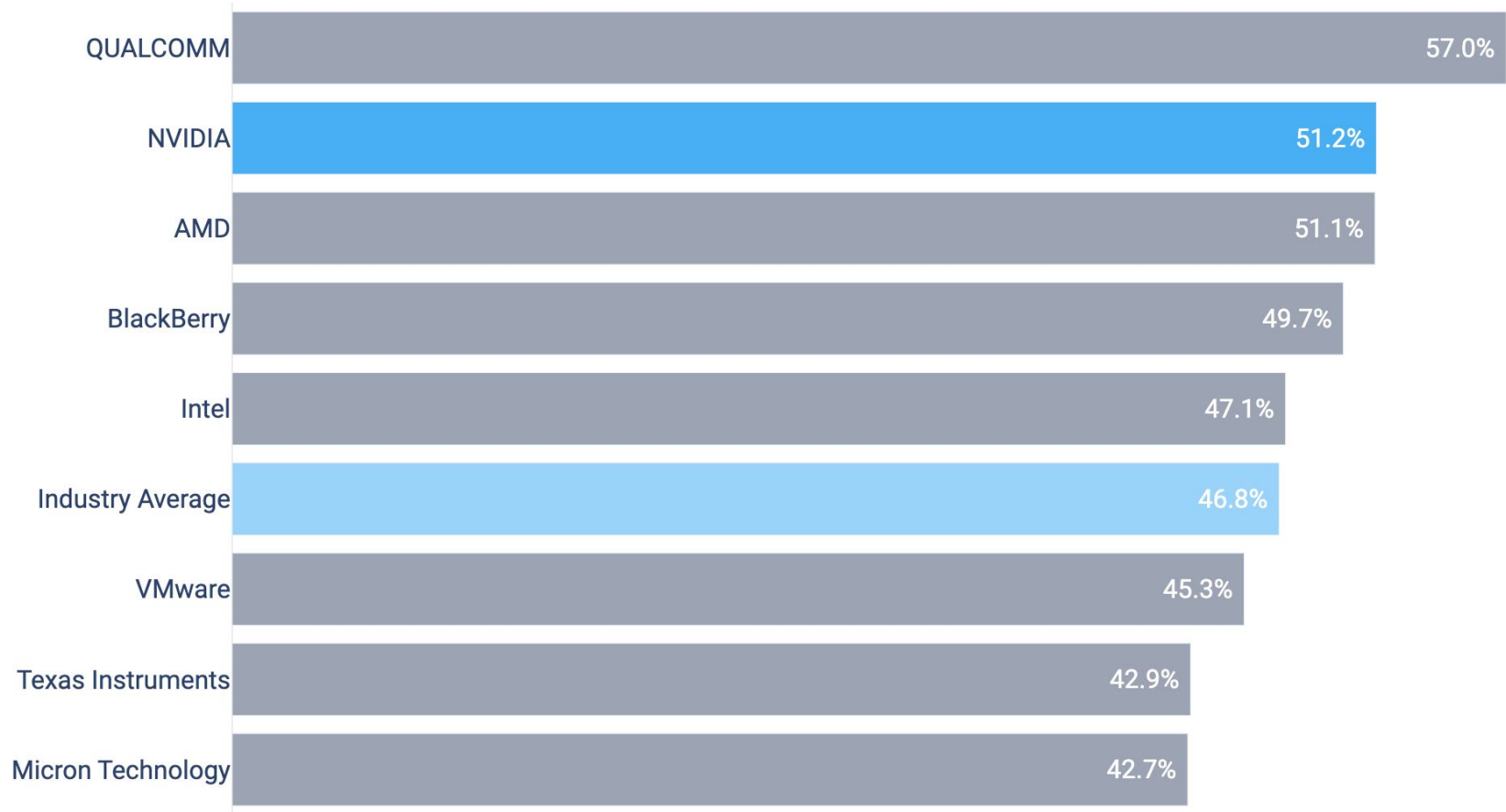
## AI Adoption after controlling for role

Average AI adoption by gender

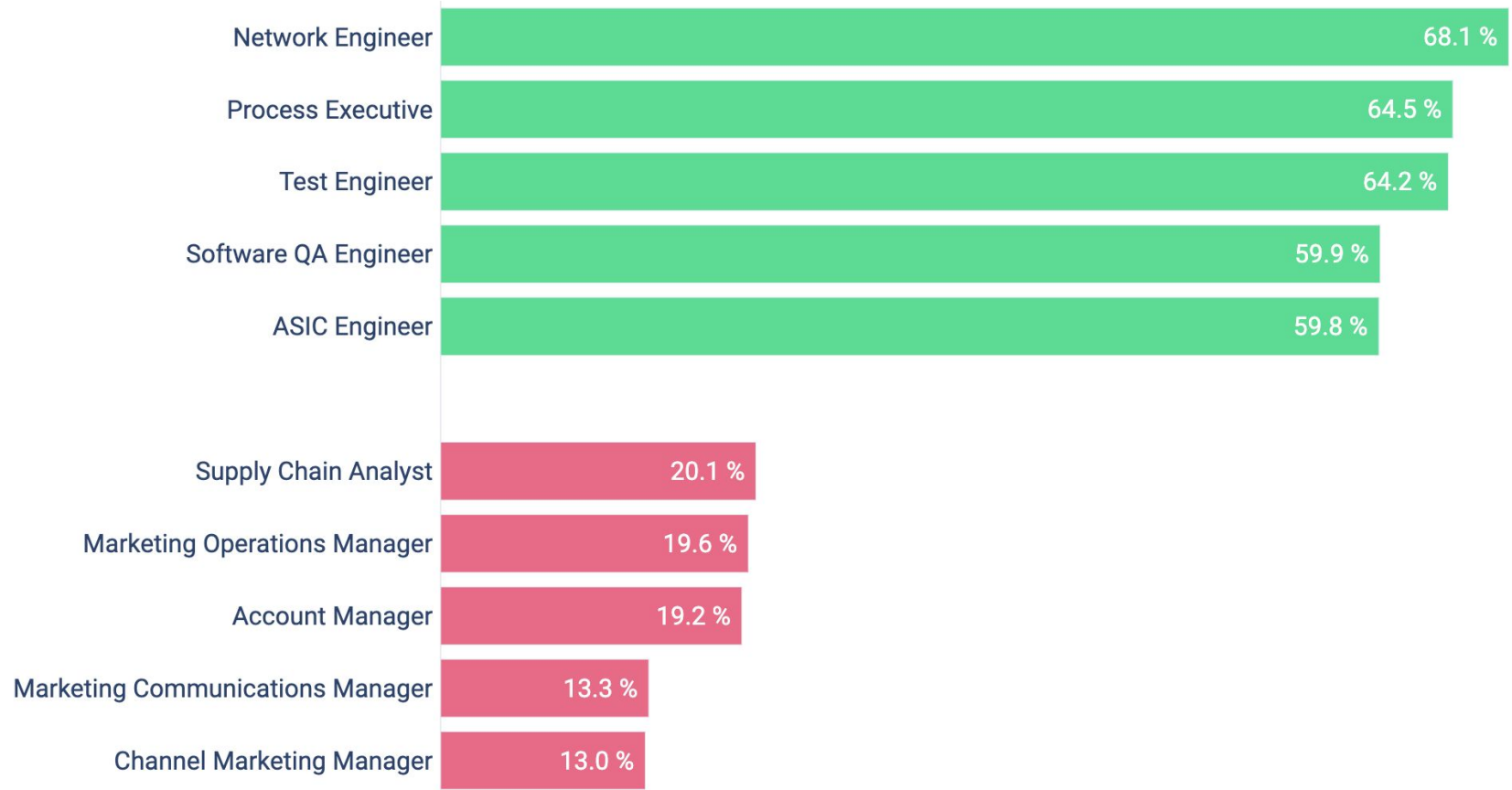


# **Company benchmarking: NVIDIA**

# Among highest AI exposure in industry



# NVIDIA most exposed roles in Software & QA



# NVIDIA's AI productivity matrix

