# The benefits of AI for a business

IMPLEMENTING AI SOLUTIONS IN BUSINESS



**Jacob H. Marquez**
Data Scientist

datacamp

# Four Pillars of Business Value

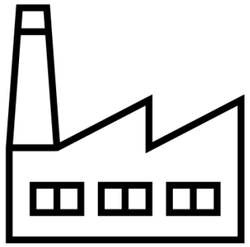


Efficiency

# Four Pillars of Business Value



Efficiency

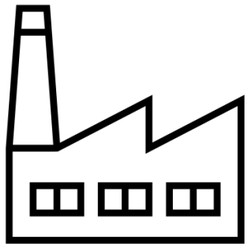


Productivity

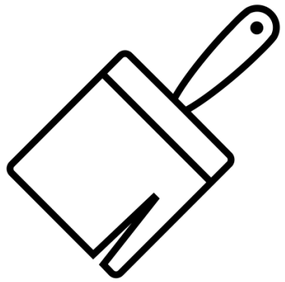
# Four Pillars of Business Value



Efficiency



Productivity

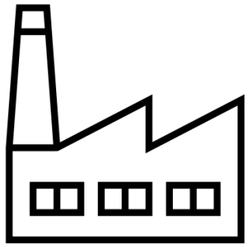


Creativity

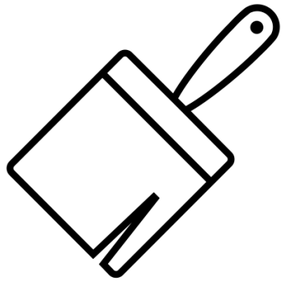
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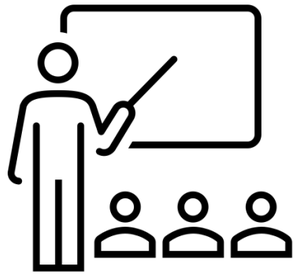
Efficiency



Productivity



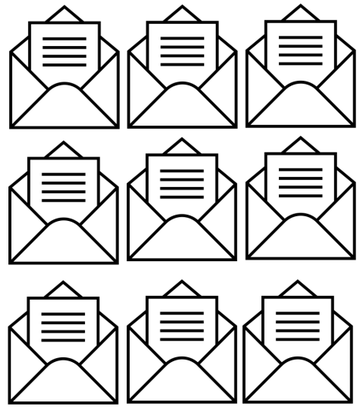
Creativity



Skilling

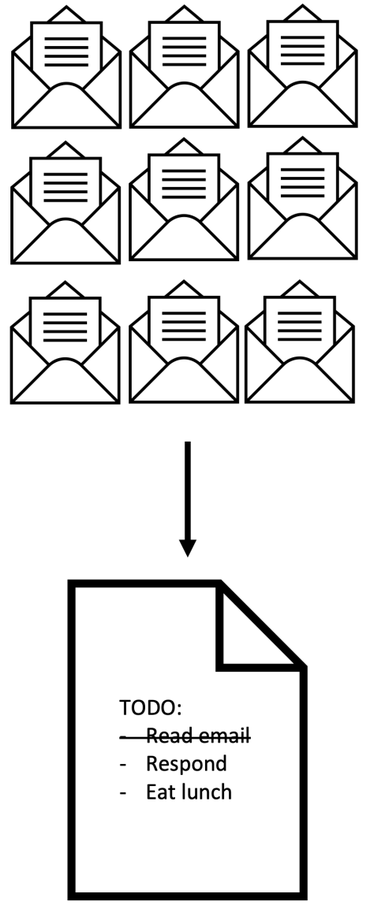
# AI Enables Efficiency

- Automation
- Synthesis of data or information
- Identification of an event
- Optimizing resource allocation



# AI Enables Efficiency

- Easiest area to start
- Automate tedious tasks
- Saves time!



# AI Enables Productivity

- Productivity = increasing outputs
- Higher efficiency helps increase outputs
- More time for high value projects

- **Example:** Automatic sales lead scoring
  - Sales can focus on follow-up calls
- **Example:** Predictive maintenance and prioritized repair
  - Maintenance experts can focus on repair
  - Ensuring output doesn't drop

# AI Enables Productivity

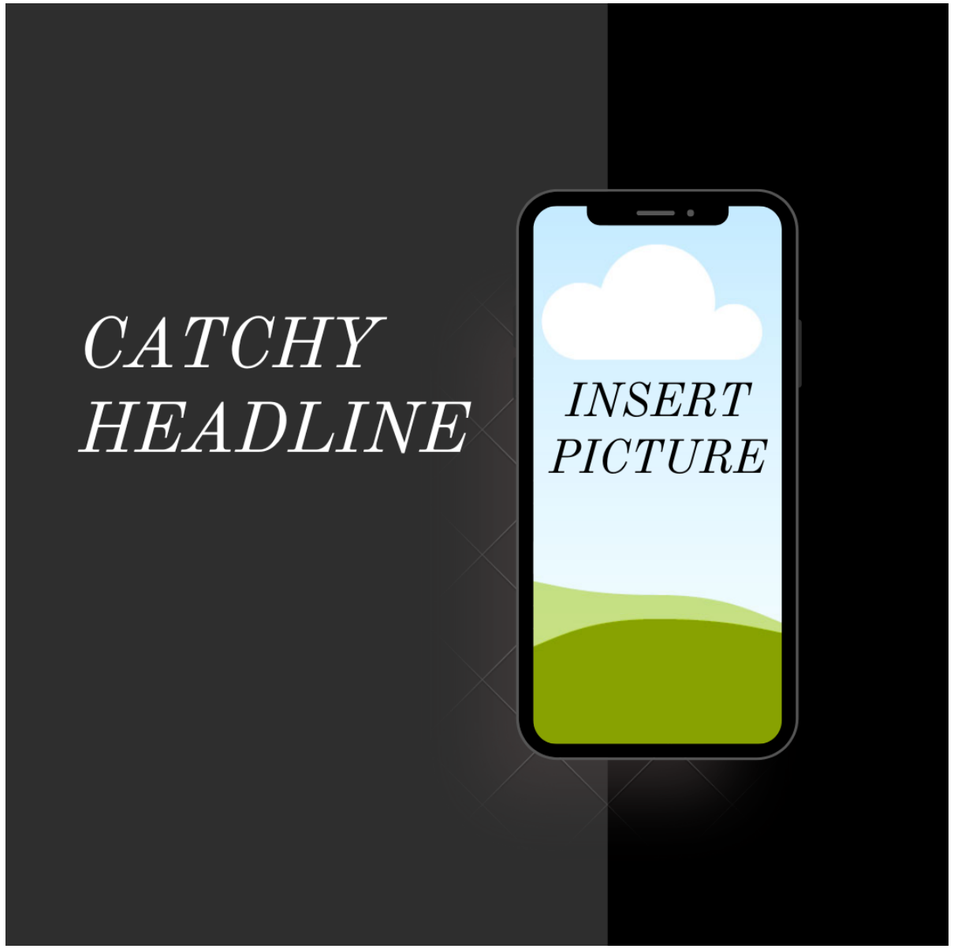
**88%**

more productive and focused on satisfying work

[1] https://github.blog/2022-09-07-research-quantifying-github-copilots-impact-on-developer-productivity-and-happiness/

# AI Unlocks Creativity!

- Creativity is a limitation of AI
- People can use AI to foster creativity
- Continually evolving



# AI Unlocks Creativity!

- Remove upfront tasks
- Faster iteration!
- More creative space



# Skilling: Direct

## Direct

- Part of educational process
- Personalized learning and feedback
- **Example:** AI knows user's strengths and weaknesses
  - Personalized learning paths



# Skilling: Indirect

**Indirect**

- Usage results in learning
- **Example:** generative AI to build a website
- Upskilling to leverage AI



# Let's practice!

IMPLEMENTING AI SOLUTIONS IN BUSINESS

# Limitations of AI

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# Limitations of AI

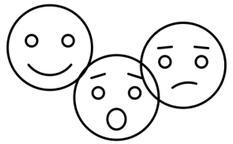


Understanding

# Limitations of AI



Understanding

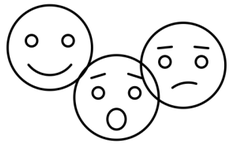


Empathy

# Limitations of AI



Understanding



Empathy

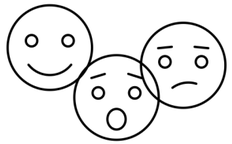


Ethics

# Limitations of AI



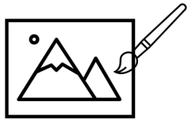
Understanding



Empathy



Ethics

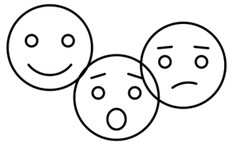


Creativity

# Limitations of AI



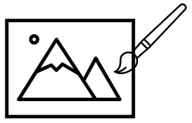
Understanding



Empathy



Ethics



Creativity

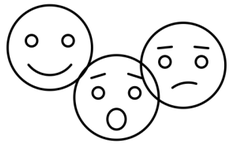


Transparency

# Limitations of AI



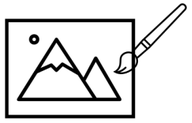
Understanding



Empathy



Ethics



Creativity



Transparency



Dexterity

# Limitations of AI



Understanding



Empathy



Ethics



Creativity



Transparency



Dexterity

- AI *appears* to have an understanding, but
- Based on **probabilities**
- **Example:** opinion on business strategy
- Can't comprehend **full** context
- No common sense, just know what's common
- May lead to undesired response

# Limitations of AI



Understanding



Empathy



Ethics



Creativity



Transparency



Dexterity



# Limitations of AI



Understanding



Empathy



Ethics



Creativity



Transparency



Dexterity



I am happy.

# Limitations of AI



Understanding



Empathy



Ethics



Creativity



Transparency



Dexterity

- Judgment, ethics, trade-offs are difficult
- Can't make an overly complex decision

# Limitations of AI



Understanding



Empathy



Ethics



Creativity



Transparency



Dexterity

[1] https://www.microsoft.com/en-us/worklab/experimenting-with-ai-as-a-creative-collaborator

# Limitations of AI

- Understanding
- Empathy
- Ethics
- Creativity
- Transparency
- Dexterity



*Art by Jason Allen & Midjourney*

- Requires human prompting

[1] https://www.microsoft.com/en-us/worklab/experimenting-with-ai-as-a-creative-collaborator

# Limitations of AI



Understanding



Empathy



Ethics



Creativity



Transparency



Dexterity

- Black box
- Challenge to understand and explain
- Build explainability features into the AI
- **Example:** descriptions explaining AI results

# Limitations of AI



Understanding



Empathy



Ethics



Creativity



Transparency



Dexterity



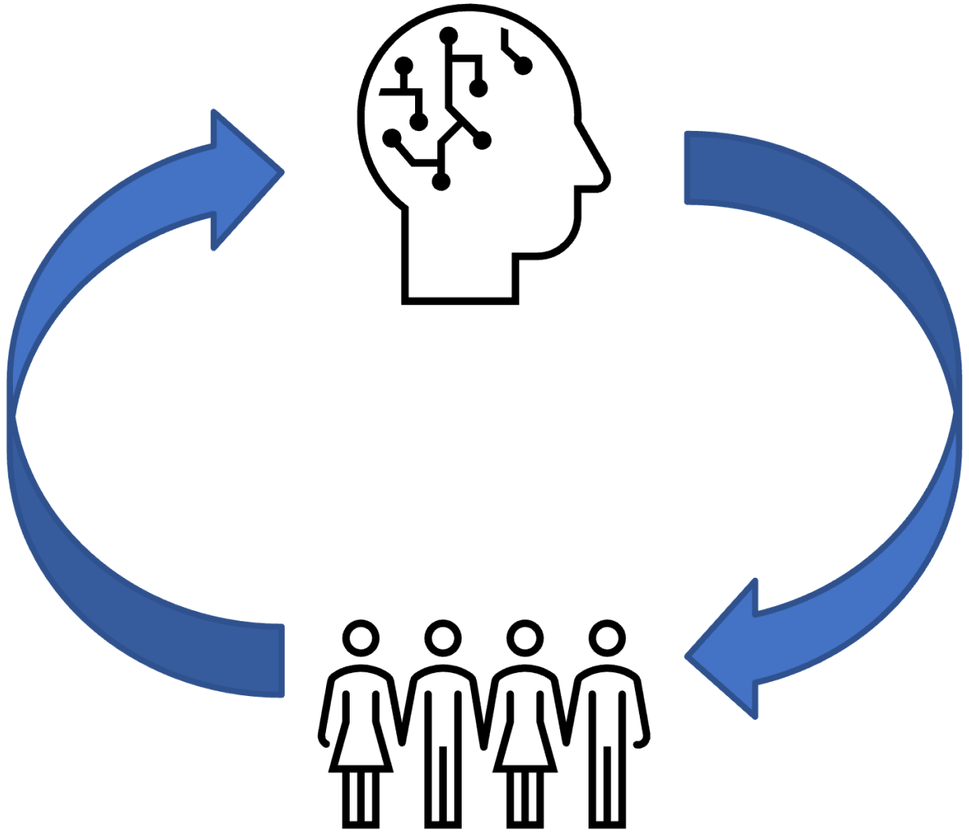
[1] Image: Boston Dynamics robot dancing

# Causes for limitations

- Not enough data
- Incomplete or biased data
- Inability to encode complexity

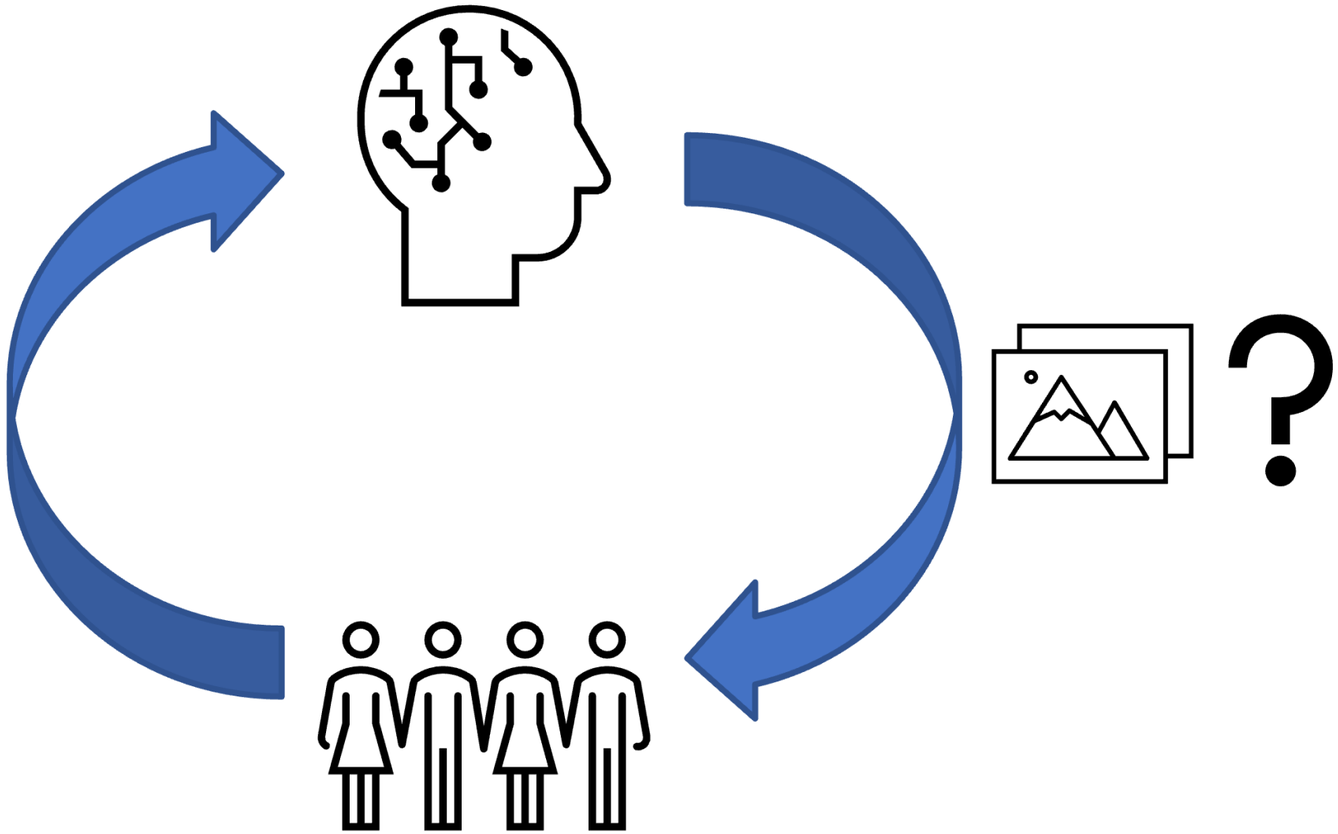


# Human in the loop

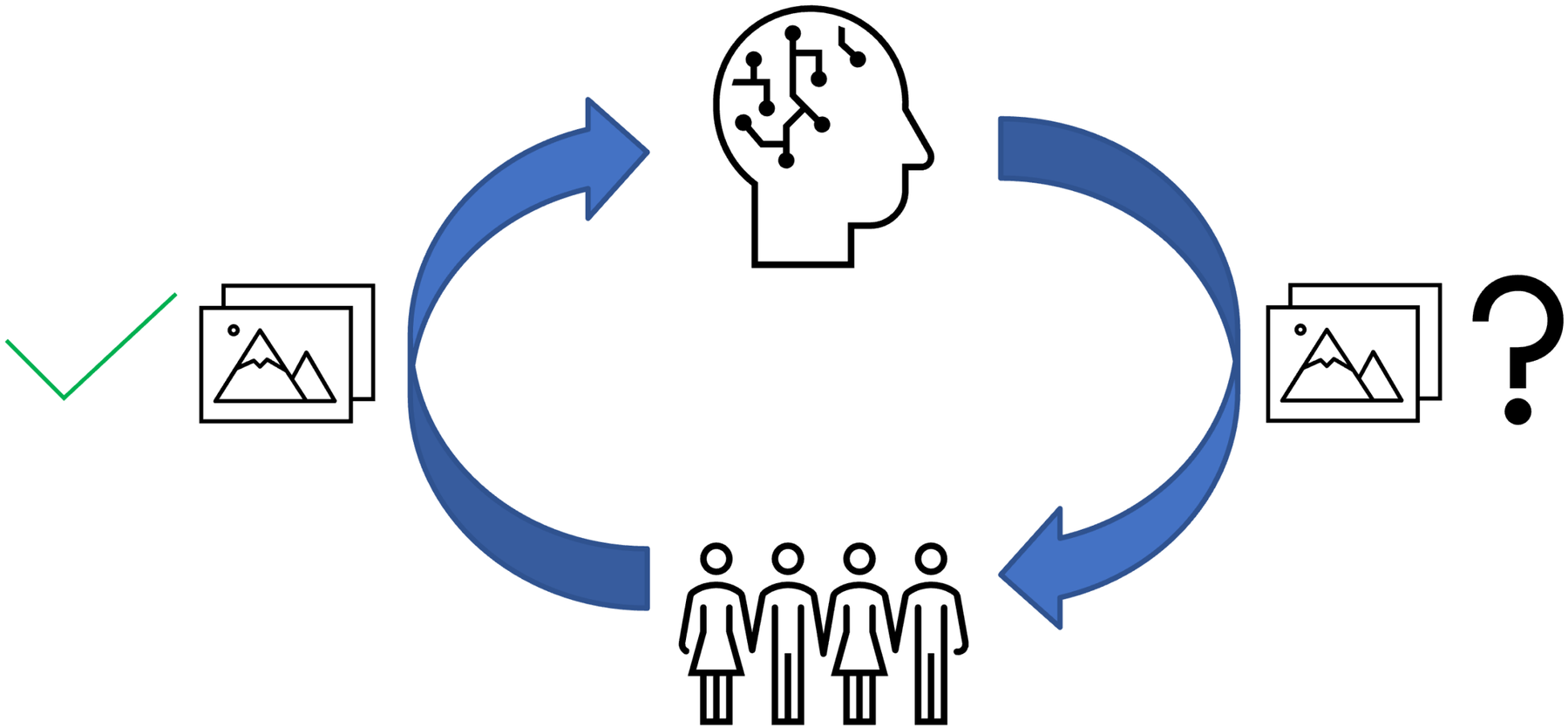


[1] https://hai.stanford.edu/news/humans-loop-design-interactive-ai-systems

# Human in the loop



# Human in the loop



# Let's practice!

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# Use cases for AI

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# Business areas for AI

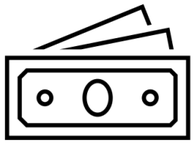


Marketing

# Business areas for AI



Marketing

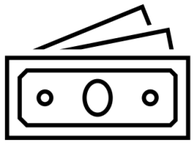


Sales

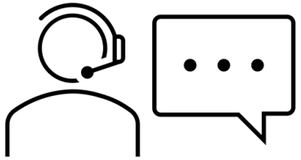
# Business areas for AI



Marketing



Sales

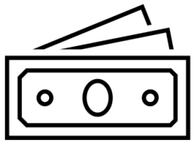


Customer Service

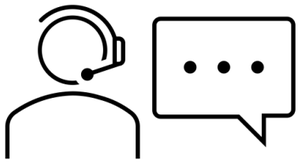
# Business areas for AI



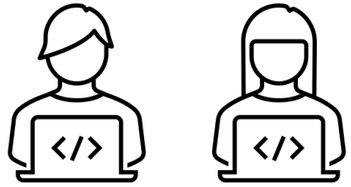
Marketing



Sales



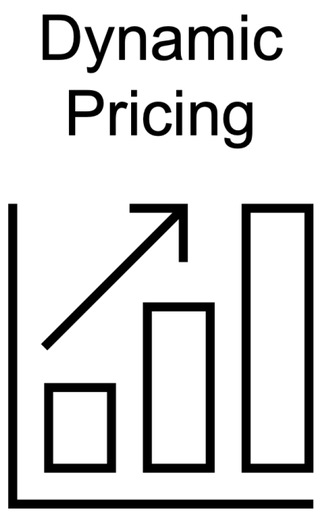
Customer Service



Engineering

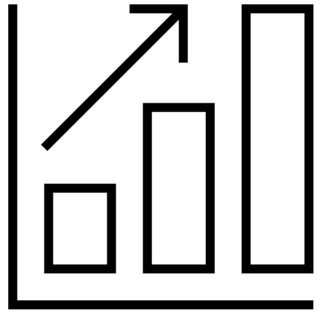
- Automate Processes
- Help customers solve problems
- Detect fraud
- Analyze text
- and more...

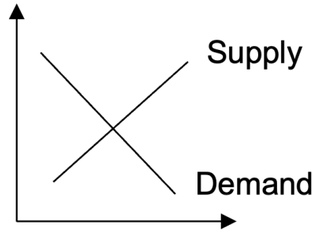
# Marketing: Dynamic Pricing



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Dynamic Pricing

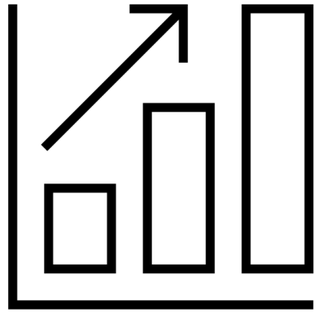


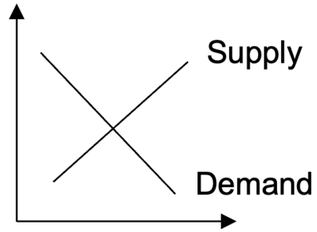



Market Demand

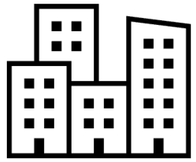
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Dynamic Pricing





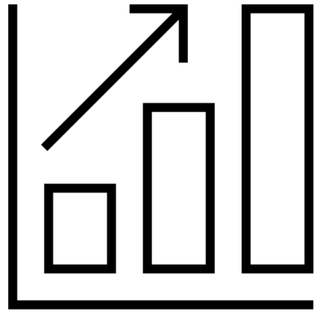

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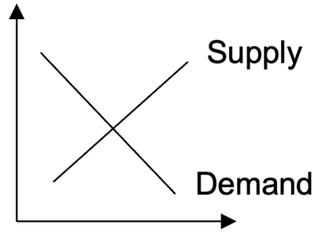


Competitor Pricing

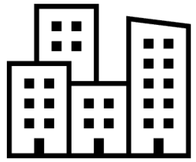
# Marketing: Dynamic Pricing

Dynamic Pricing






Market Demand



Competitor Pricing



Customer Data

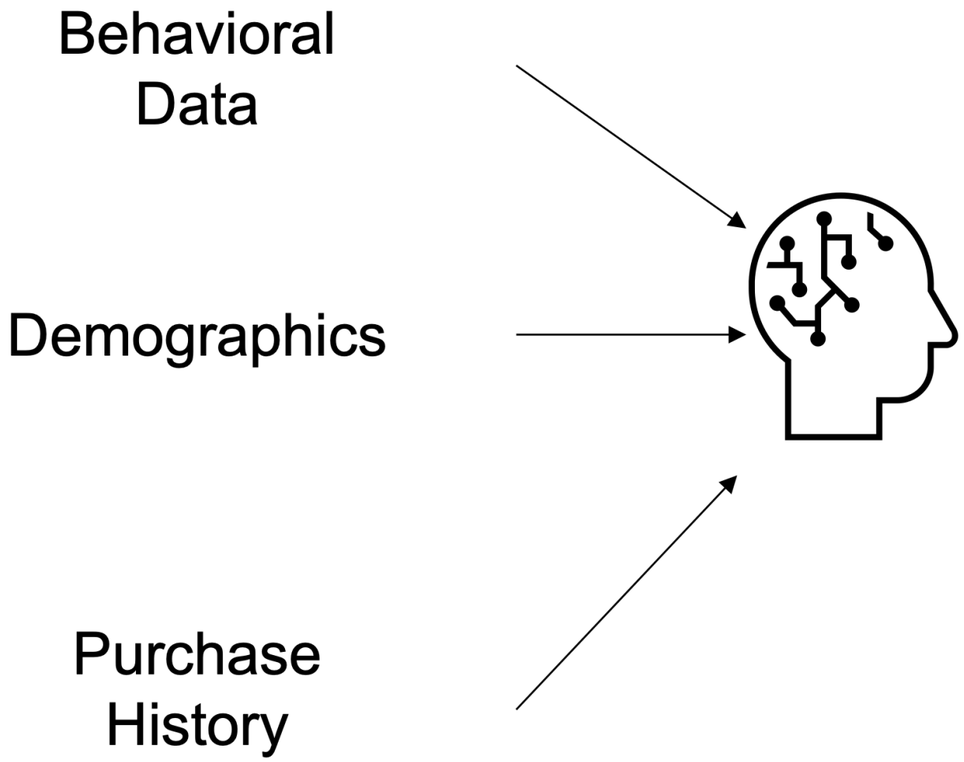
# Marketing: Segmentation & Targeting

Behavioral Data

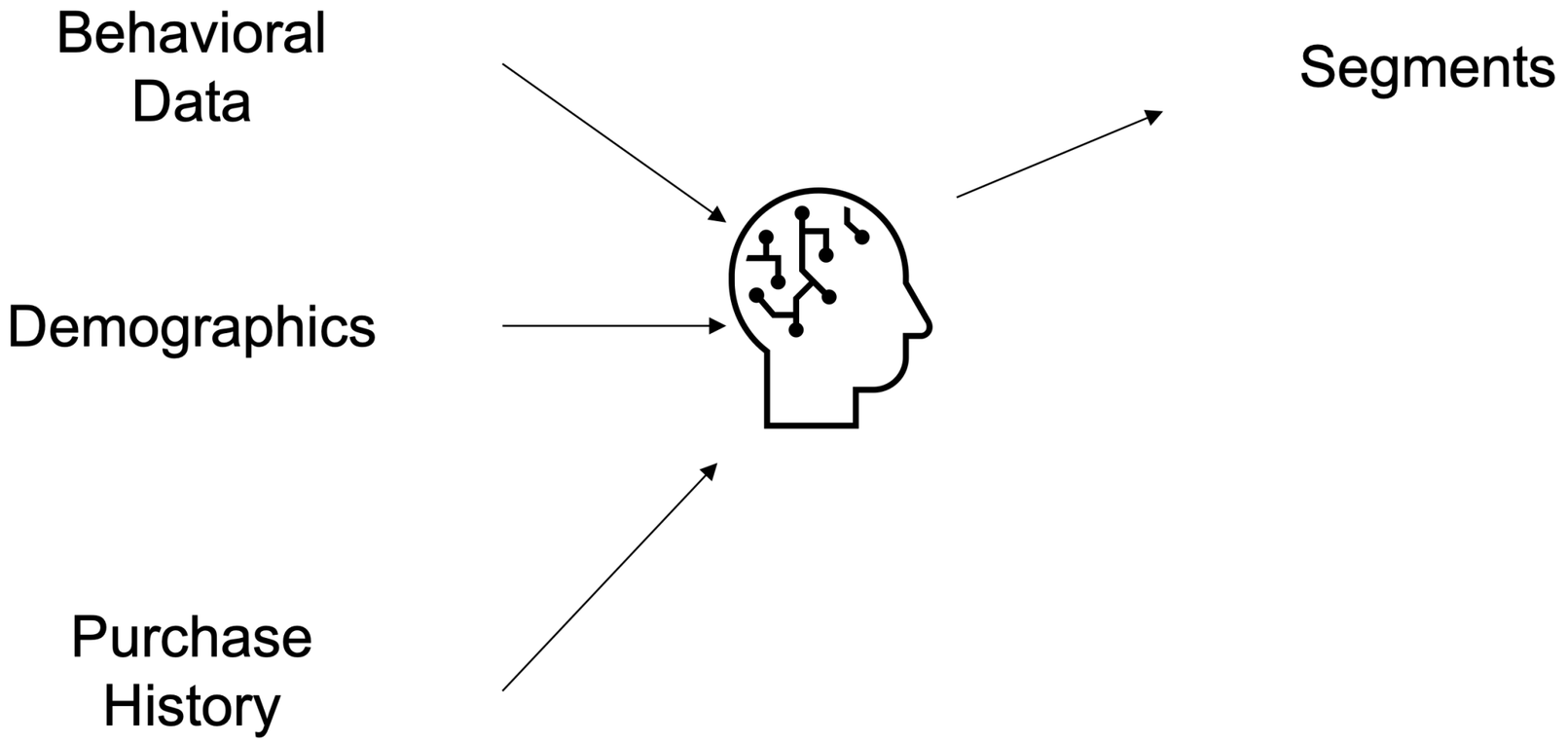
Demographics

Purchase History

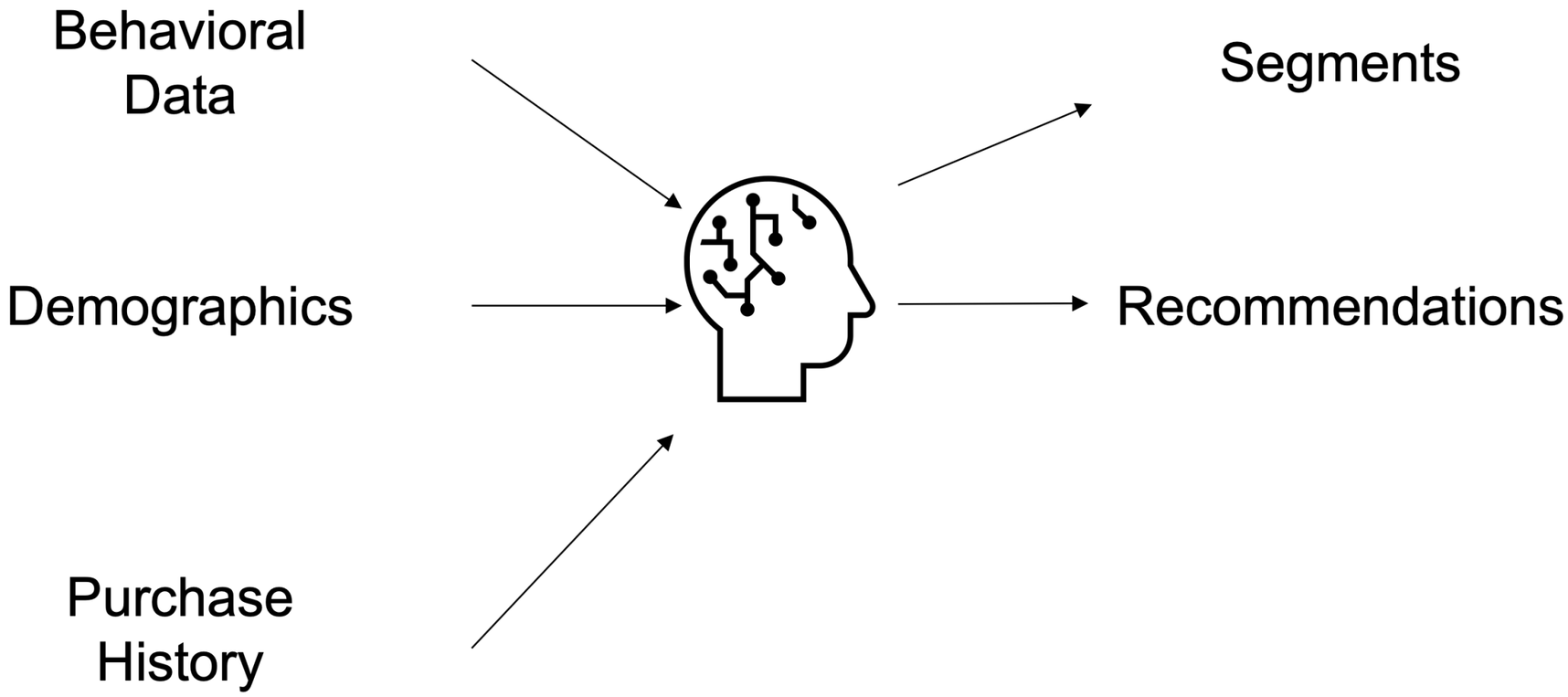
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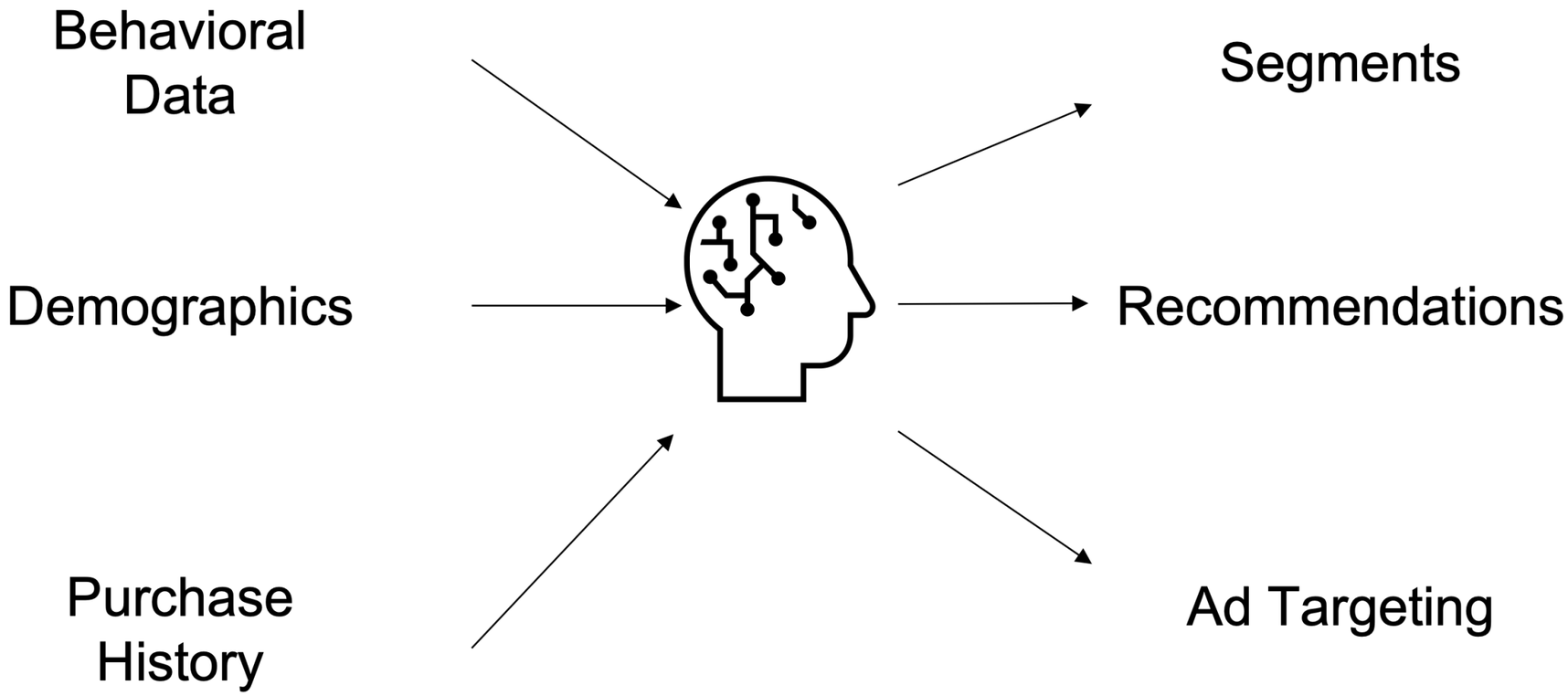
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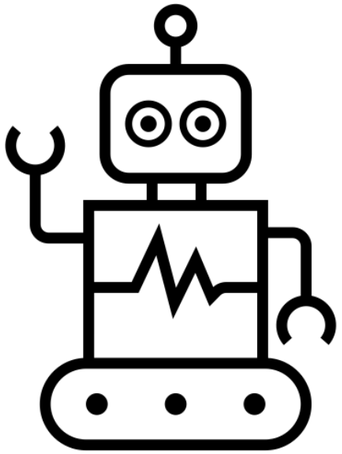
# Marketing: Content



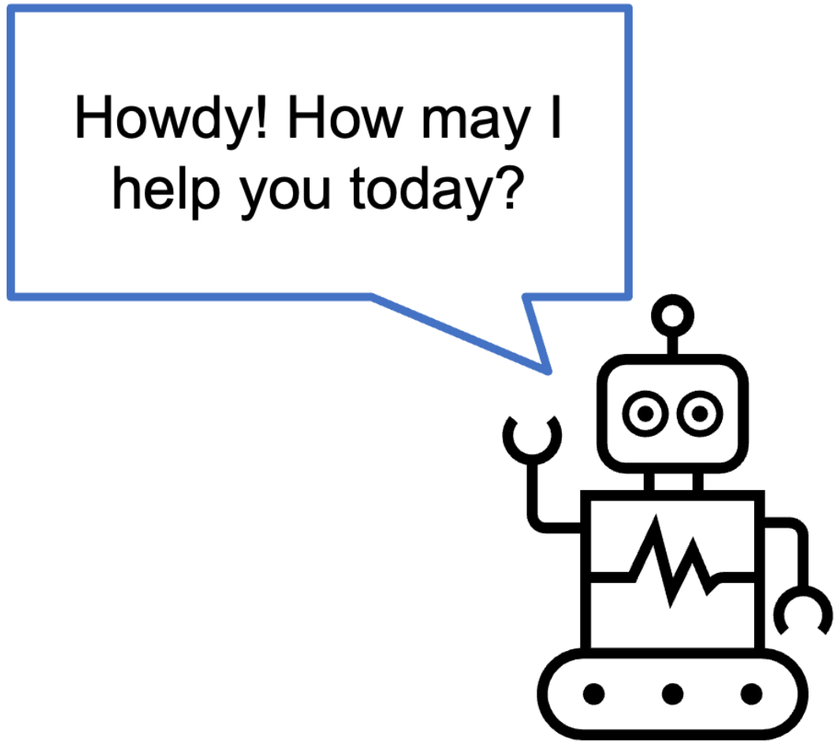



[1] https://www.forbes.com/sites/forbescommunicationscouncil/2023/04/03/generative-ai-in-marketing-5-use-cases

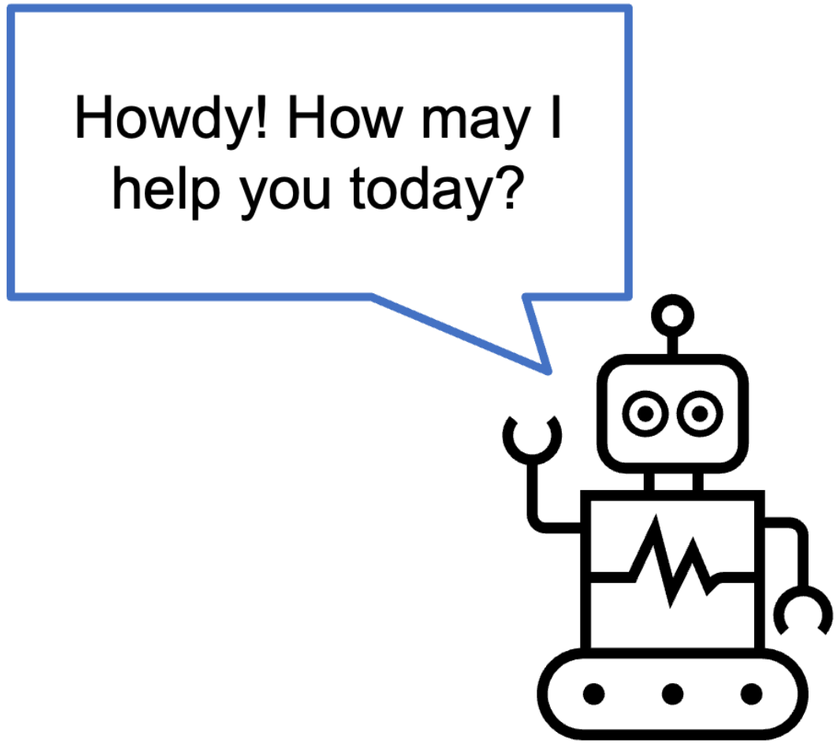
# Customer Service: Chatbots



# Customer Service: Chatbots



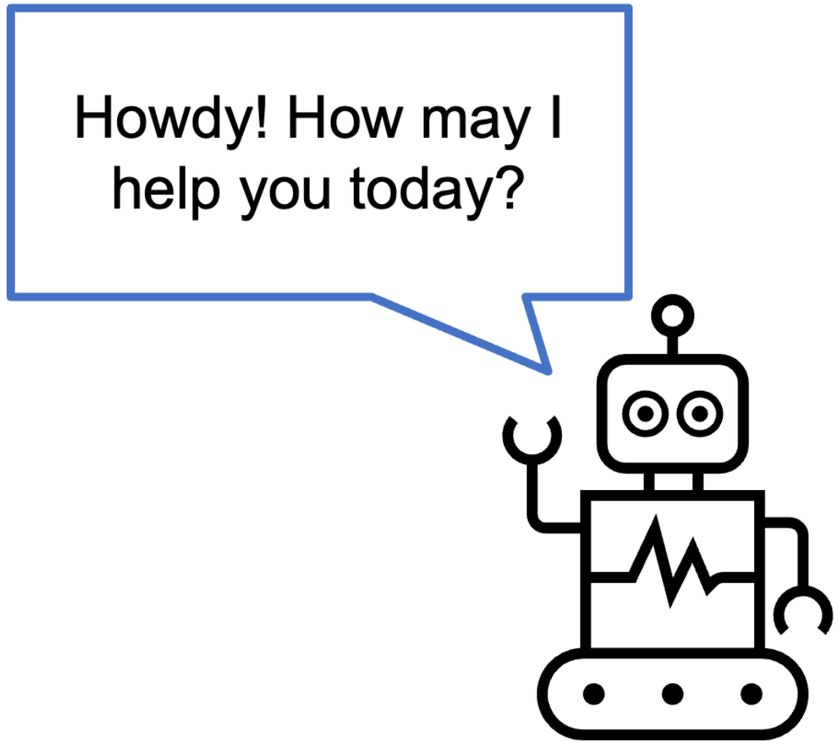
# Customer Service: Chatbots




- Zendesk
- Microsoft
- Google
- Einstein GPT
- Hubspot
- Intercom
- Drift

[1] https://www.zendesk.com/service/messaging/chatbot/#3

# Customer Service: Chatbots




**Benefits**

- 24/7 interaction
- Instant responses
- First response to customer questions

**Results**

- Reduced wait times
- Higher revenue
- Avoided costs

# Engineering: Cybersecurity



Cybersecurity

# Engineering: System Health



Cybersecurity

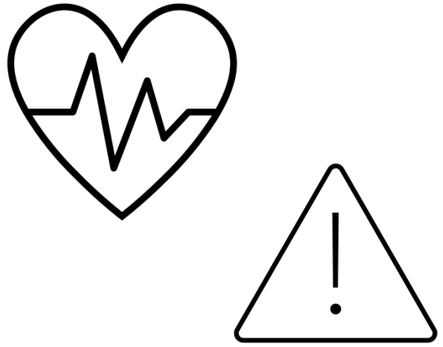


Monitor & Alerts

# Engineering: System Health



Cybersecurity

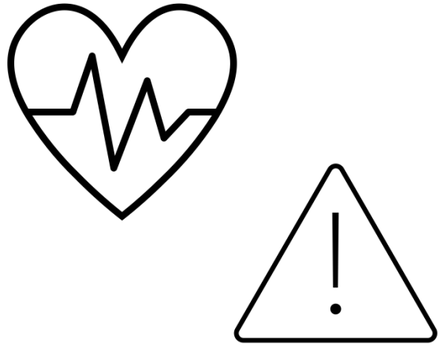


Monitor & Alerts

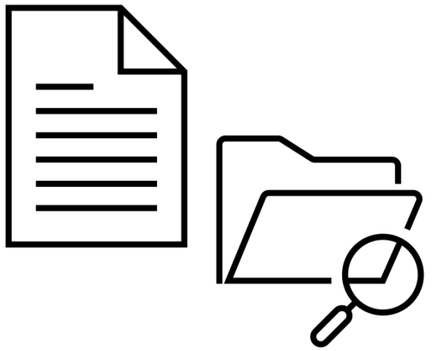
# Engineering: Documentation



Cybersecurity



Monitor & Alerts



Documentation

# Let's practice!

IMPLEMENTING AI SOLUTIONS IN BUSINESS

# Identify a use case for AI

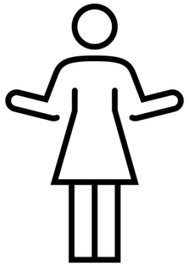
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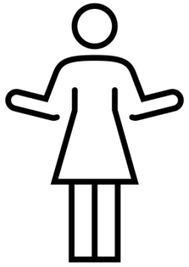
datacamp

# Five principles of a good use case

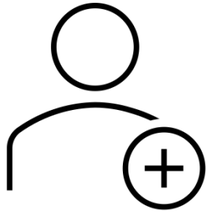


Why?

# Five principles of a good use case

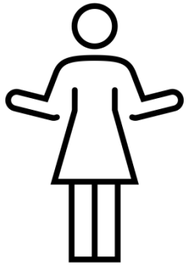


Why?

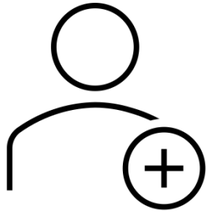


Augment
not replace

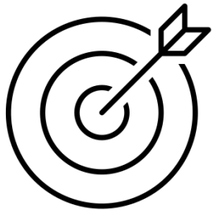
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Why?

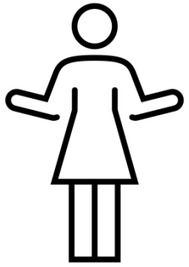


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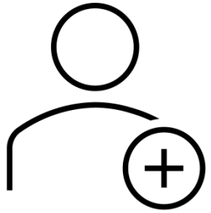


Alignment with business goals

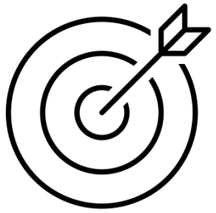
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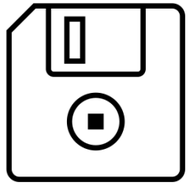
Why?



Augment not replace

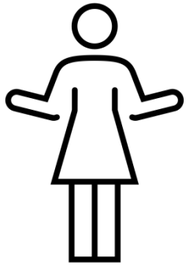


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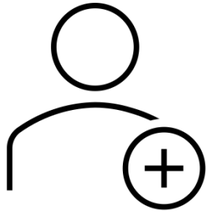


Where is there data?

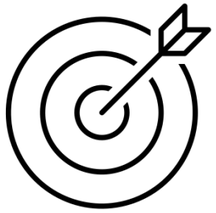
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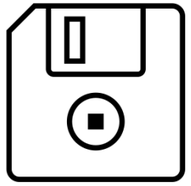
Why?



Augment not replace



Alignment with business goals



Where is there data?



Deconstruct into small tasks

# WHY?

# WHY?

Why this problem?

# WHY?

Why this problem?

Why will it improve the user experience?

# WHY?

Why this problem?

Why will it improve the user experience?

Why is it important for the business?

# WHY?

Why this problem?

Why will it improve the user experience?

Why is it important for the business?

Why now?

# Augment not replace

- AI designed to work with humans
- Assist and enhance abilities



# Alignment with business goals

- Tie use case to a business metric
- Support organization toward its vision
- Evaluate costs and risks



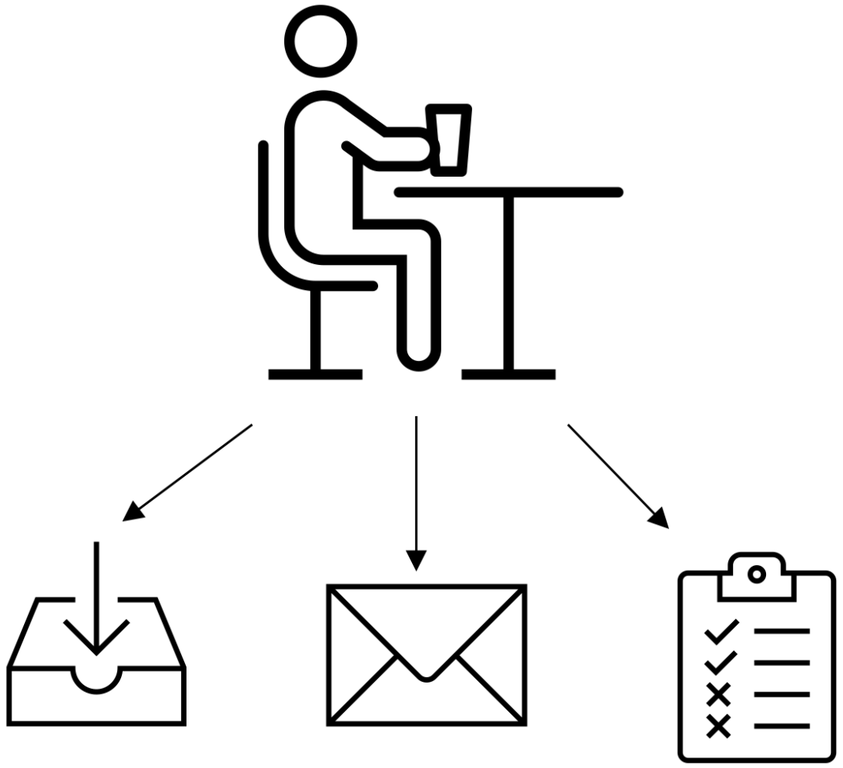
# Data, data, data



# Deconstruct into small tasks



# Deconstruct into small tasks



**Focus on**

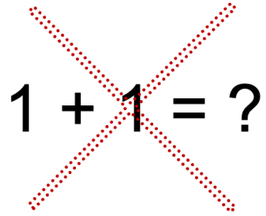
- Well-defined
- Prediction
- Scoring
- Labeling
- Summarizing
- Content generation

# Don't use AI for this



# Don't use AI for this



# Don't use AI for this

splelchcek

1 + 1 = ?



# Don't use AI for this

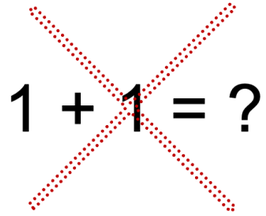
splelchcek

1 + 1 = ?



# Don't use AI for this





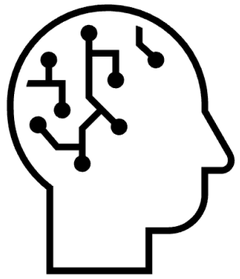

**Areas to avoid**

- Ethics and judgments
- Personal information
- High-emotion situations

# Questions to identify a use case

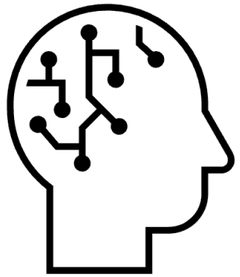
- How are competitors using AI?
- What about partners in adjacent, or unrelated, industries?
- What are some areas of the business that are in clear need of support?
- Where would there be funding to support a small scale project? Or a full scale implementation?

# Start small with a POC

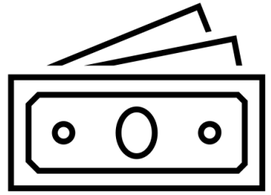


Small scale
POC

# Start small with a POC

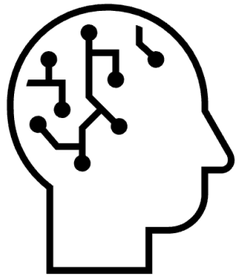


Small scale
POC

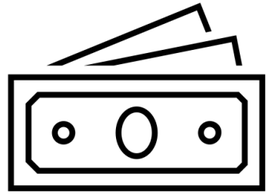


Small scale
impact

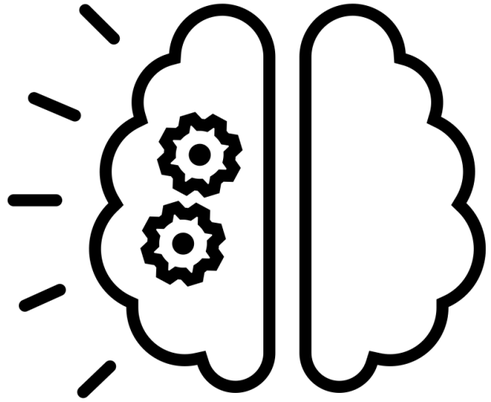
# Start small with a POC



Small scale
POC



Small scale
impact



BIG
LEARNINGS

# Small-scale impact but big ROI

- POC tied to high ROI potential
- Most likely to be valuable for the business
- ROI can be measured in multiple ways

# Let's practice!

IMPLEMENTING AI SOLUTIONS IN BUSINESS