

AI has captured the attention of the world—for better or worse. Hype, noise, and fear are dominating the headlines, with a huge focus on ChatGPT and its competitors. Today, most of us are being asked to do something with AI; and if not today, then tomorrow. Quite simply, AI is going to touch on every part of our jobs soon enough.

However, most of us aren't AI researchers. It's not our specialty.

That's ok! We're asked to do things we aren't specialists in every day. We can leverage the skills we've developed to accelerate our learning of AI. The gap isn't nearly as large as it may seem at first.

In this talk, we will provide a broad overview of the field, through the lens of five areas where AI is commonly used:

- * Making sense of the physical world*
- * Structuring unstructured/unformatted data to be machinable*
- * Predicting trends and group membership*
- * Building plans and strategies*
- * Generating media for human consumption*

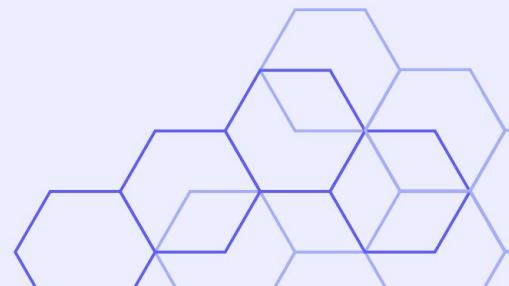
For each application area, we'll be looking at the underlying subfields of AI that seek to address it, discuss the common pitfalls and best practices in that space, and introduce tools that you can use to solve those

How To Get Started With AI: Moving Beyond ChatGPT



- Why would you move beyond ChatGPT / LLMs?
- What can Non-LLM AI techniques do?
- Where do I get started?

Jordan Thayer
AI Strategist



I'd Like to Start Off With a Little Data



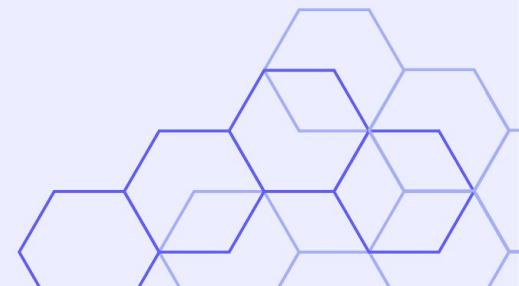
How Many Of You Are Using AI At Work?

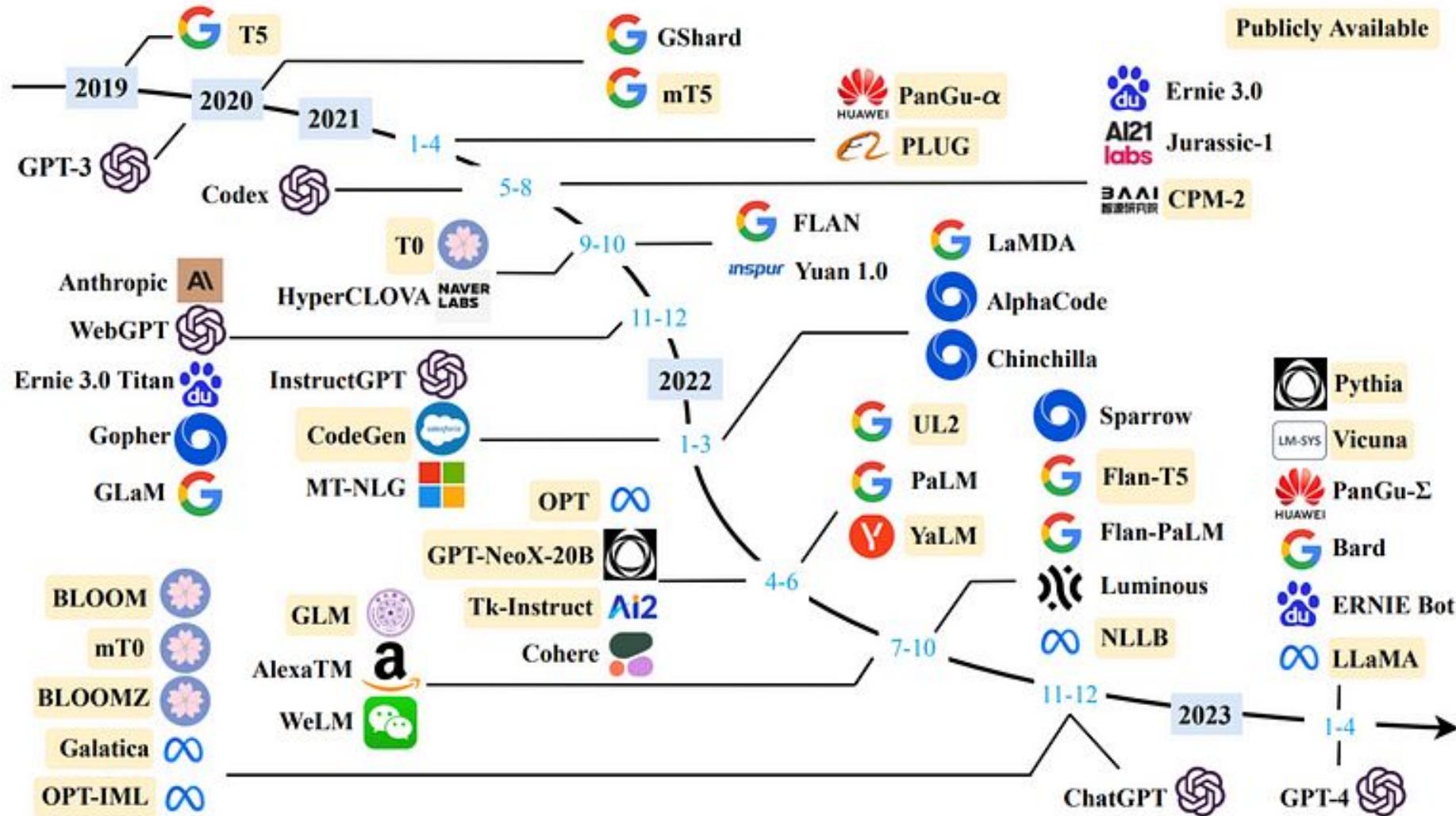


Are You More Excited About AI Today than 5 Years Ago?

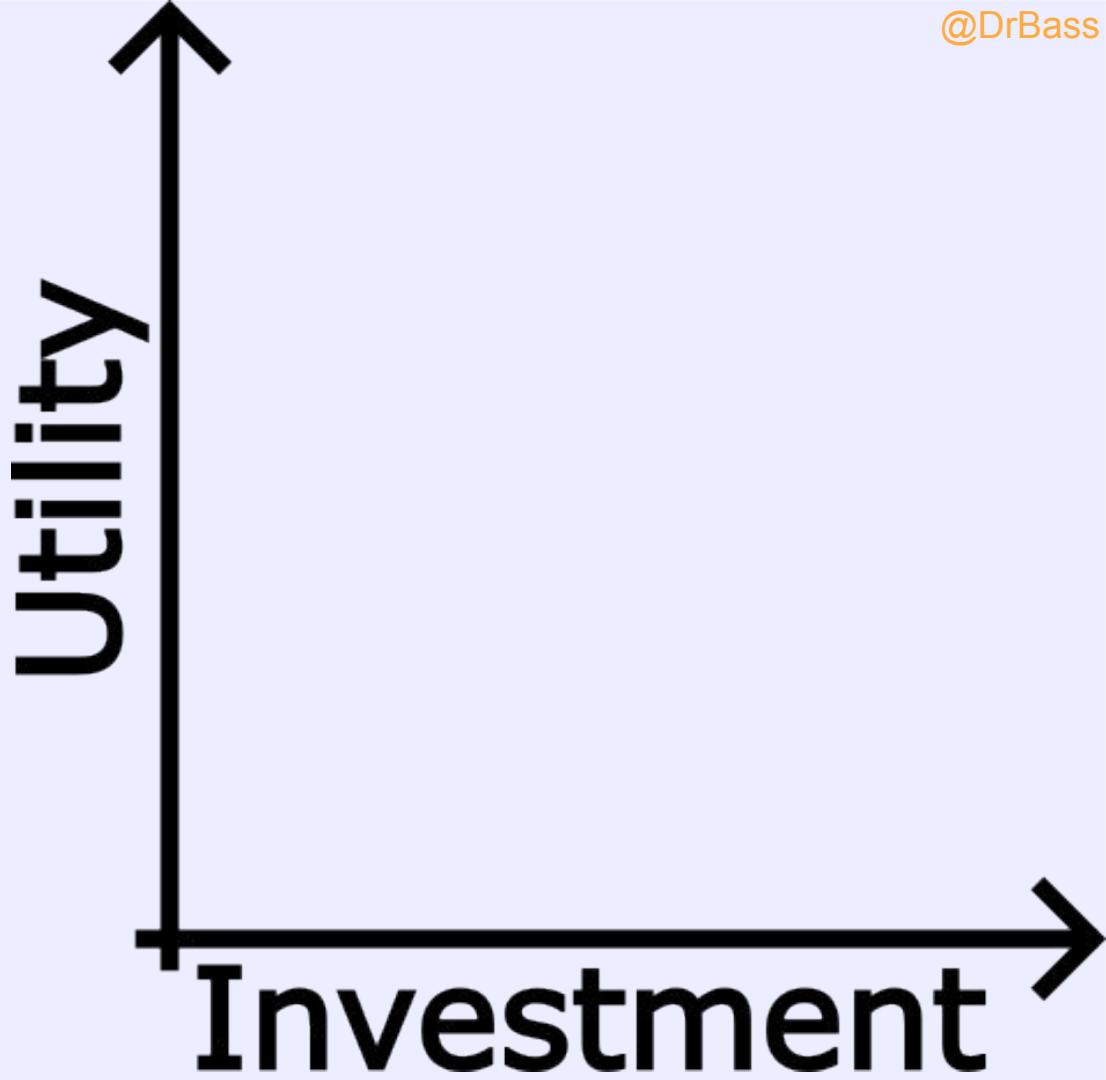


What Made It More Exciting?

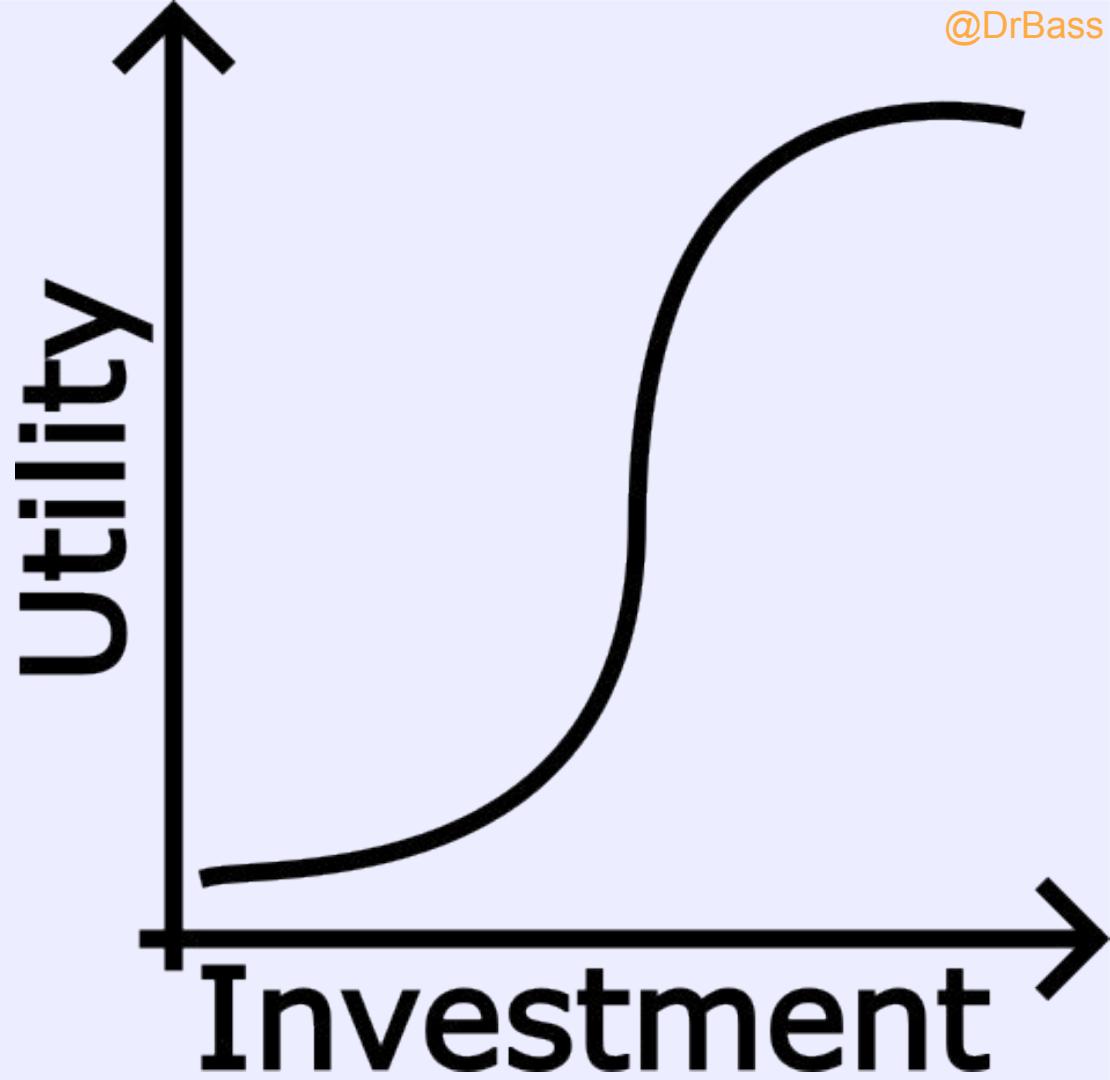




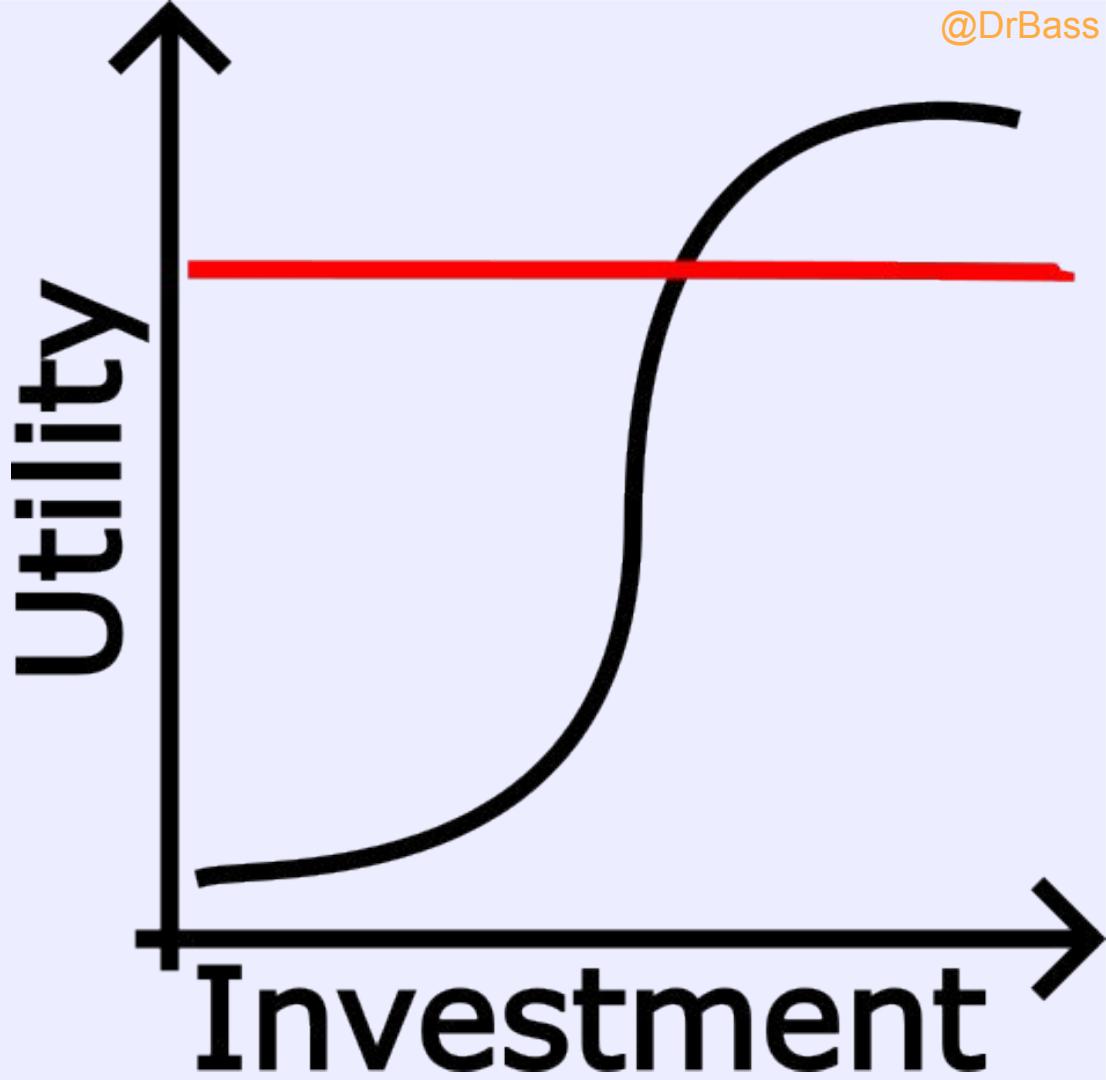
Why are LLMs So Exciting?



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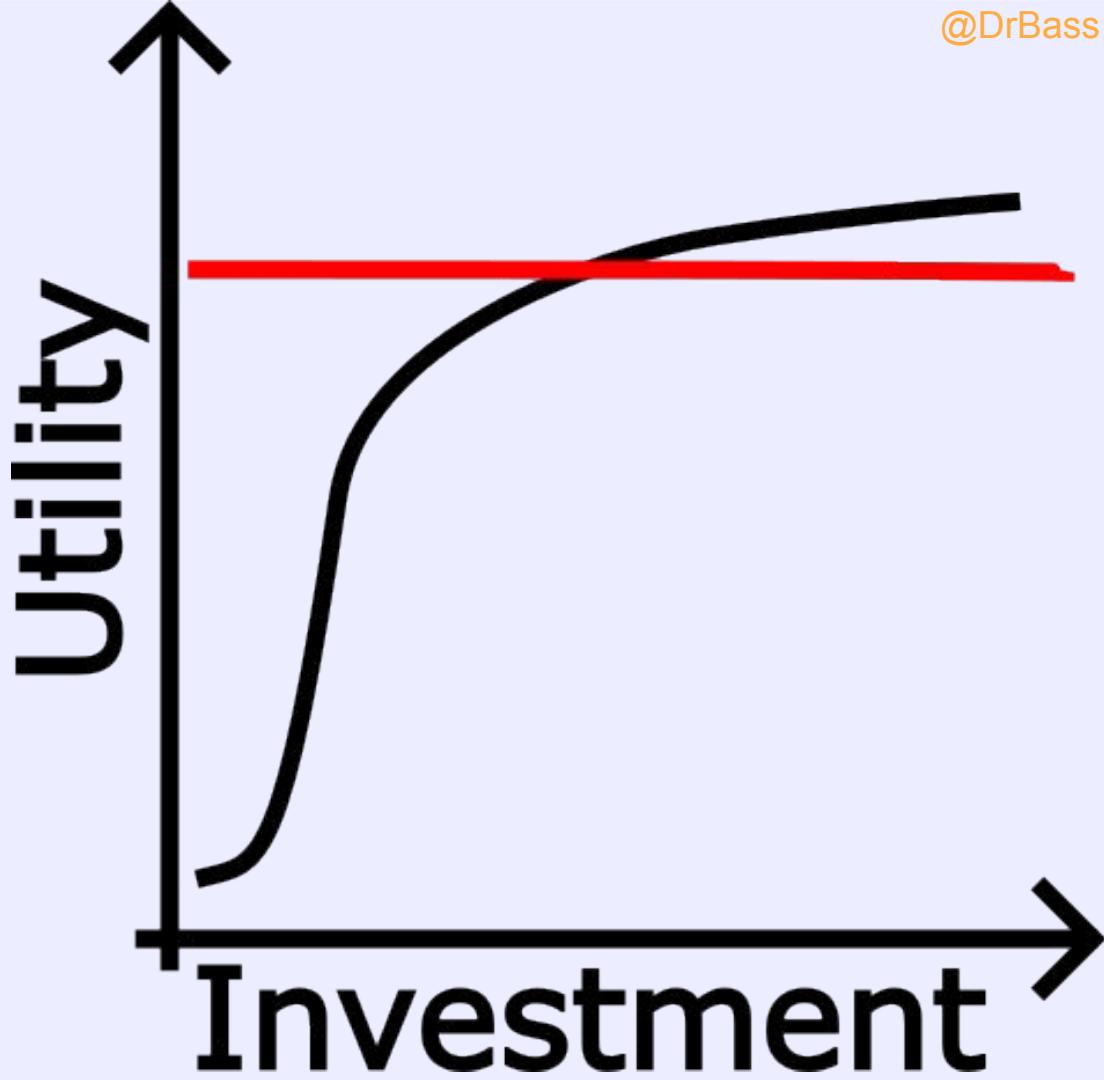


Why are LLMs So Exciting?



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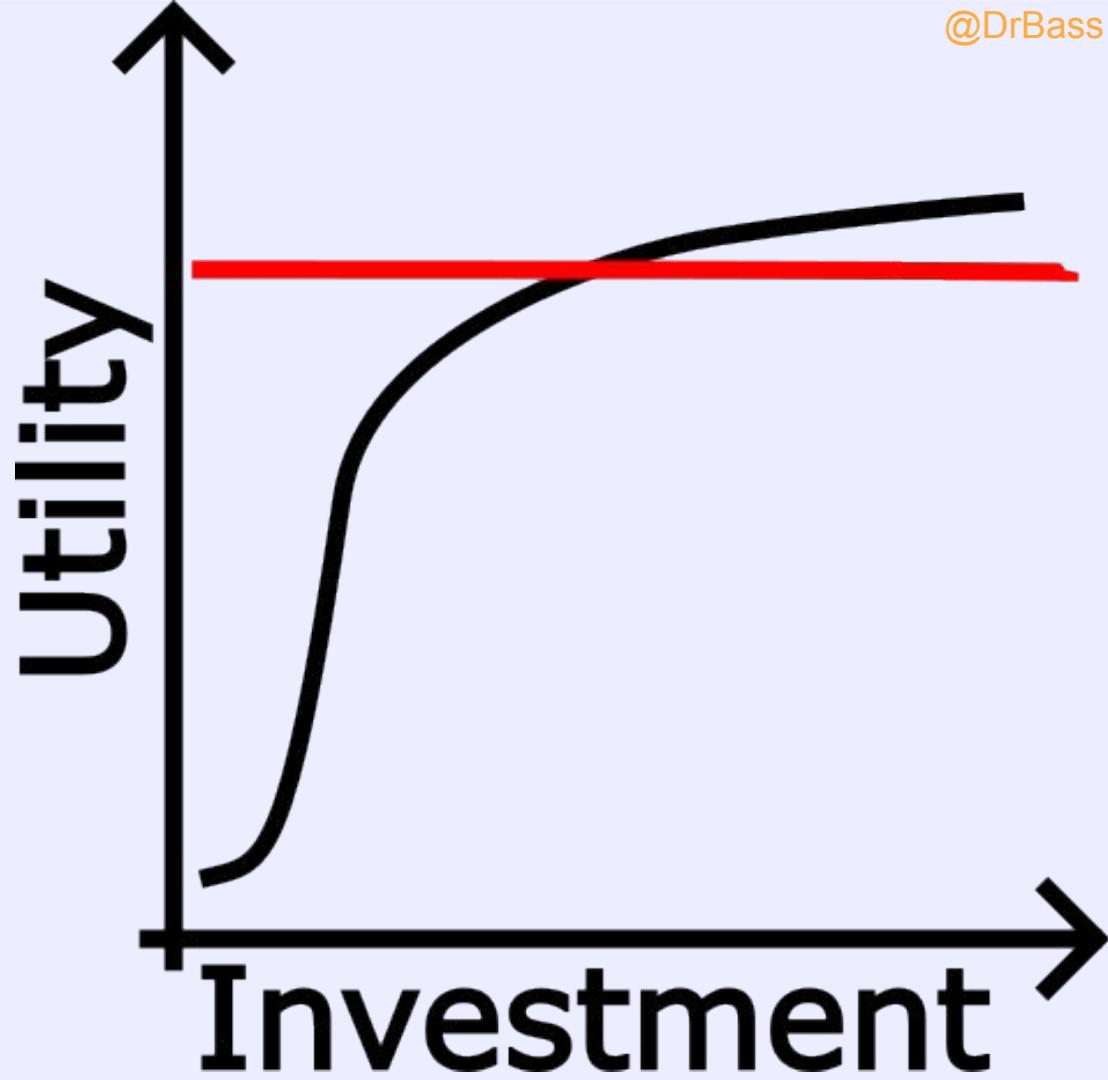
They foreshorten
the left half of
the curve!



Why are LLMs So Exciting?

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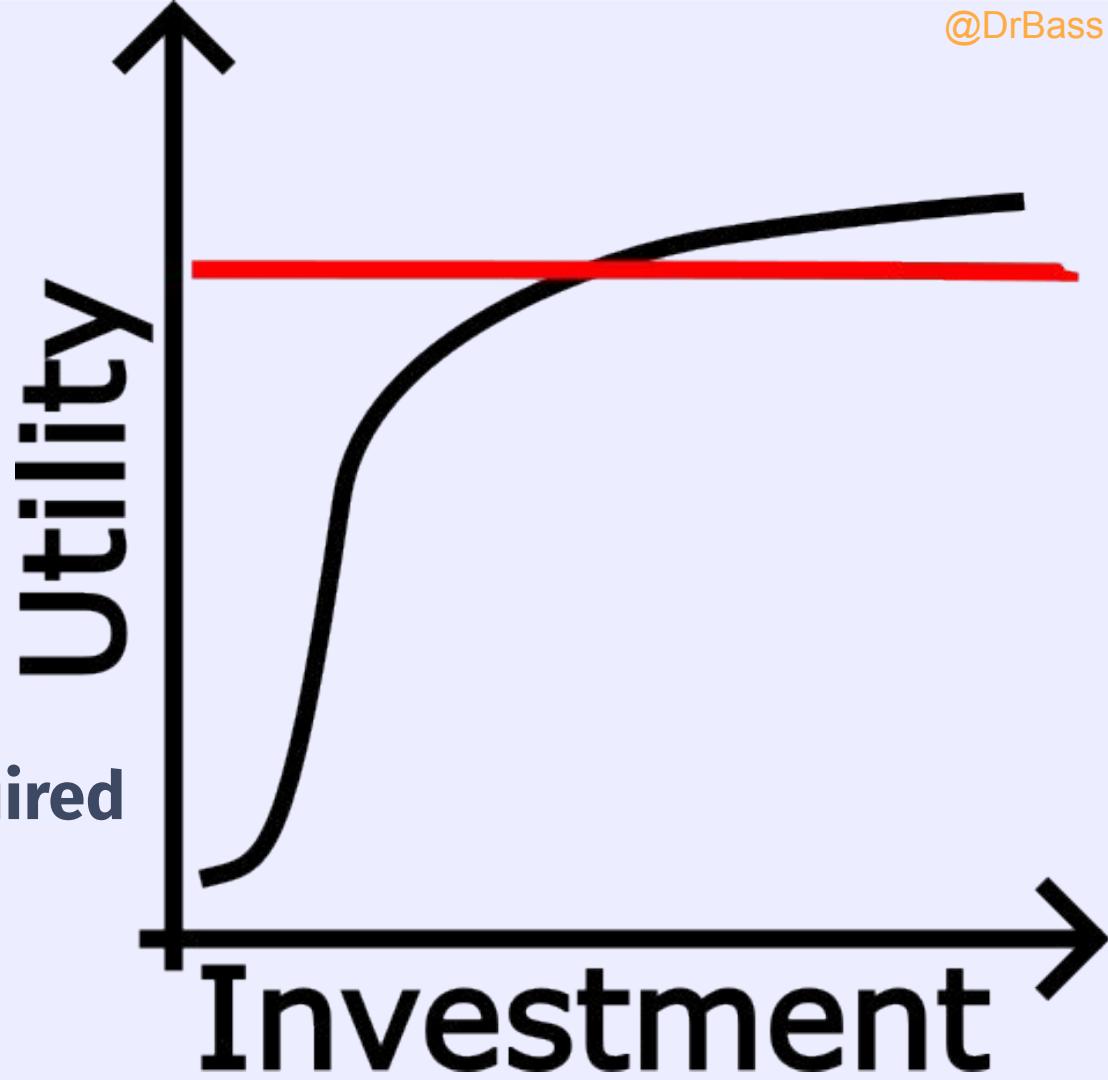
Faster Time to Value



Why are LLMs So Exciting?

They foreshorten
the left half of
the curve!

Faster Time to Value
Reduce Expertise Required



Why Would I Move Beyond LLMs Anyway?

- ChatBots
- Conversion of data types
 - Plain Text -> JSON or Similar
 - Text -> Video
 - Video -> Text
 - Etc
- Programming Assistance (including SQL)
- Conversational Interfaces
- Question Answering
- Document Retrieval
- Slices, Dices, Julienne Fries

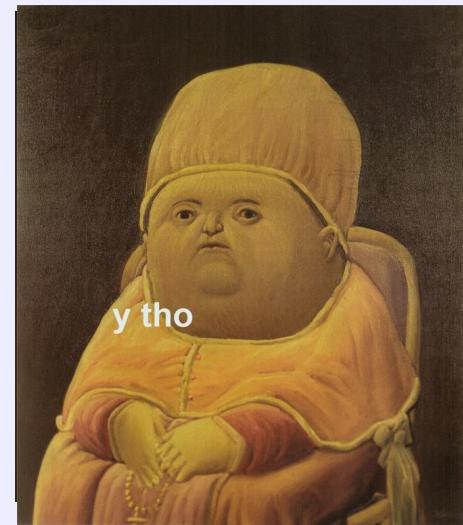


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How To Get Started With AI: Moving Beyond ChatGPT

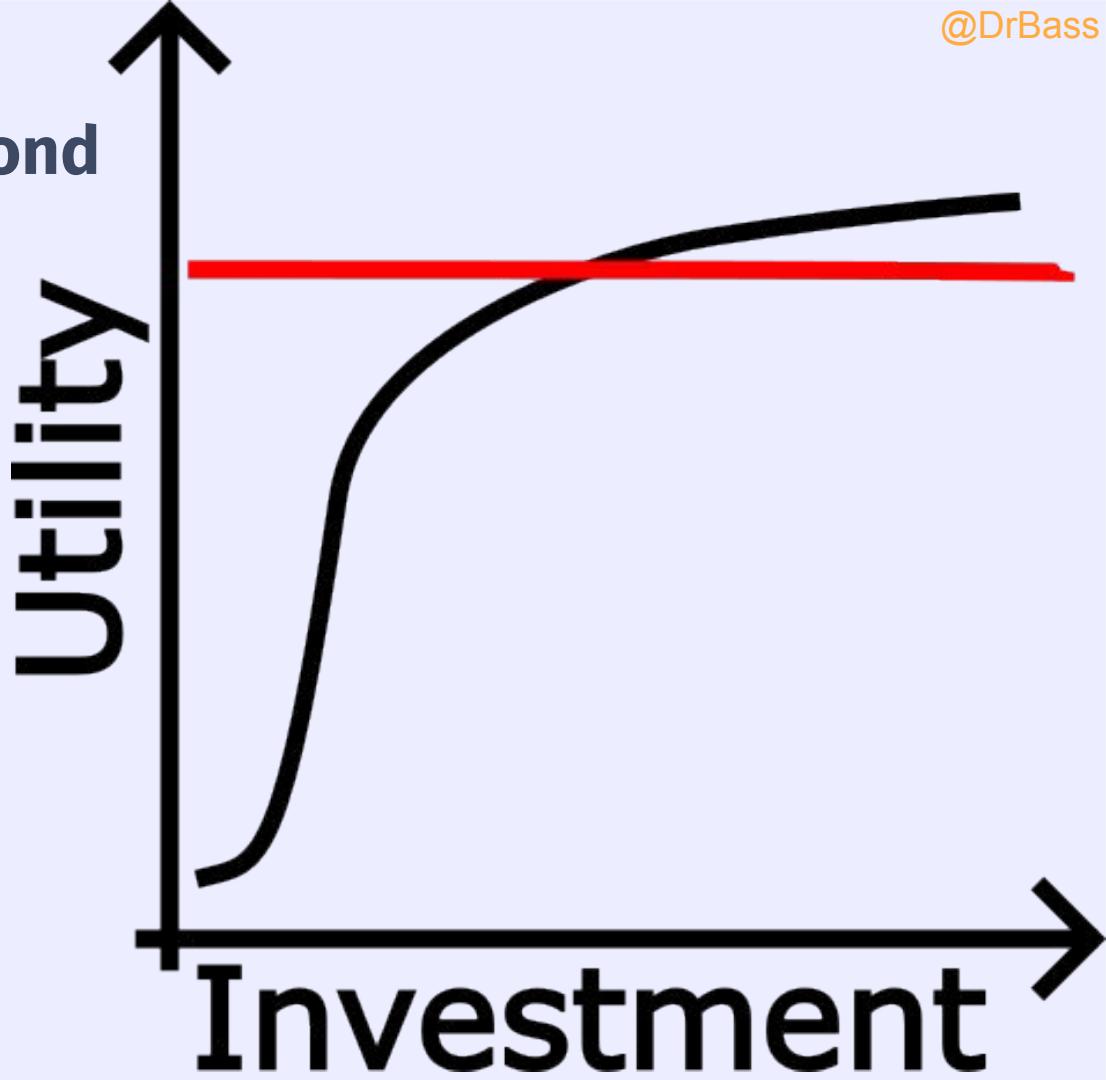


Pope Leon X
Fernando Botero



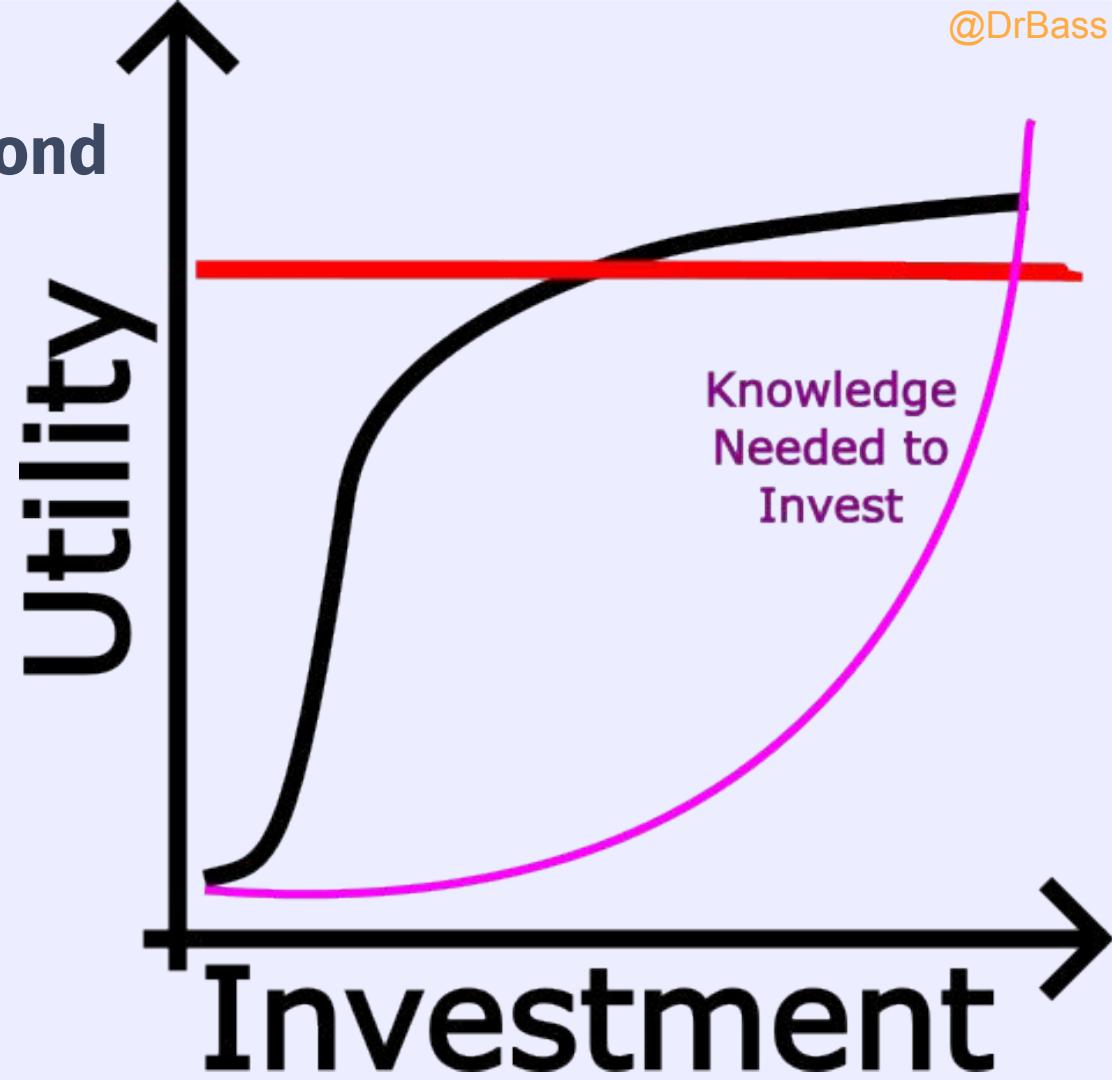
Why Would I Move Beyond LLMs Anyway?

The plateau



Why Would I Move Beyond LLMs Anyway?

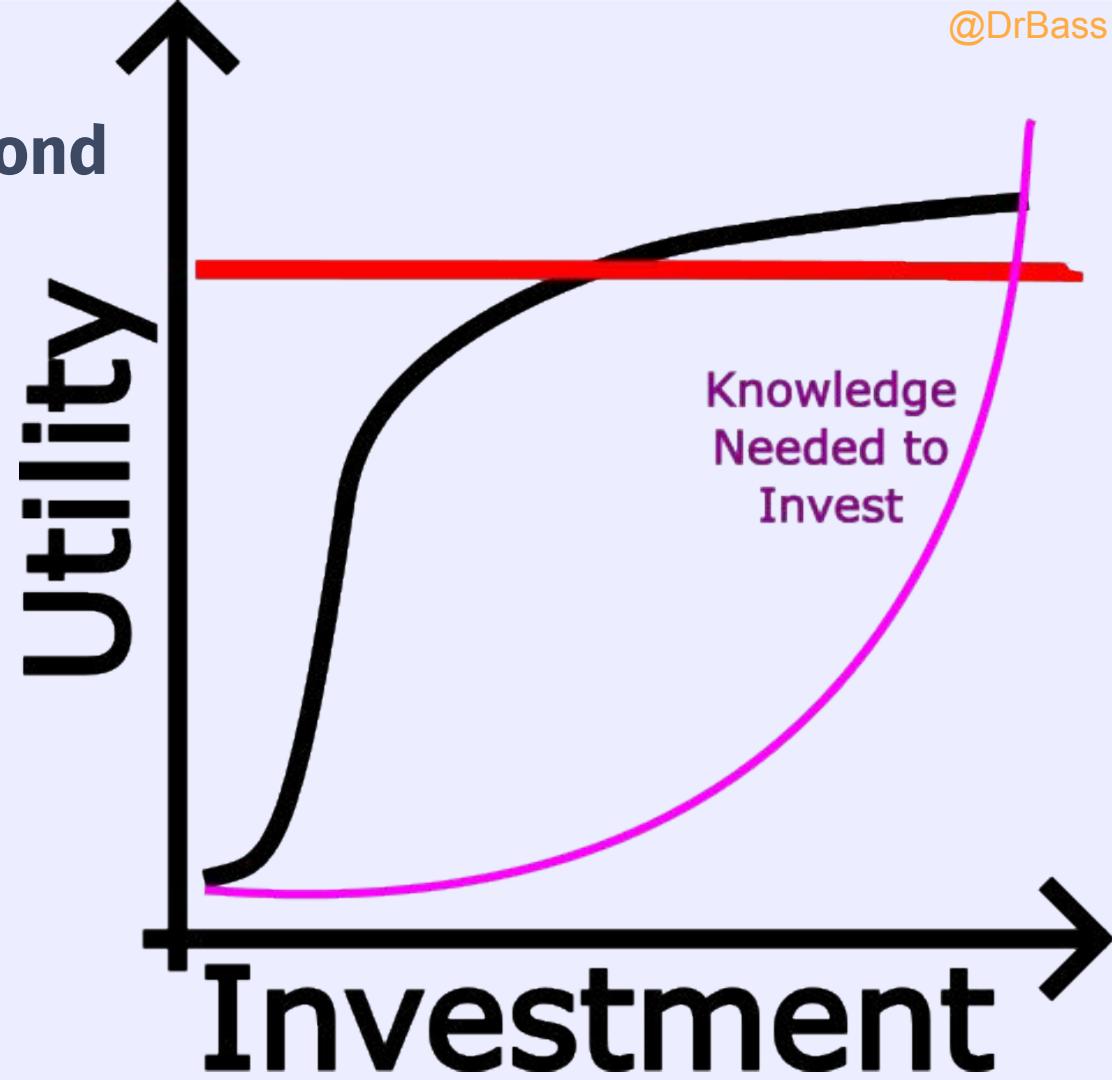
Investing more requires ever increasing expertise and resources



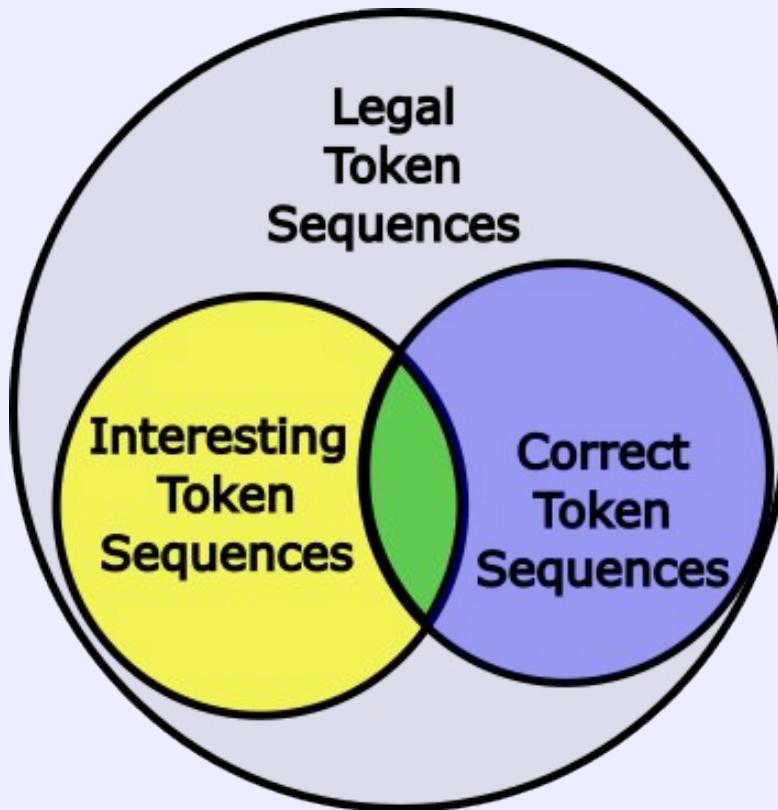
Why Would I Move Beyond LLMs Anyway?

They foreshorten
the left half of
the curve!

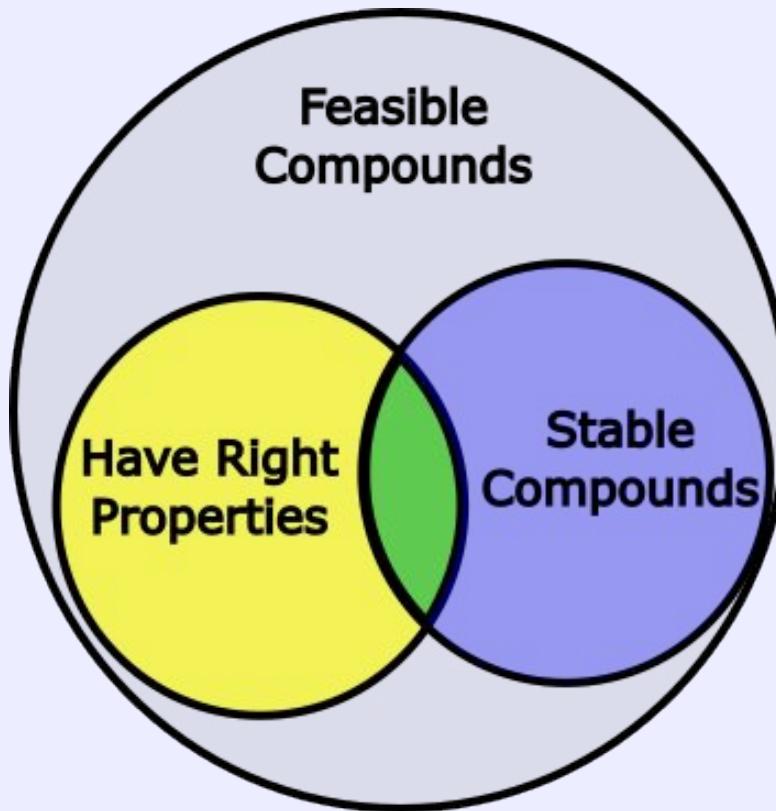
... but they effectively
elongate the plateau



Why Would I Move Beyond LLMs Anyway?



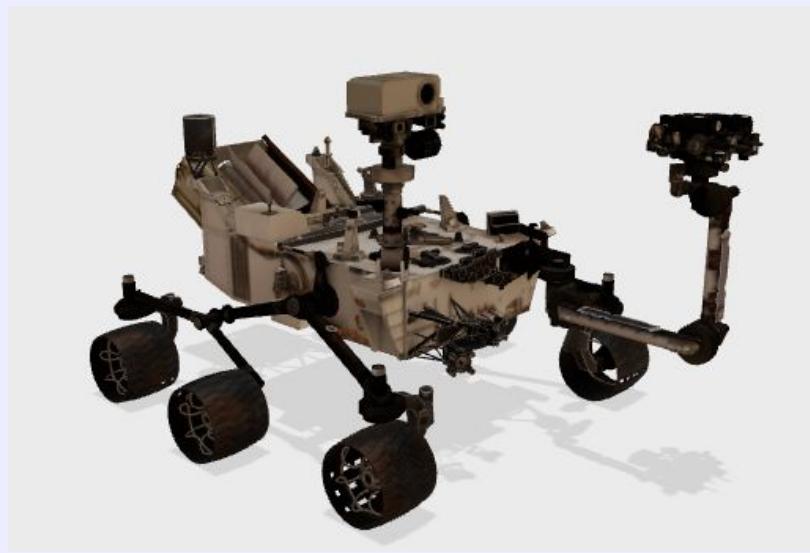
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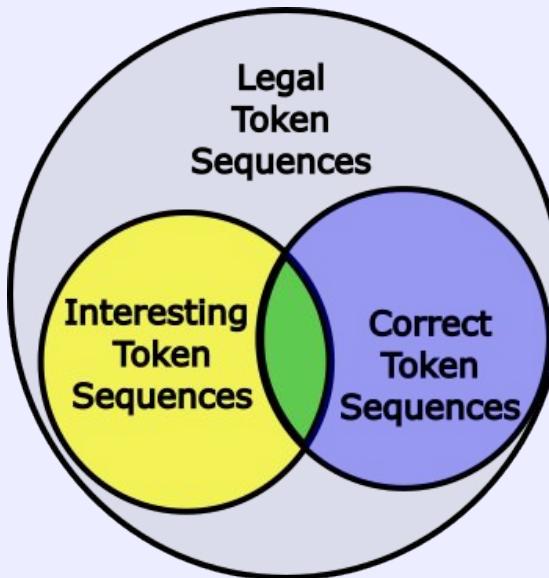
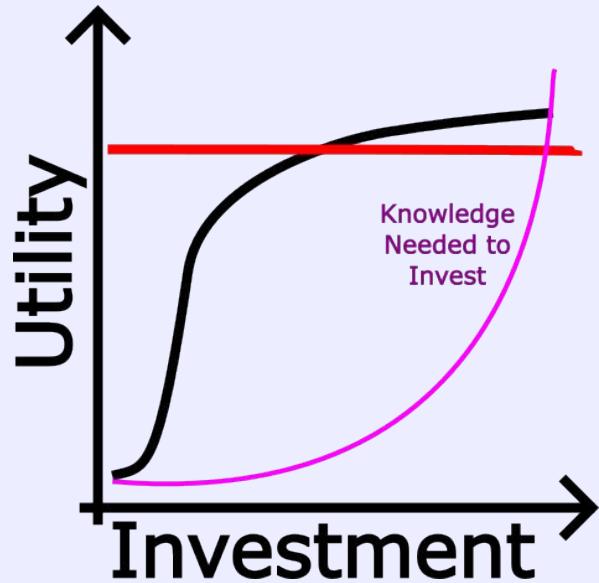
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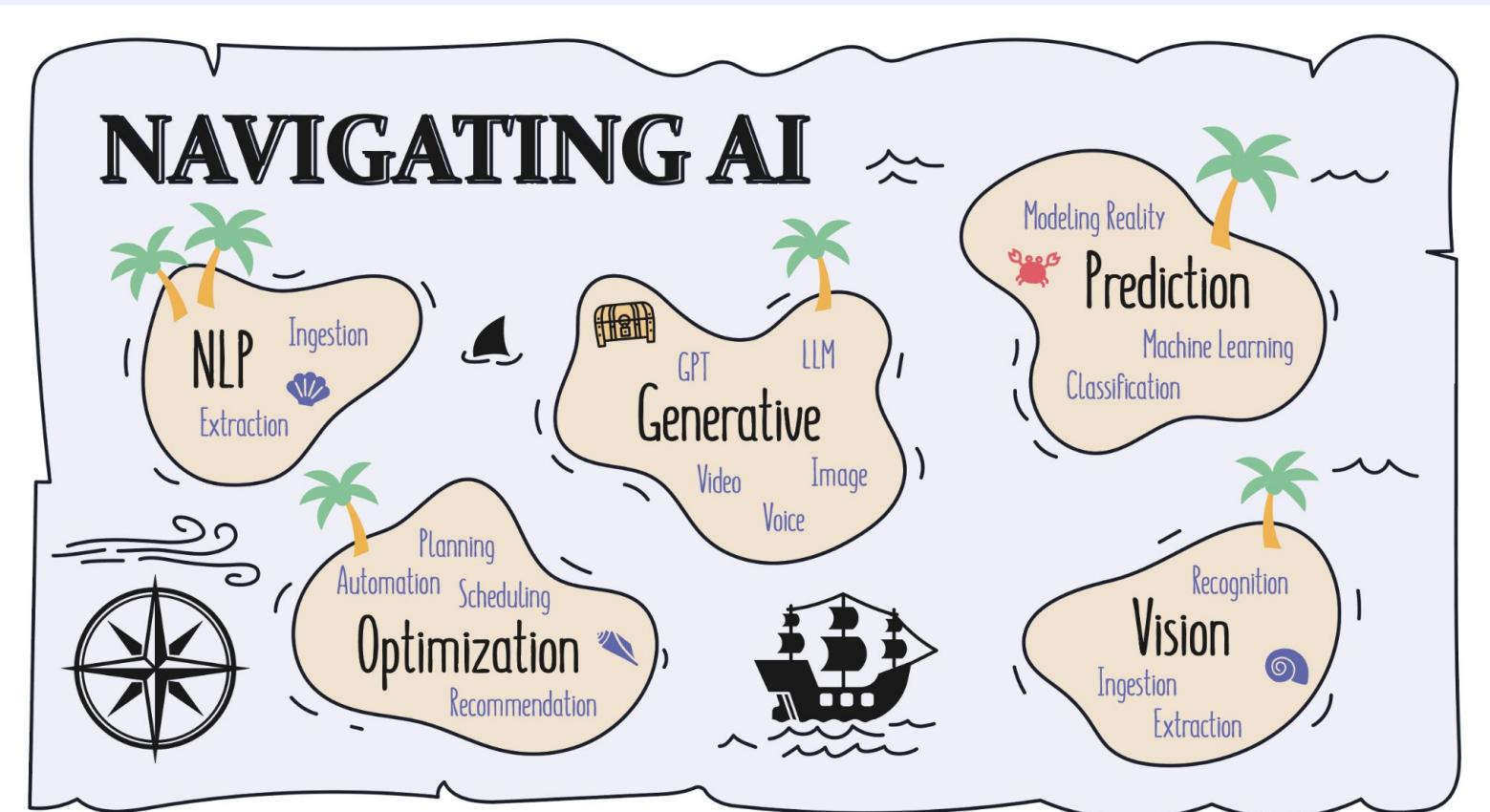
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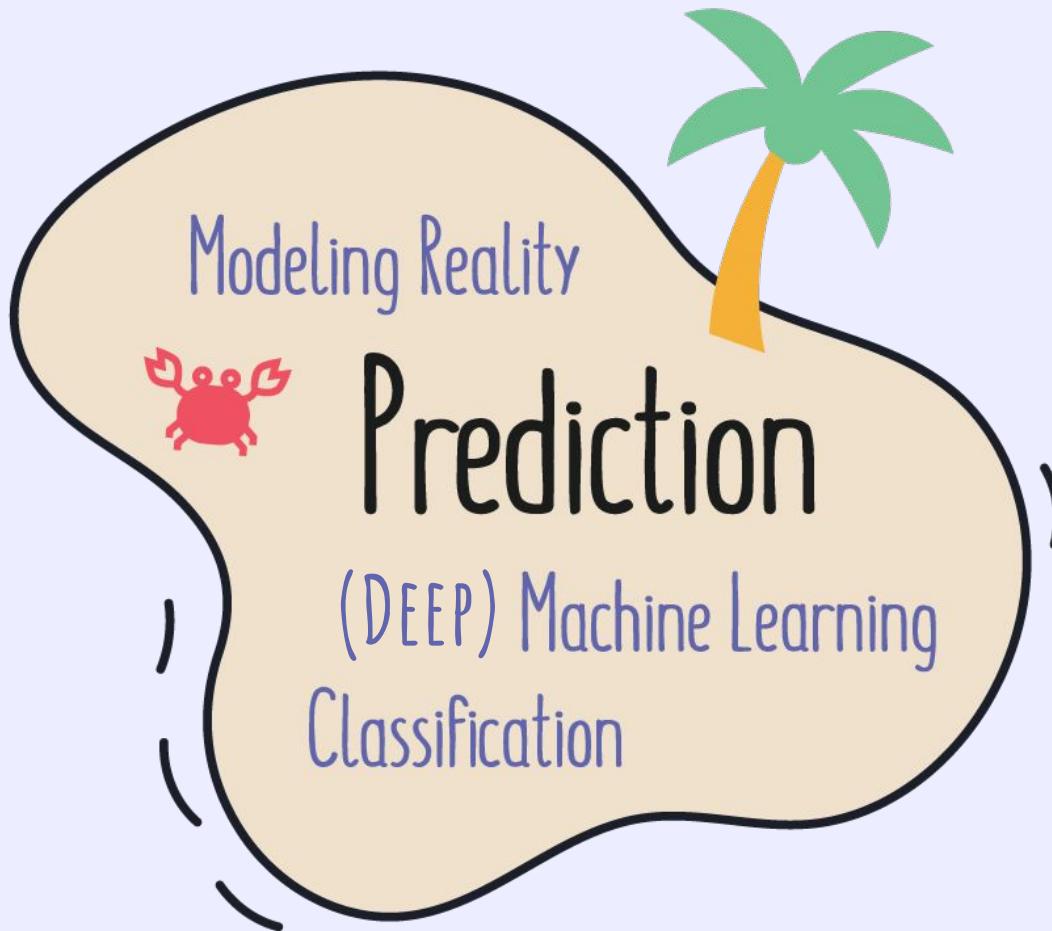


When Would I Move Away From LLMs?

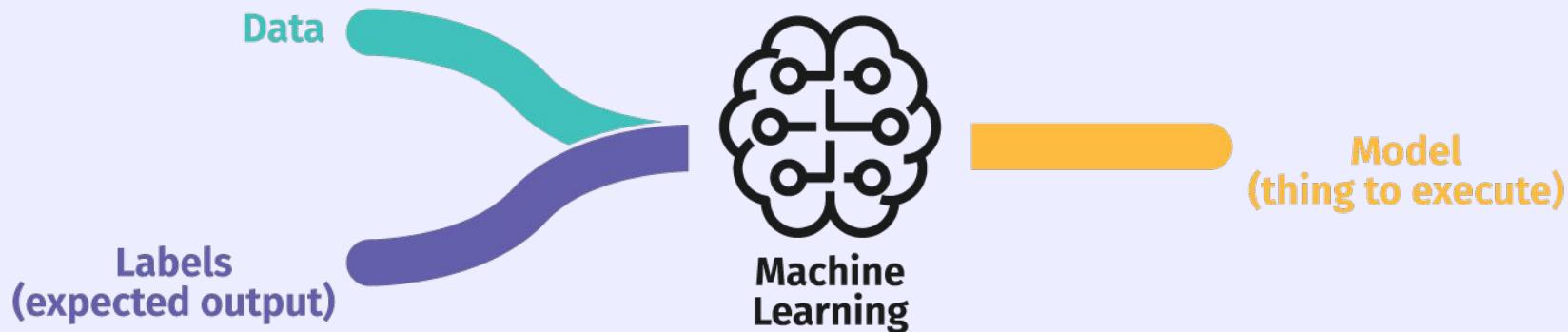


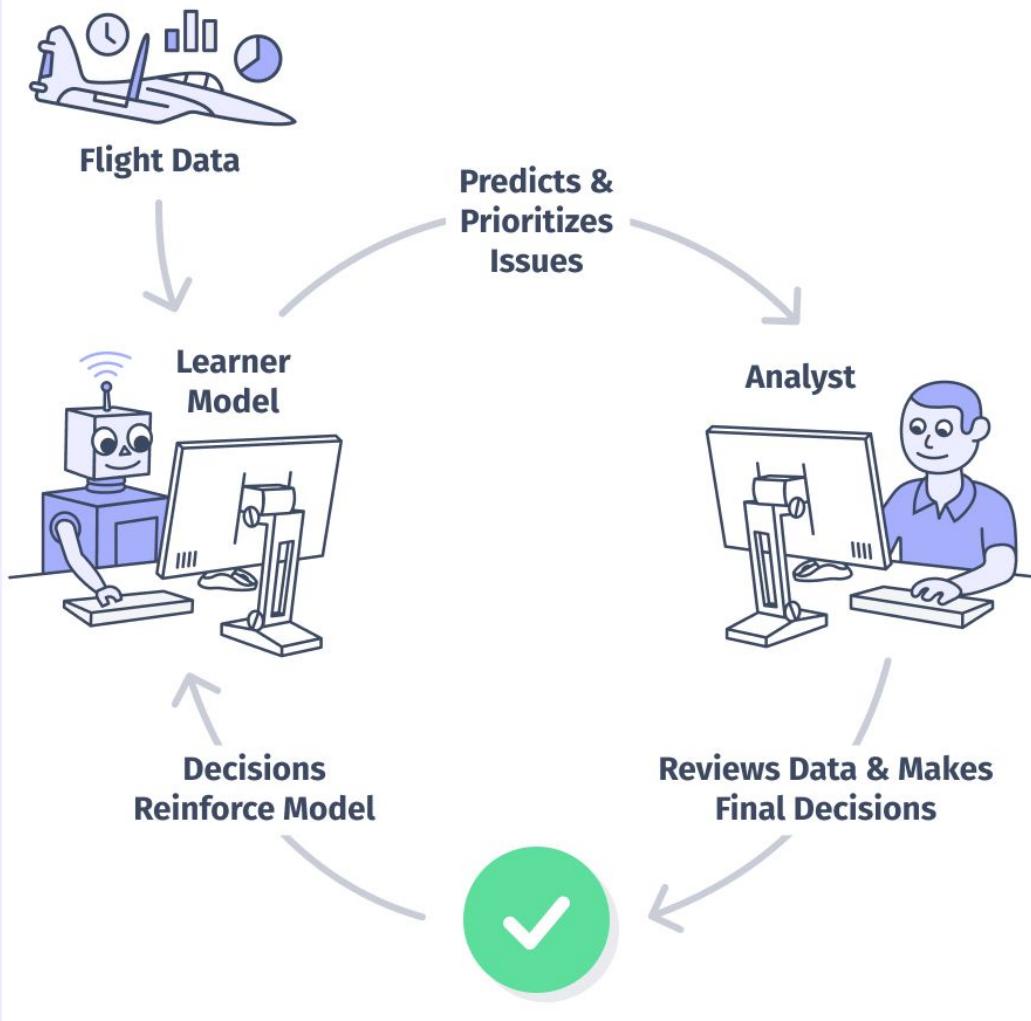
Well, Where Do I Go?











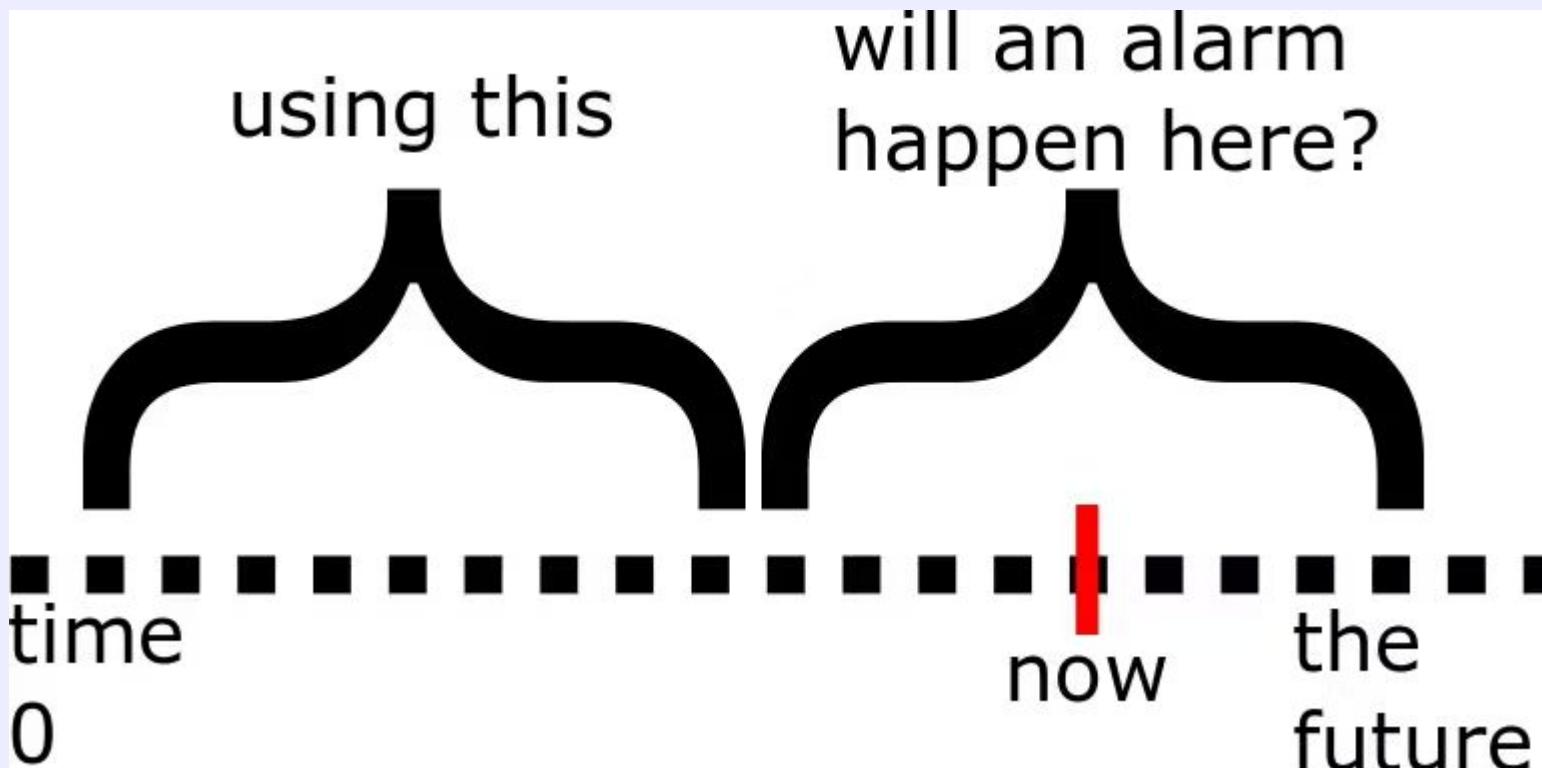
So, How Does That Work?



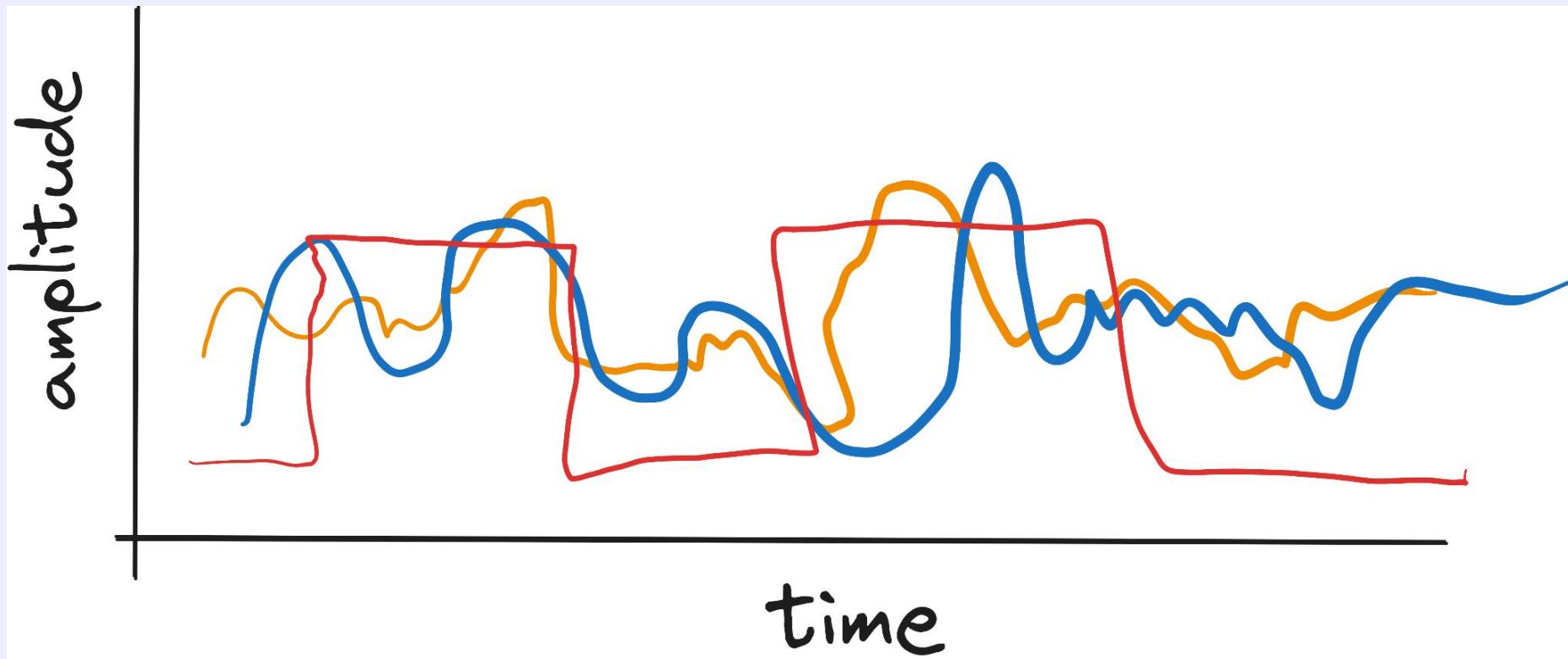
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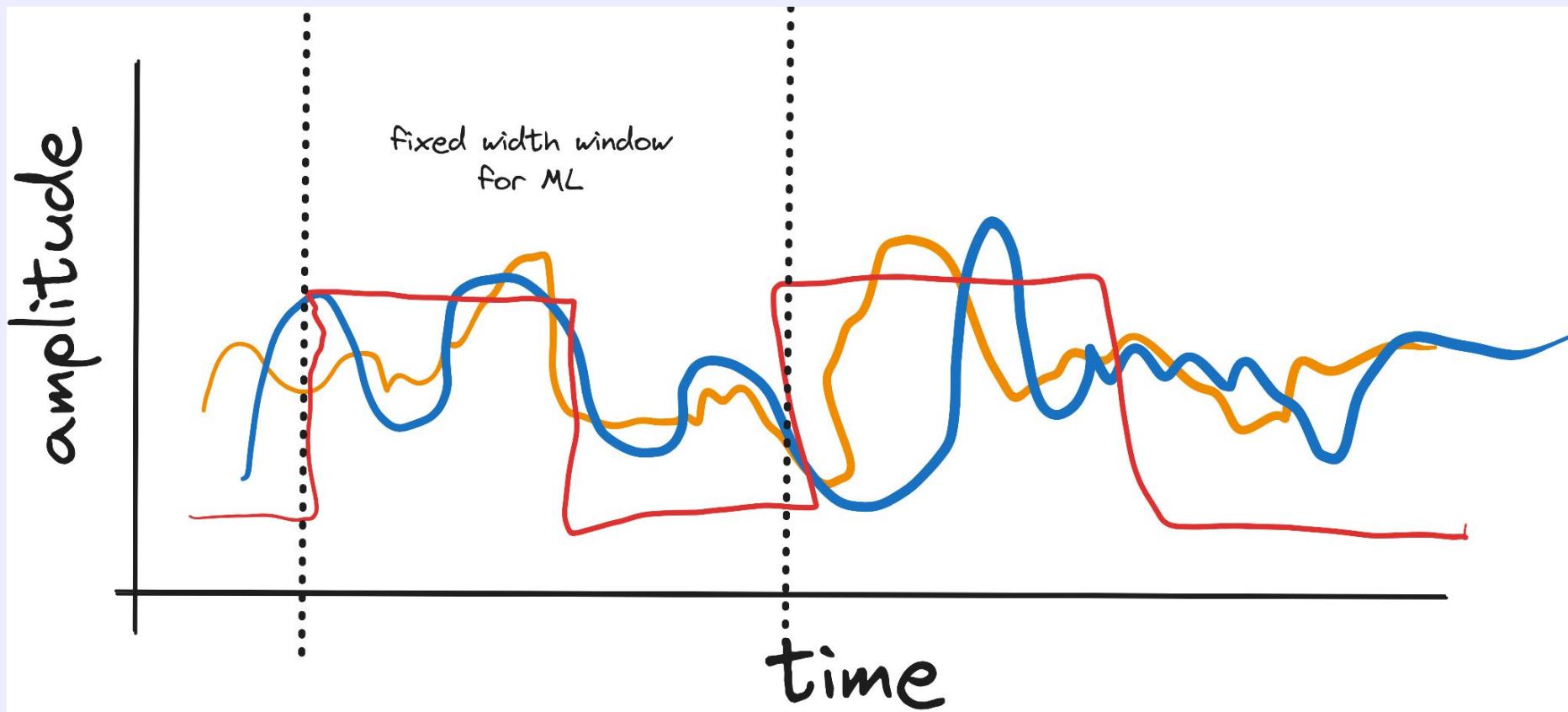
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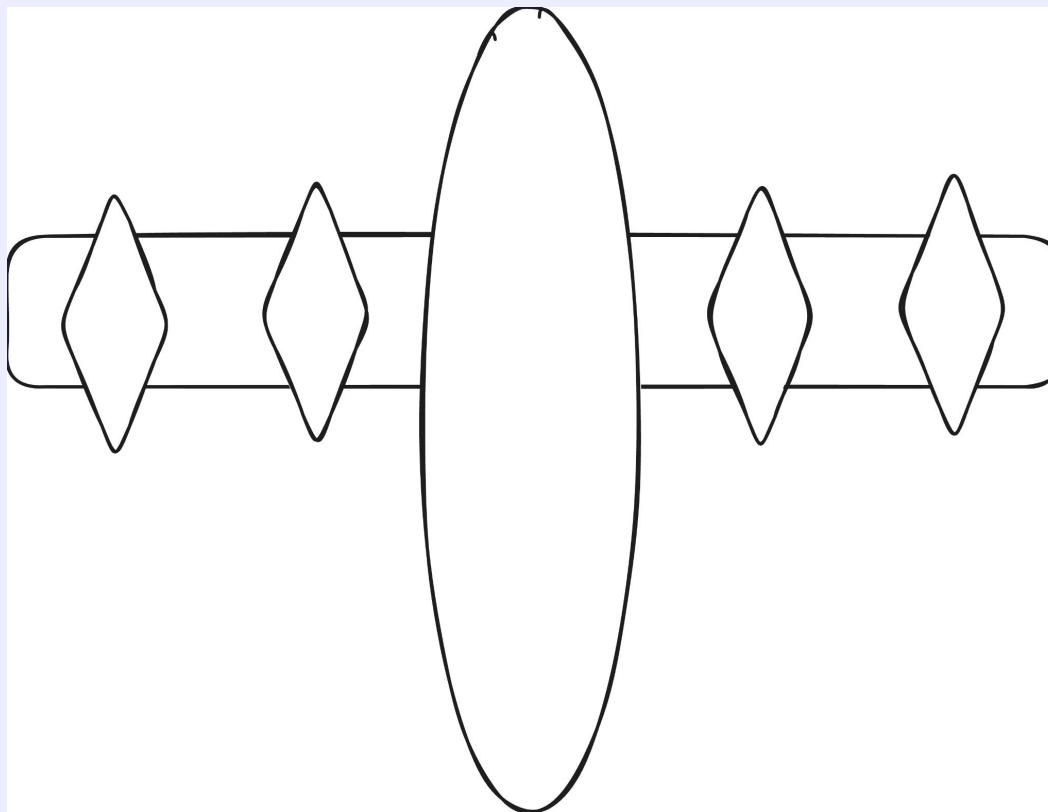
Well, What Are We Learning to Predict from What?



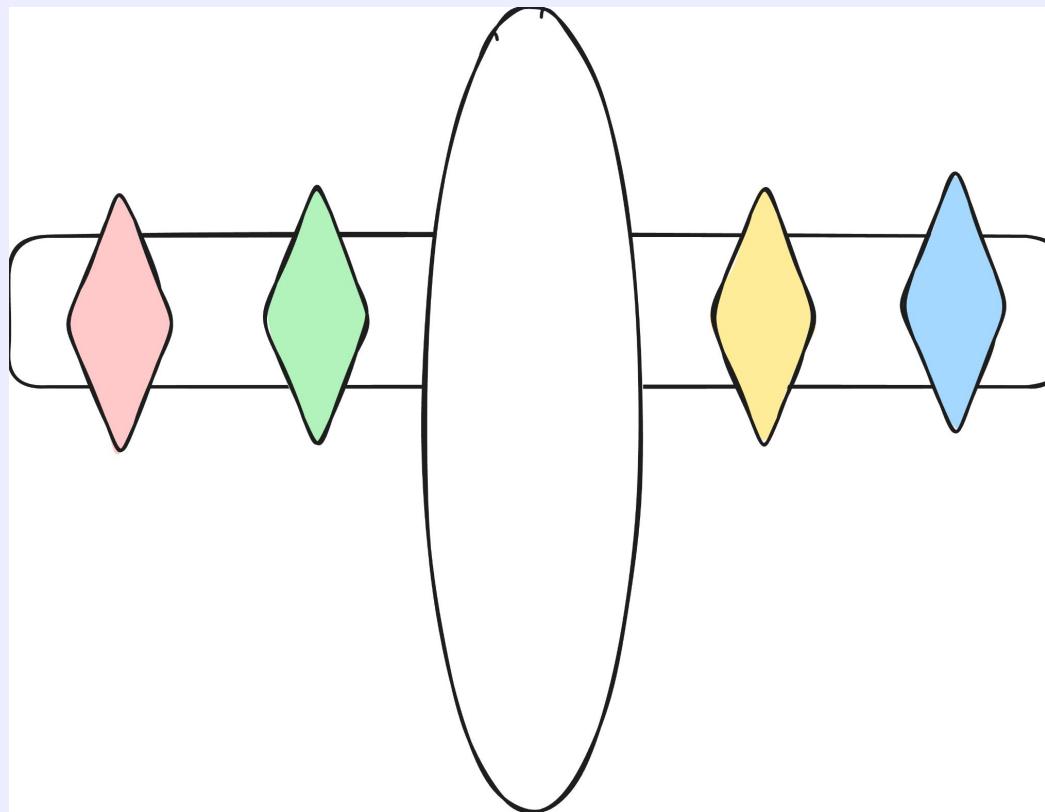
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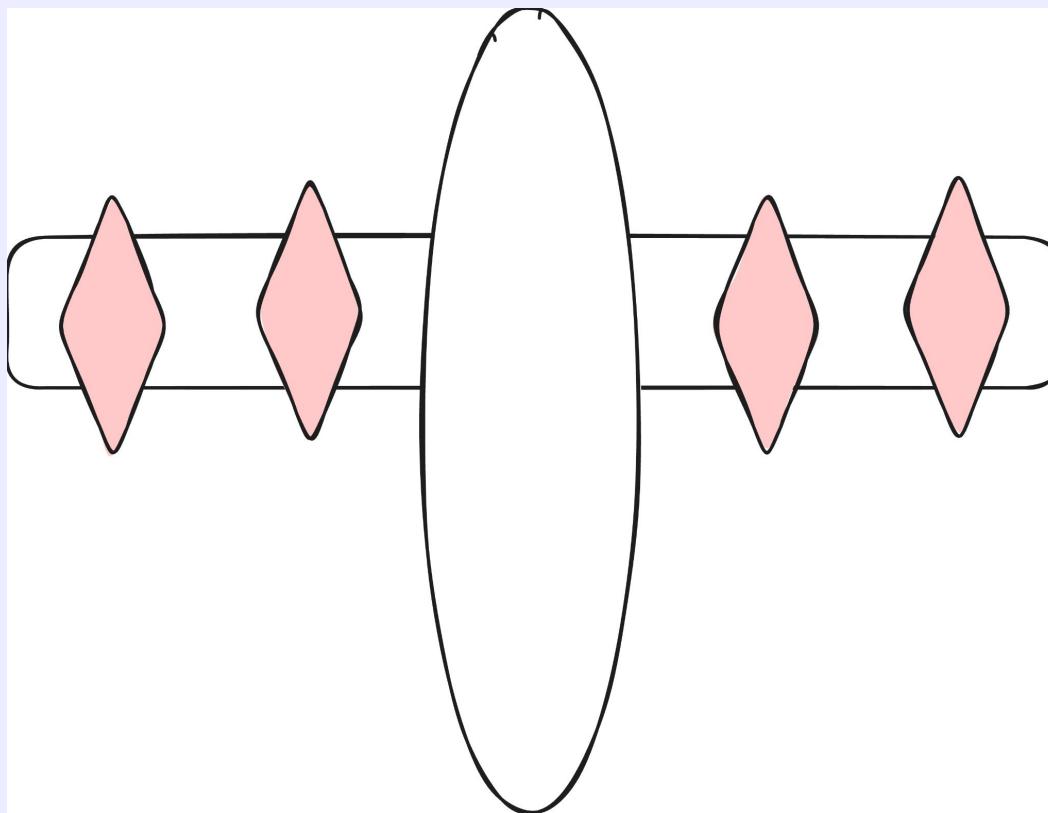
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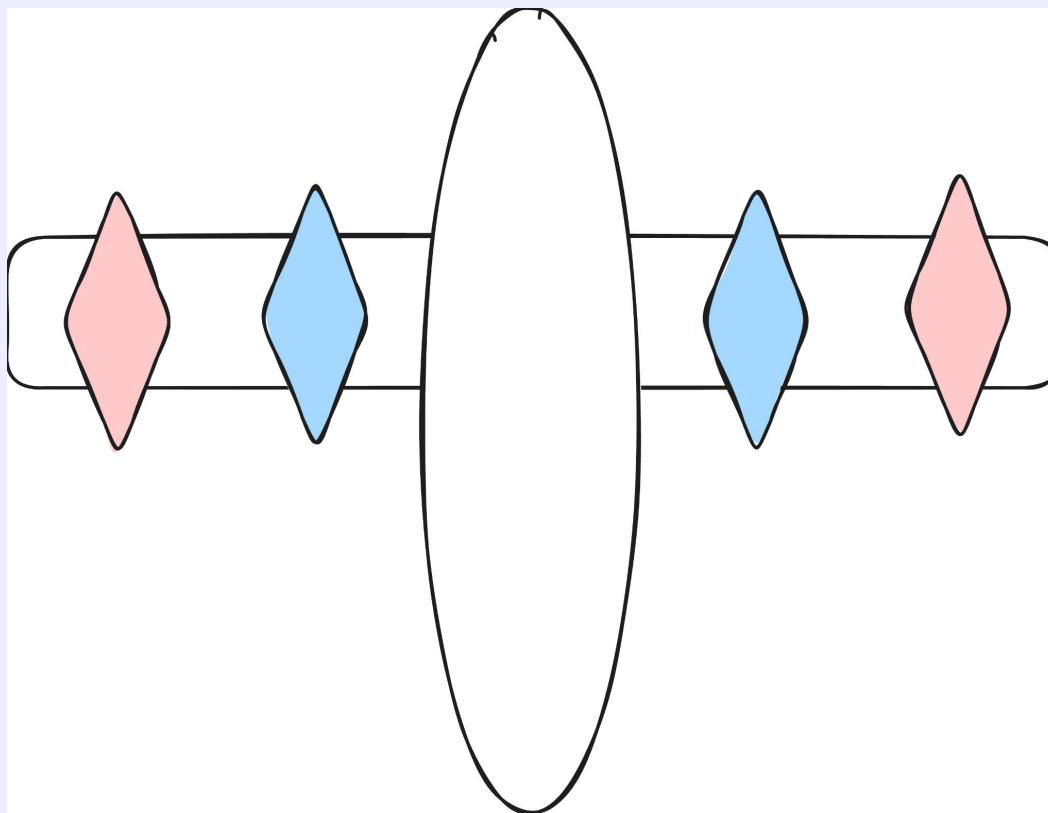
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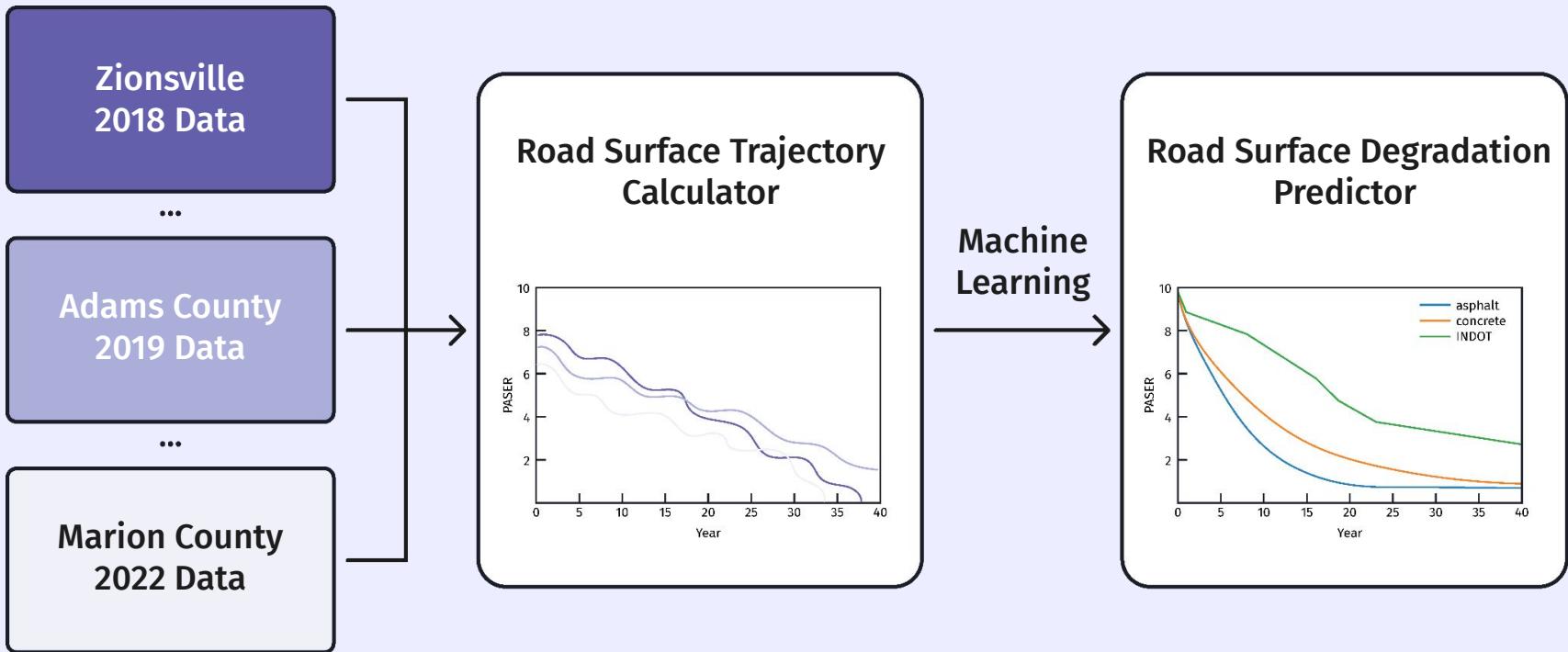


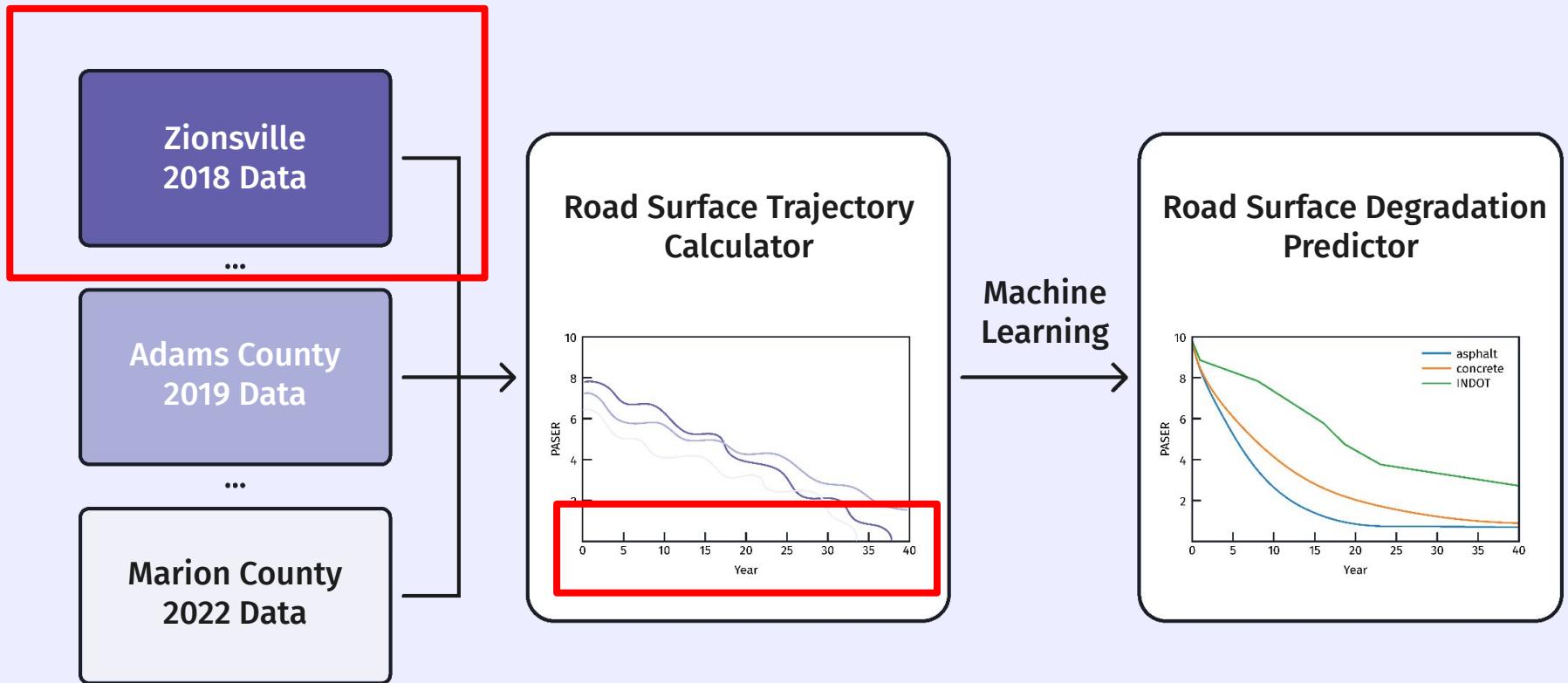
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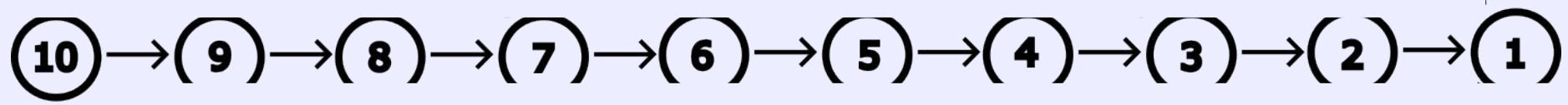


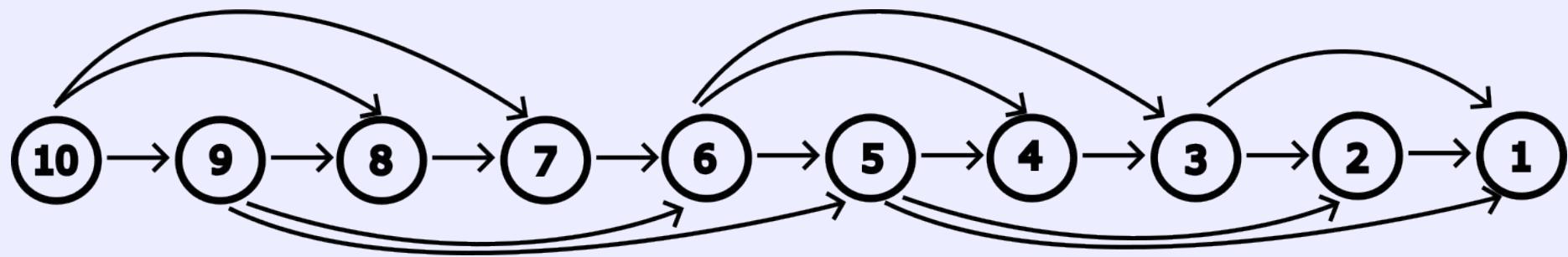
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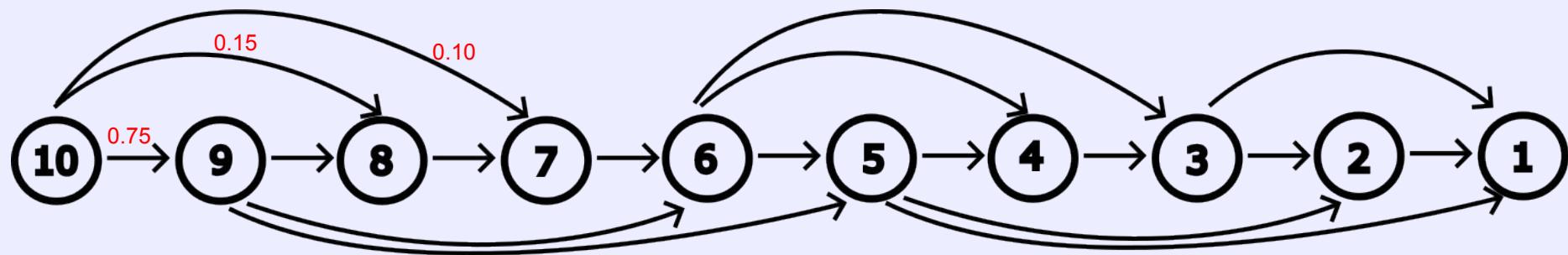


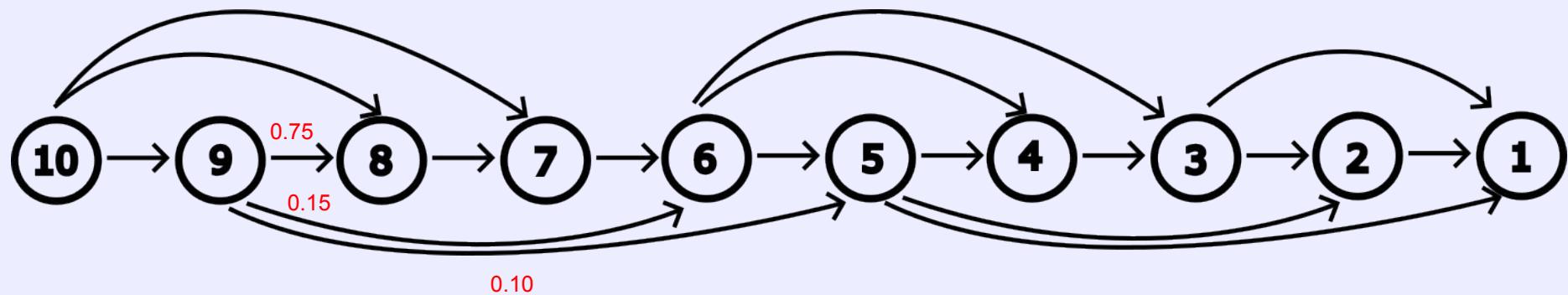


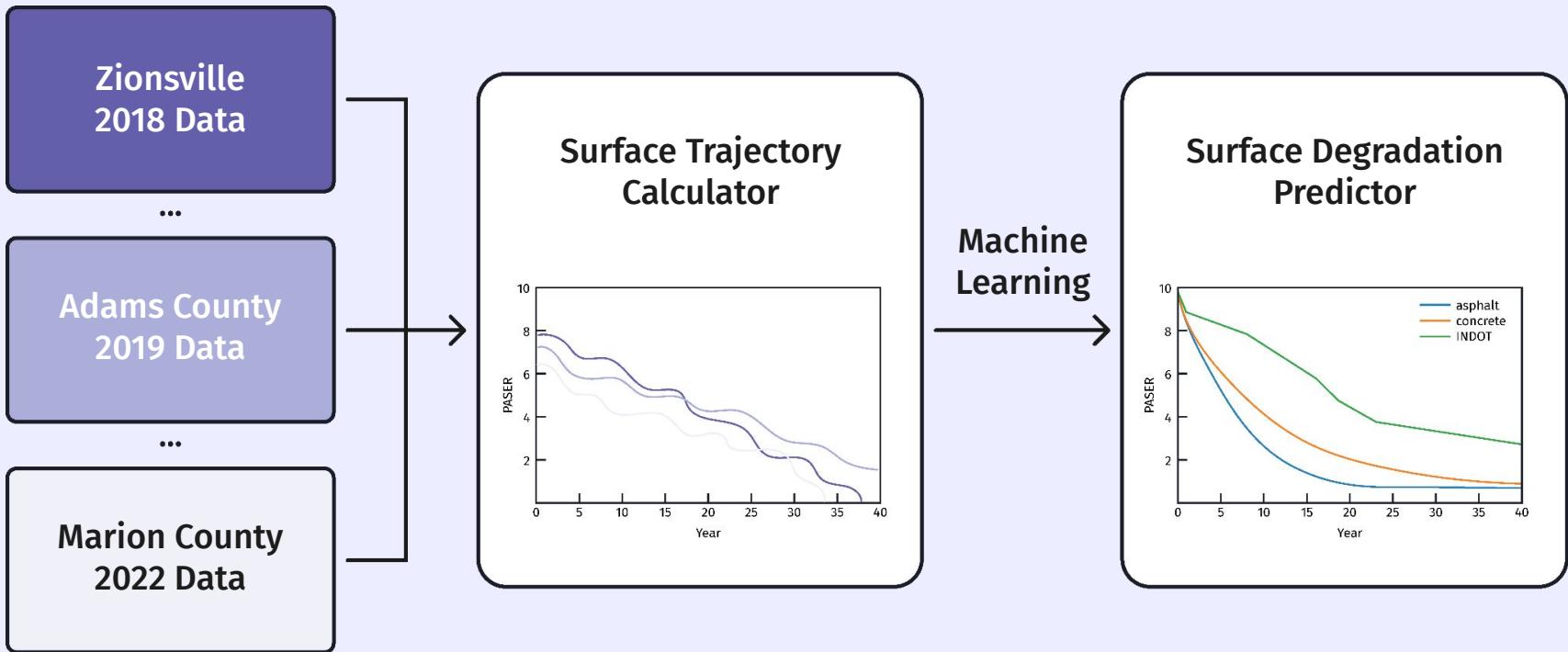






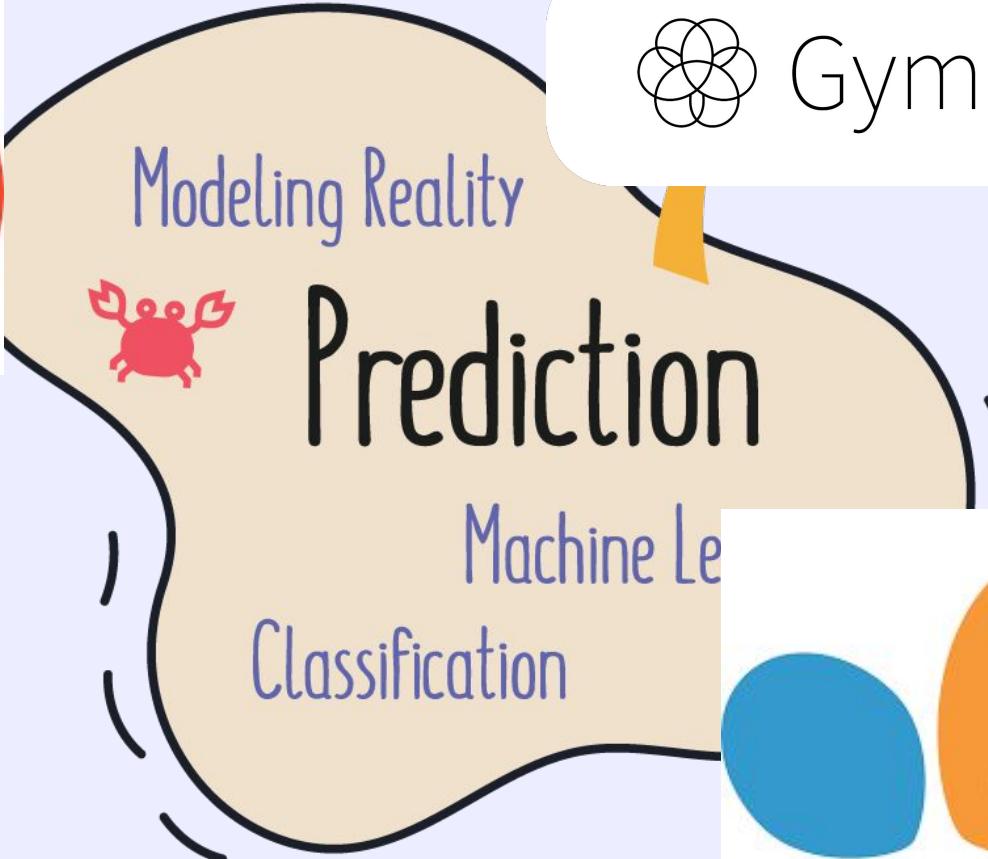




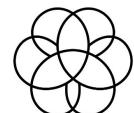


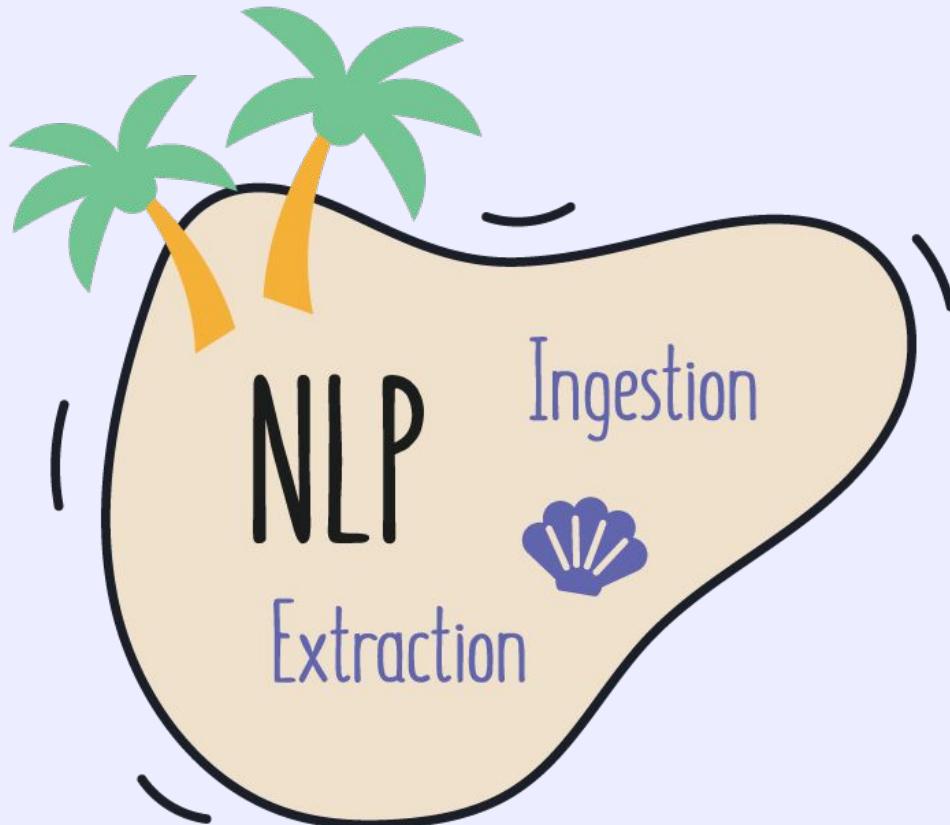


PyTorch



Gymnasium



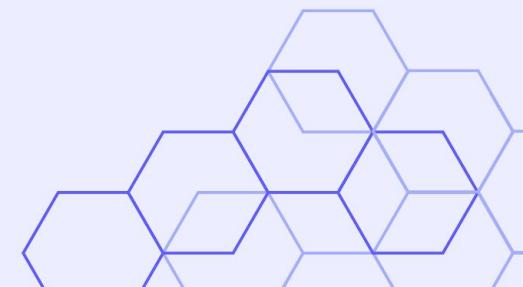
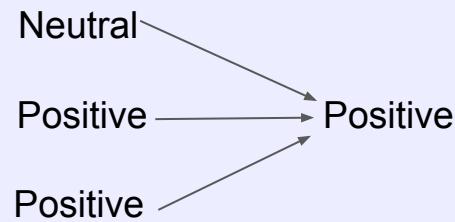


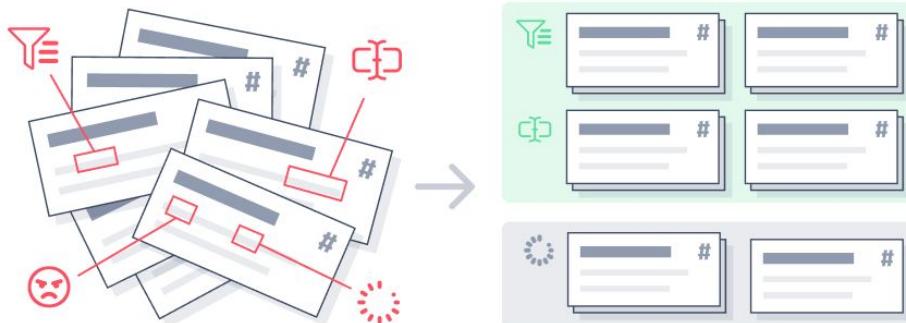
The Basics of Sentiment Analysis

We waited 20 minutes **past** our reservation for a table

Once our party was seated the service was **prompt**

the food was **delectable**





Thousands of
freeform requests

Organized into topics
and subtopics

Priority 1

Priority 2

Priority 3



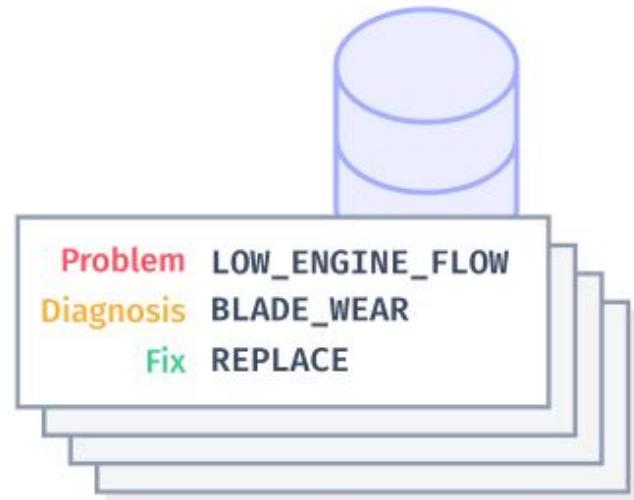
Trends are discovered to prioritize fixes

Data showed decreased engine flow.
Inspected turbine blades. Found unserviceable wear on fitting. Replaced.

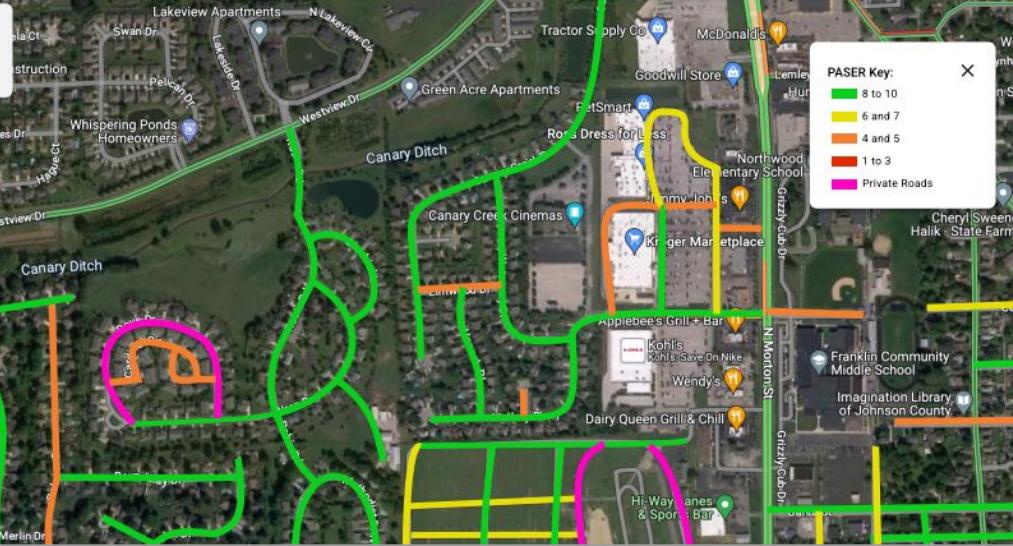
Pilot complaint about slight veering.
Took engine apart to discover dirt blocking fuel line. Flushing line fixed the issue.

Engine flow decreased after several hours of flight. Inspected turbine blades and found serviceable scratches. Replaced.

30 years of unstructured maintenance logs

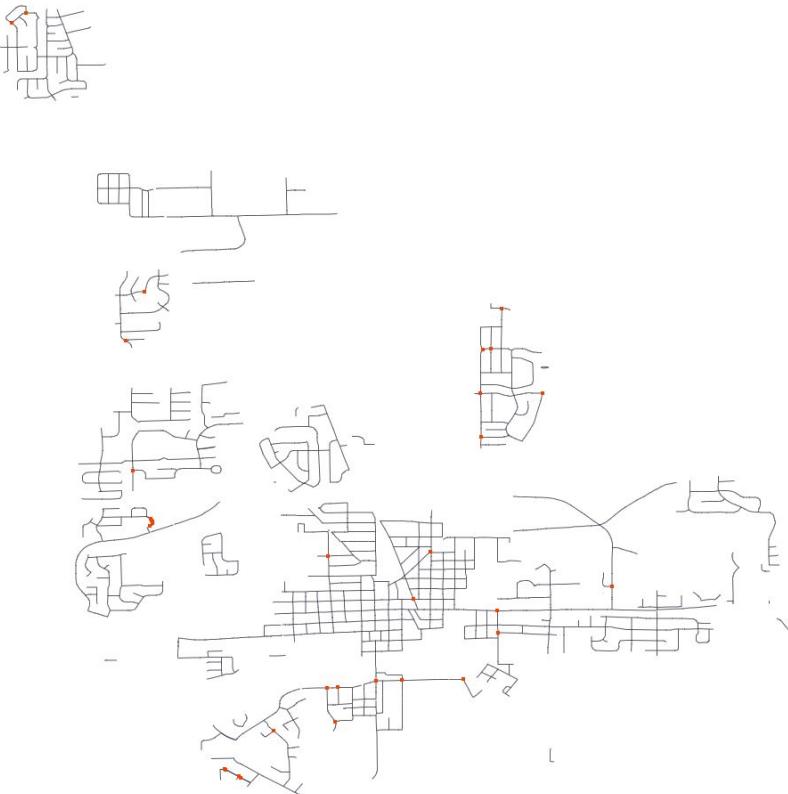


Organized into a structured database of cause and effect



Roadway	From	To
Amy Ln	Arvin Rd	Hurricane Rd
Hillview Dr	North Dr	Hillview Dr
Bay Ct	Dead End (North)	Shore View Dr

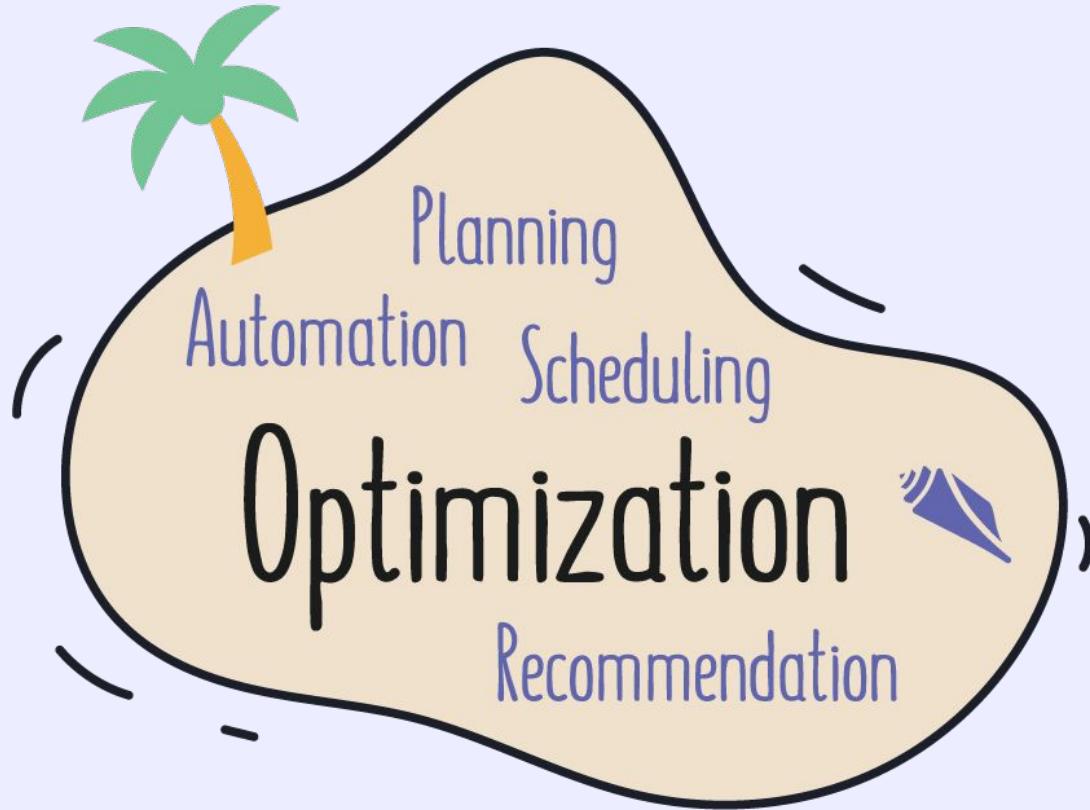
Benjamin St	Private Dr	Fire Station Driveway
Old US 31	200' W of Wilson Way	775' E of Wilson Way
Graham Rd	Curve	CR 250 E



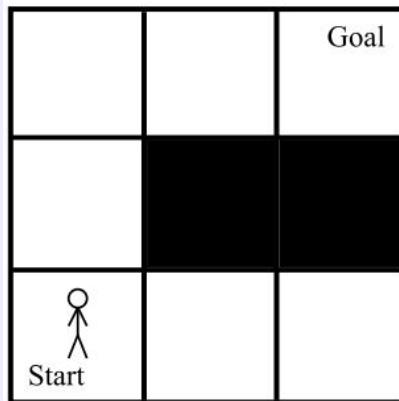


vaderSentiment

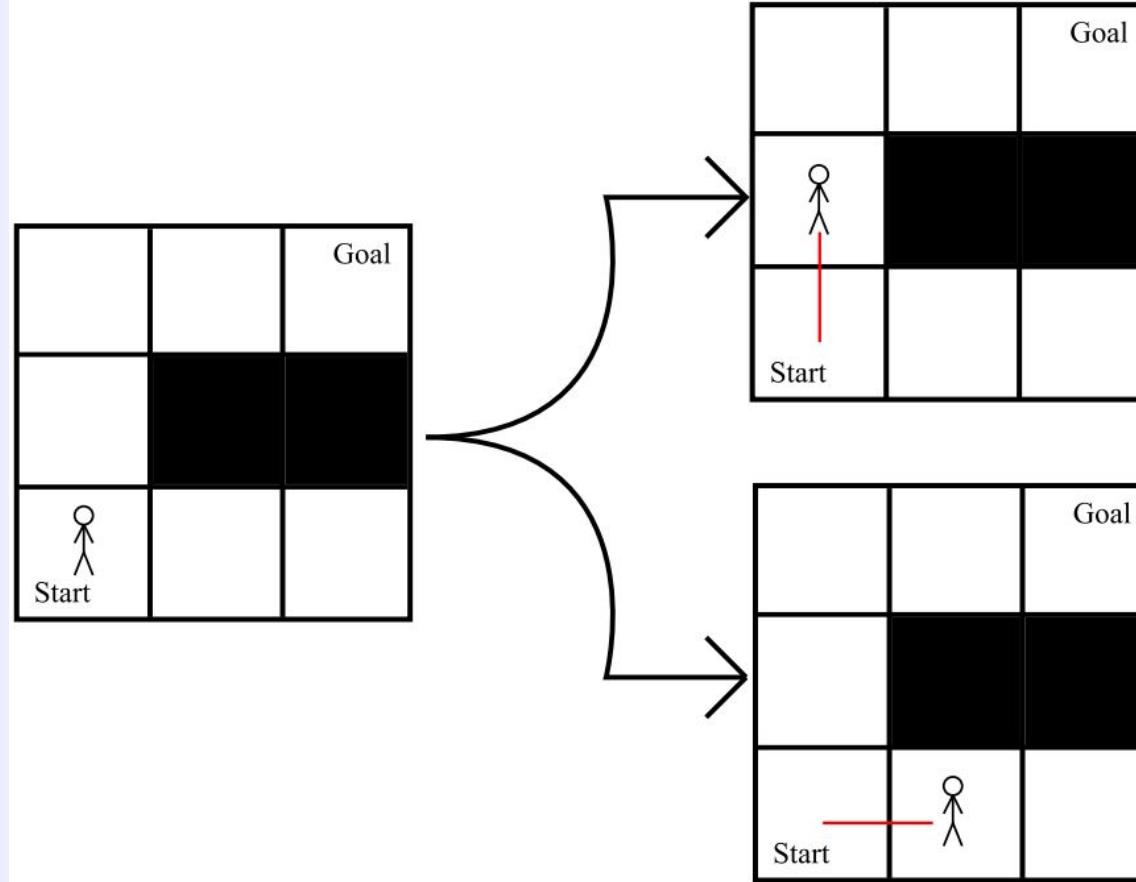
Public



Optimization



Optimization



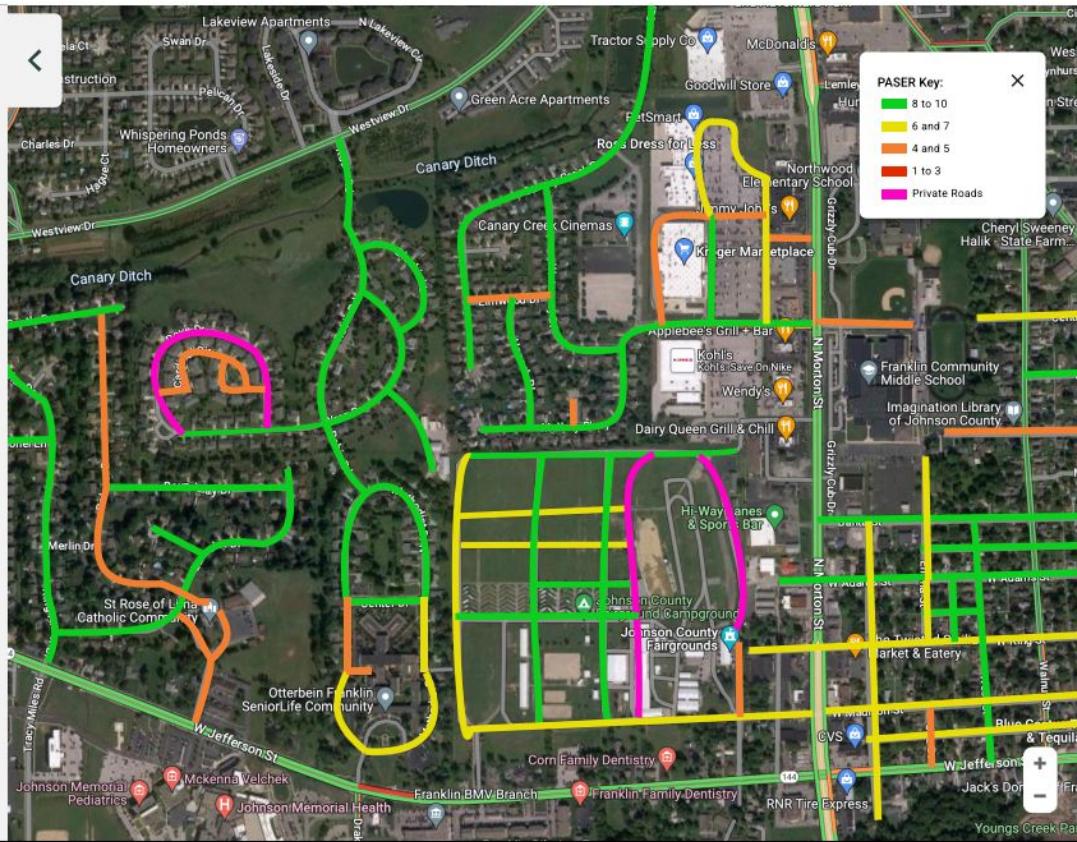
Your Road Inventory

[View As List](#)

 Search For Roads

Map View: 68 roads

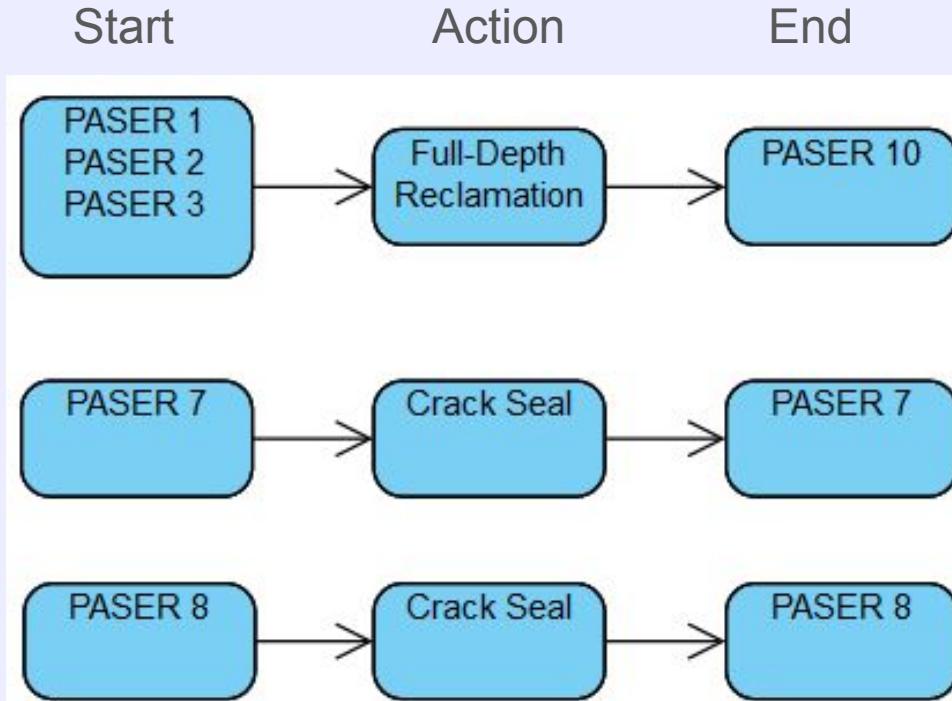
Filter

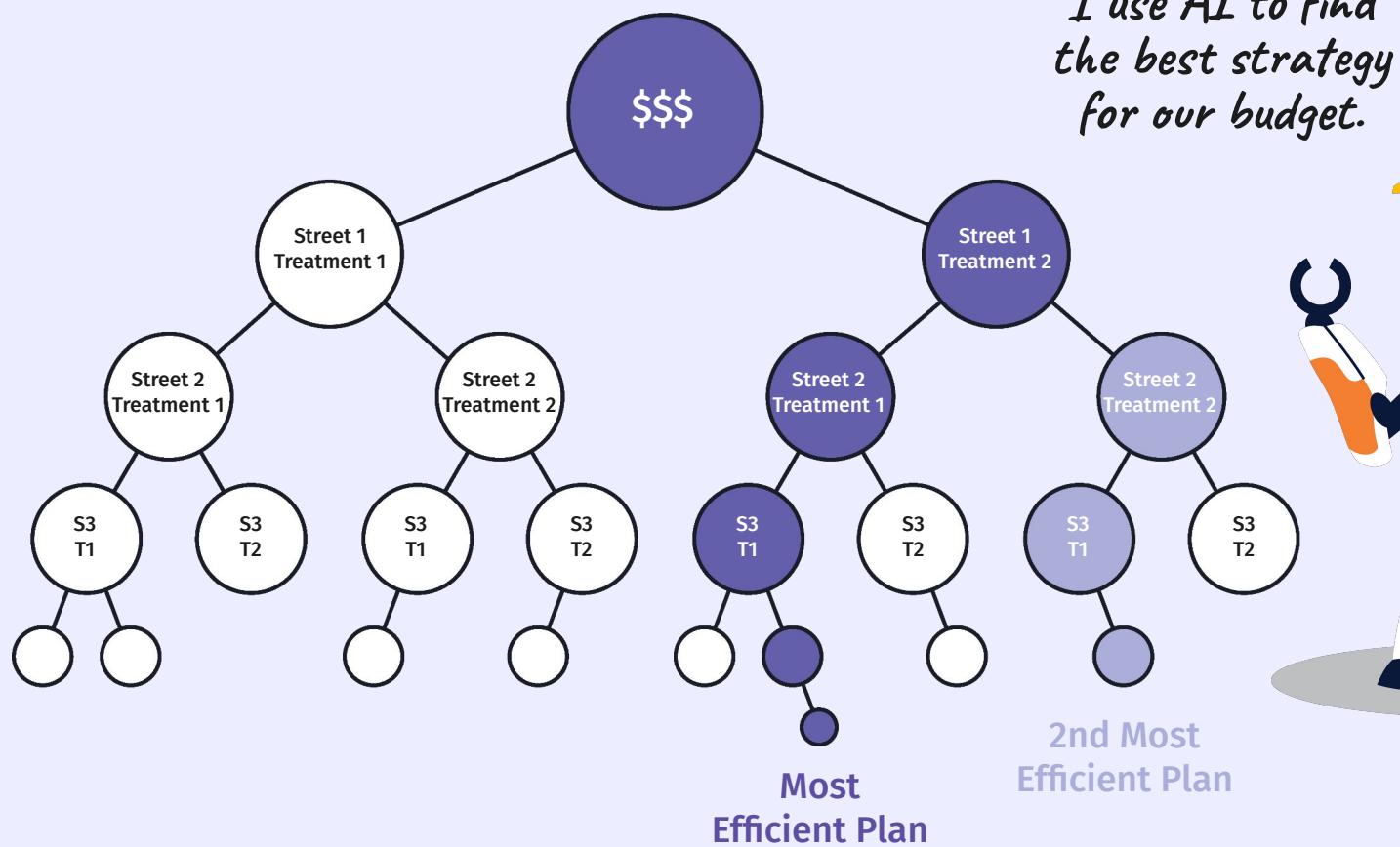


Road Surface Data

Designation	Roadway	From	To	Rating	Date Rated	Classification	2020 Treatment
16	CR 450 E	Pavement Change	CR 750 S	3	08/04/21	Local	
214	CR 700 E	1760' N of CR 300 S	1760' S of CR 200 S	3	08/04/21	Local	
206	Nesse St	S Main ST	Hardesty St	3	08/04/21	Local	
18	Wolfe RD	Town Limits	CR 750 S	3	08/04/21	Local	
113	CR 450 S	CR 500 E	CR 575 E	4	08/04/21	Local	
183	Indigo Blue BLVD	Albert S White DR	Lime Light LN	4	08/04/21	Local	
224	Whitestown PKWY	Maple Grove BLVD	Town Limits	4	08/04/21	Minor Arterial	

Treatment Model





*I use AI to find
the best strategy
for our budget.*



Highway Asset Mgmt

Budget Optimizer

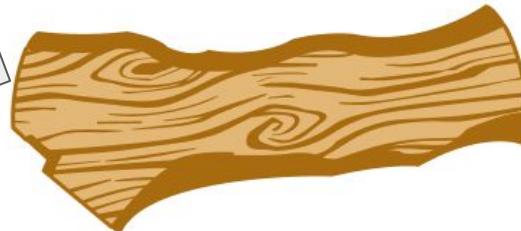
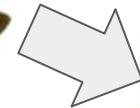
Optimization

Prediction

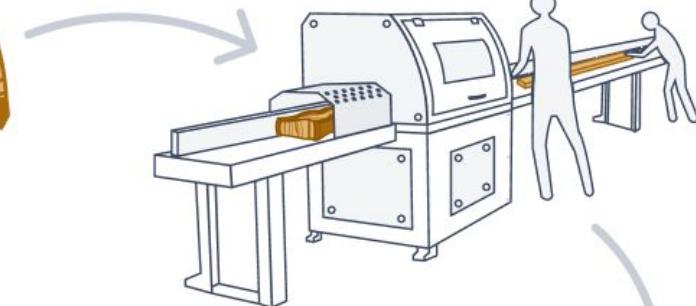
NLP



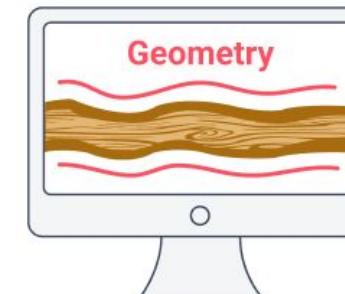
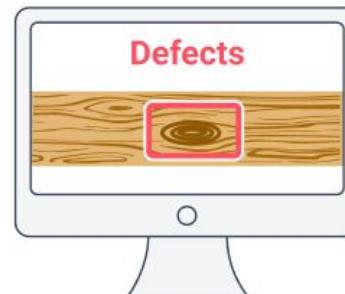
Raw Lumber

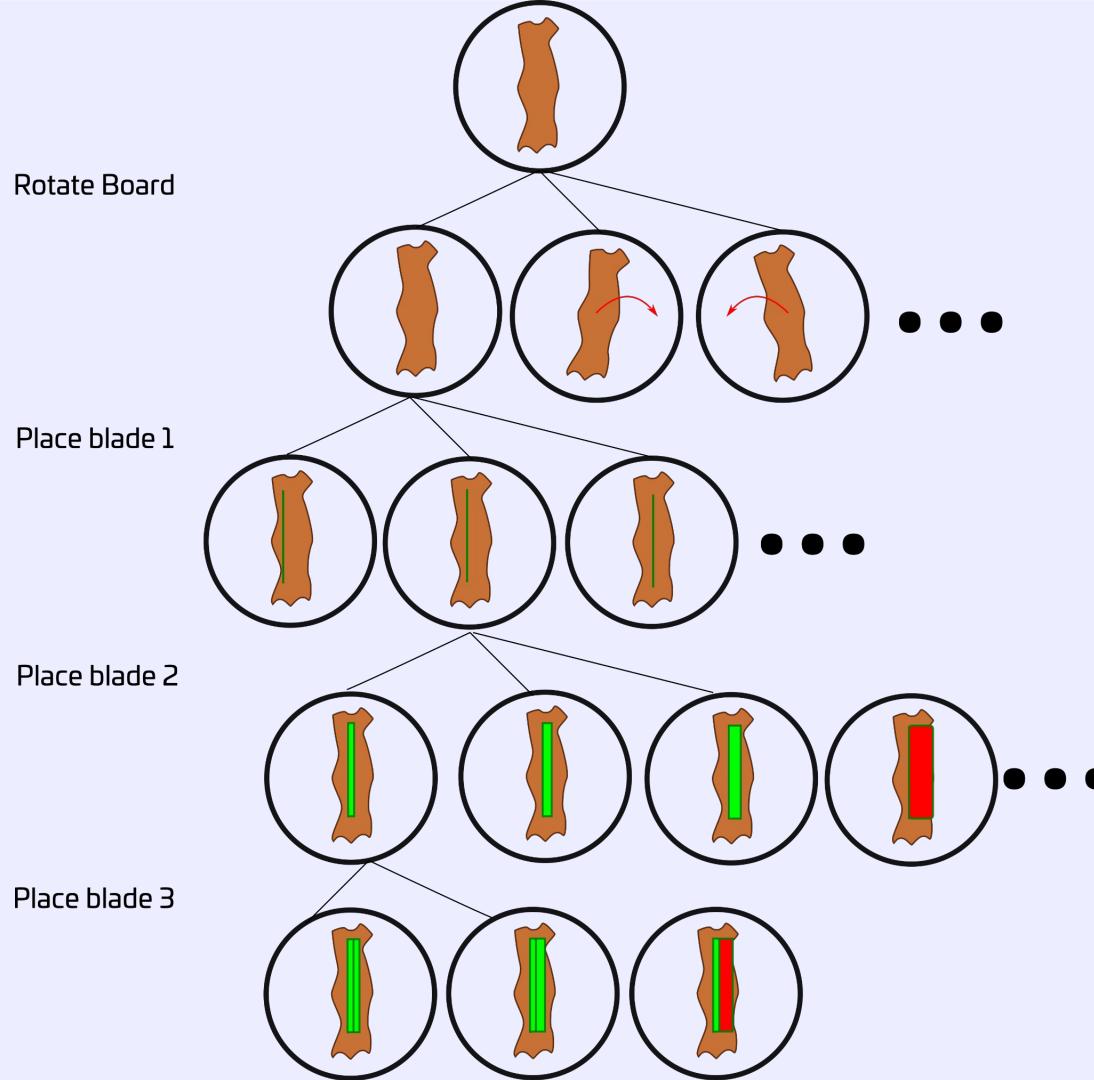


Optimizing Edger



We optimized against two major constraints

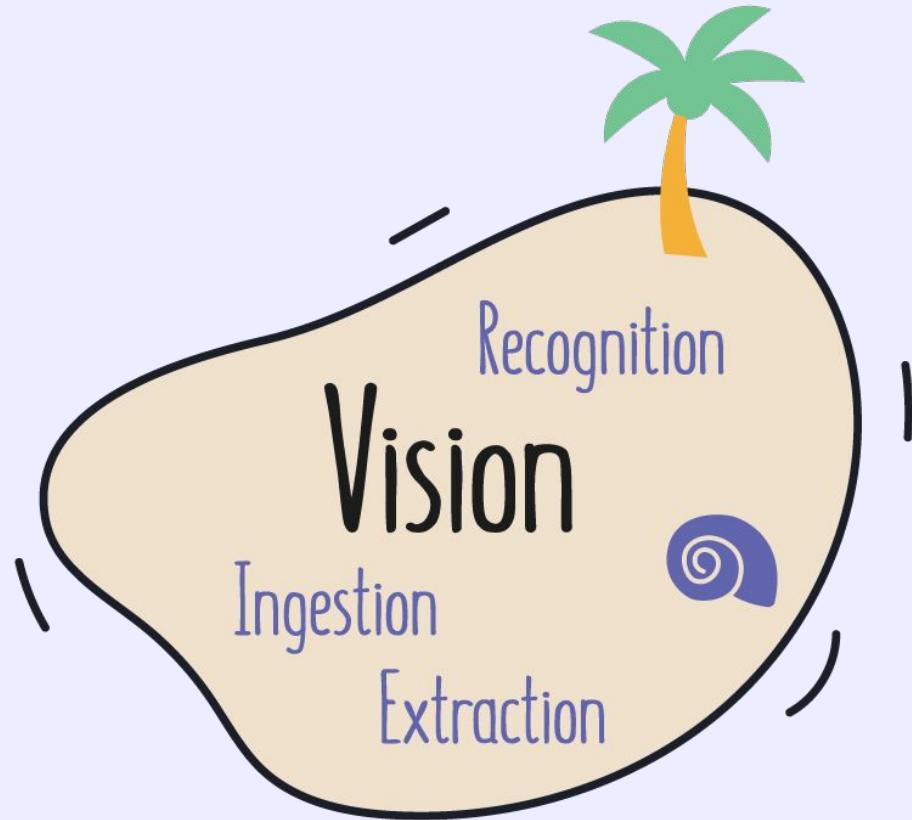




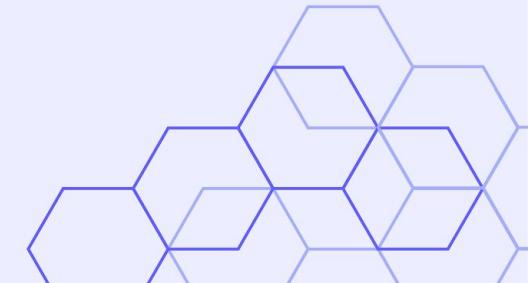
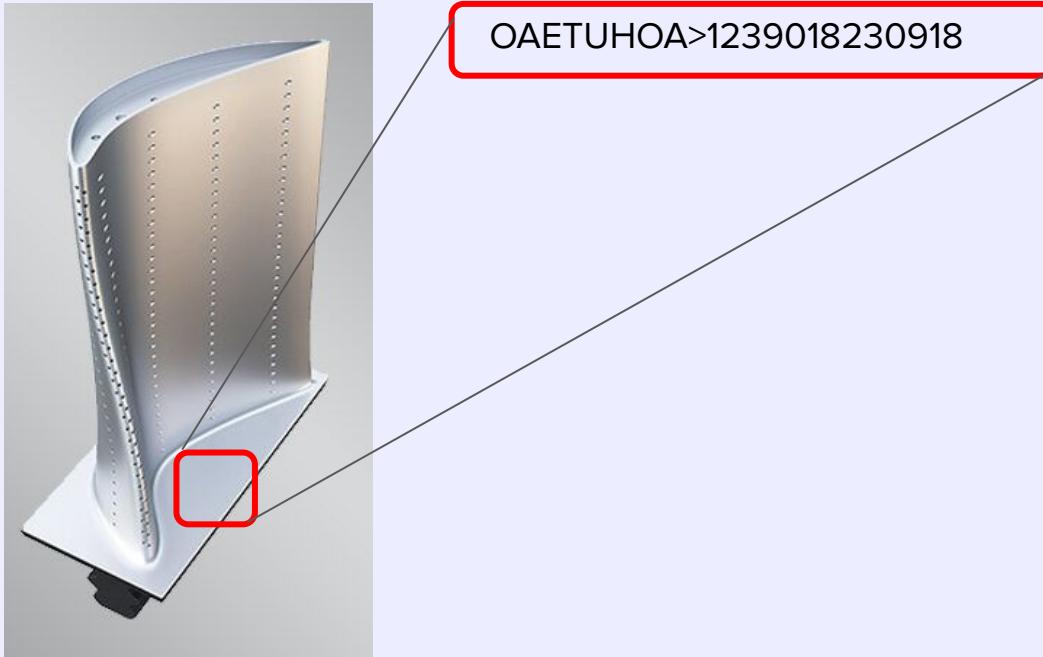
coin-or/Clp

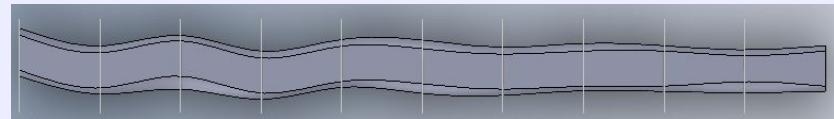
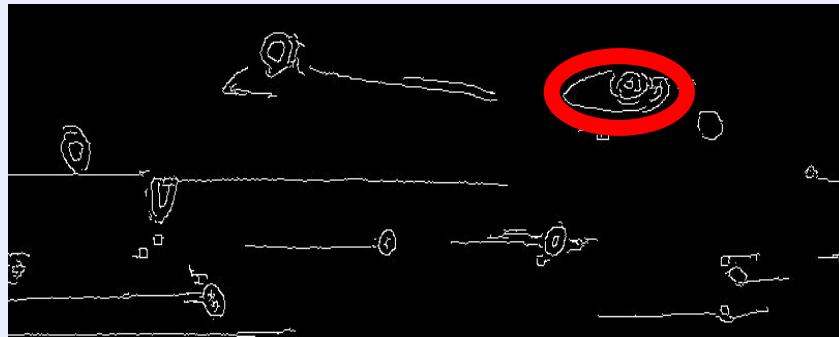
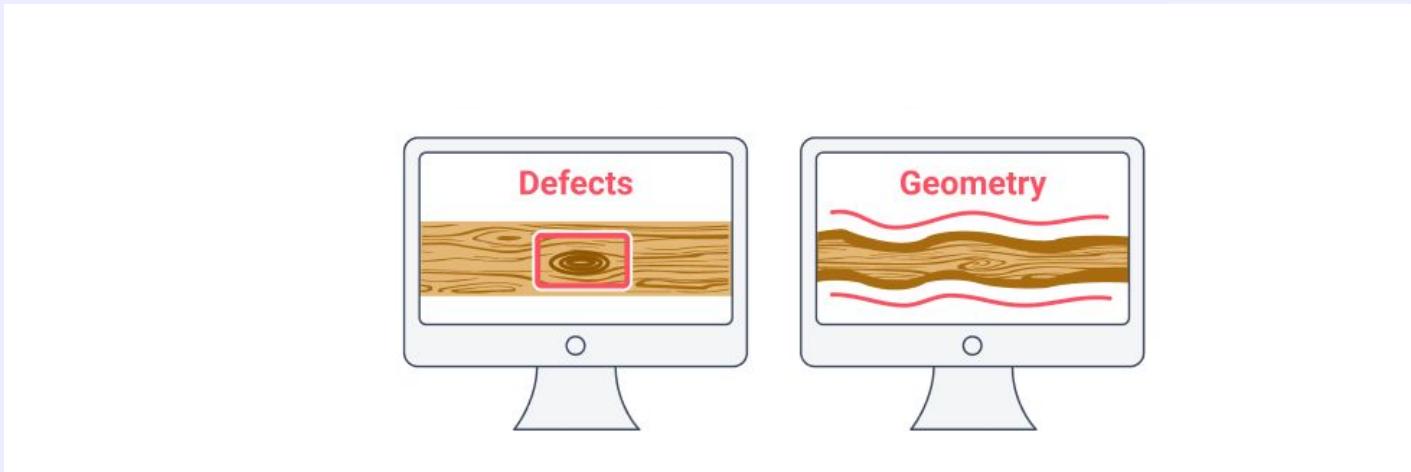
COIN-OR Linear Programming Solver

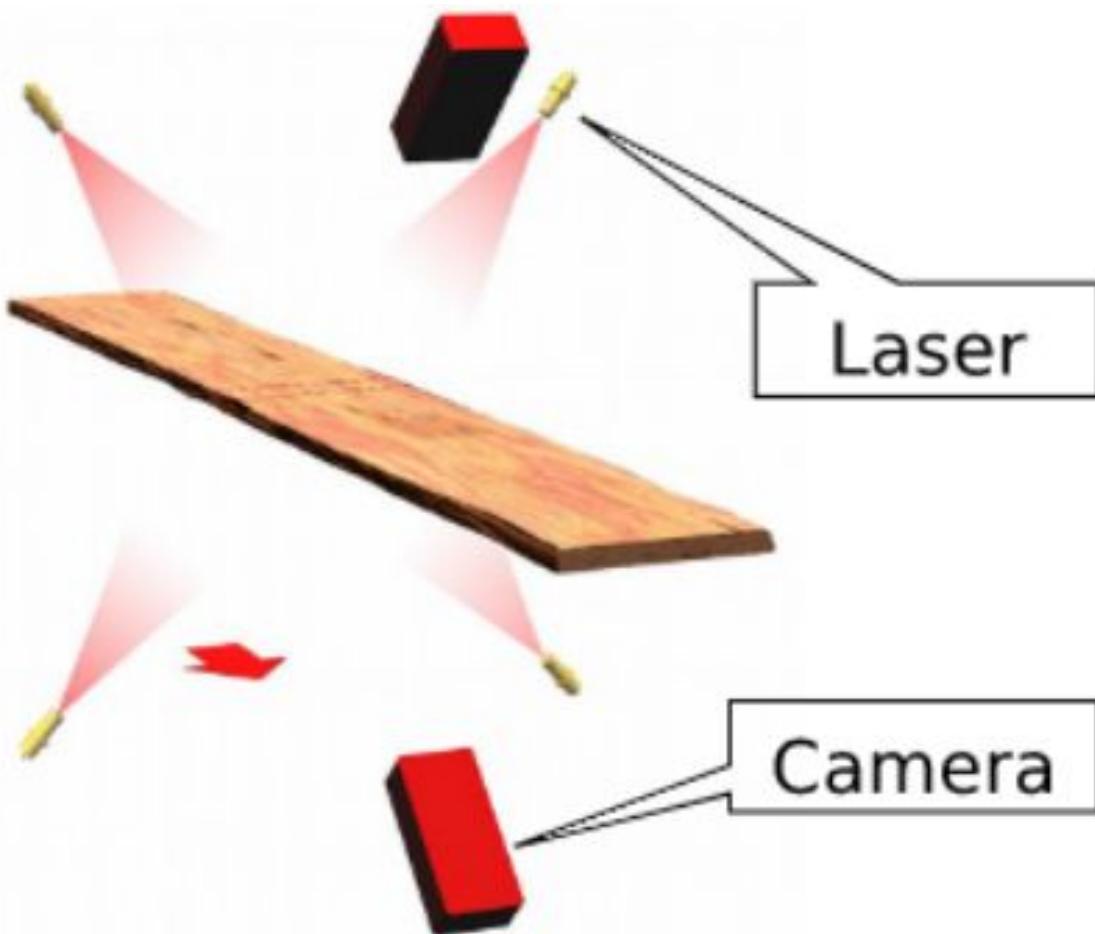


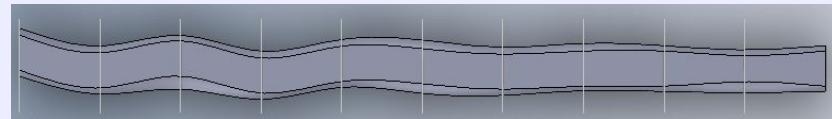
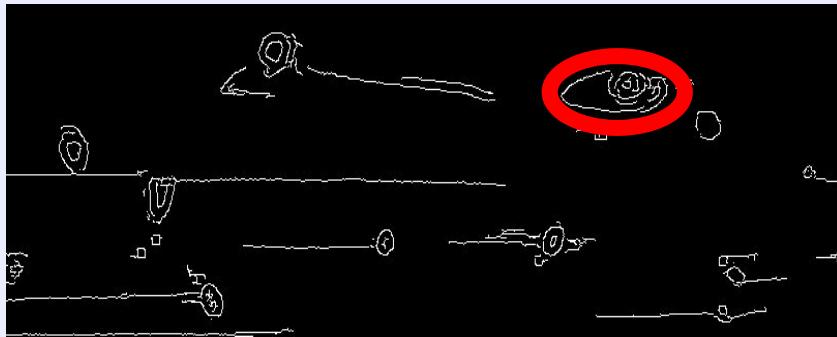
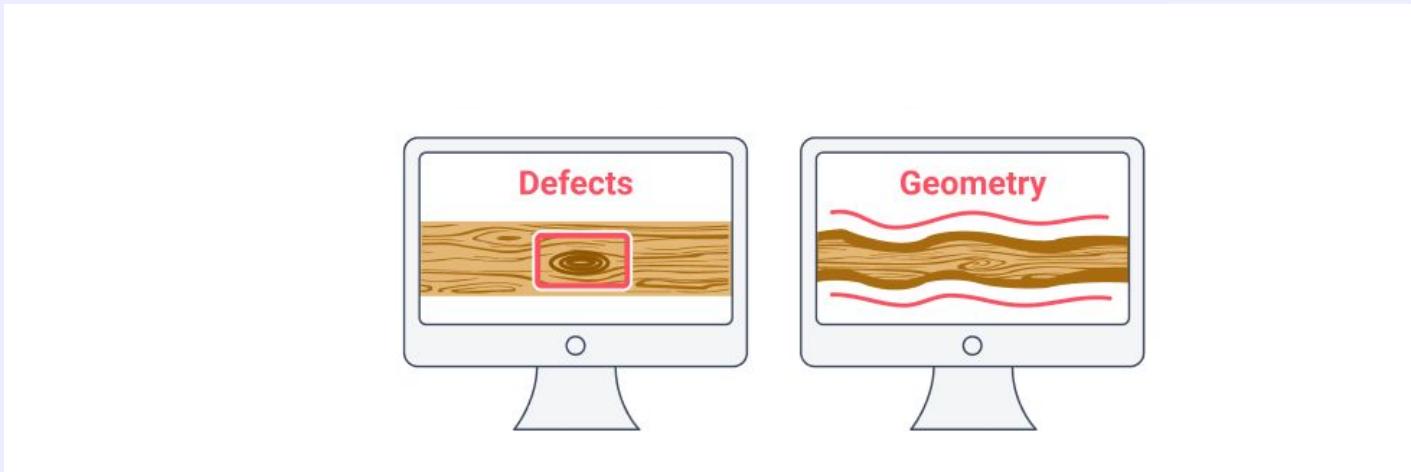


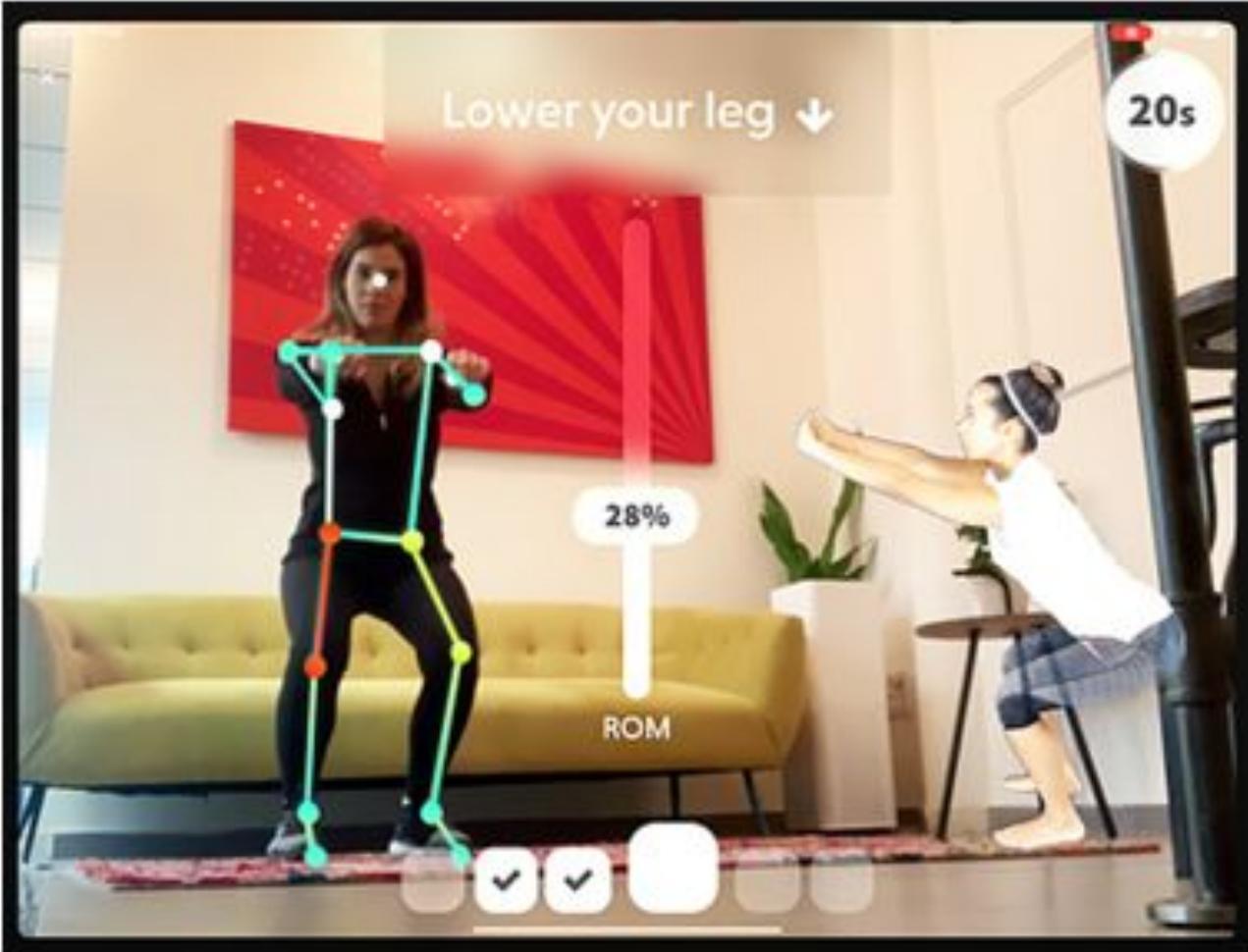
Identifying Serial Numbers With Machine Vision



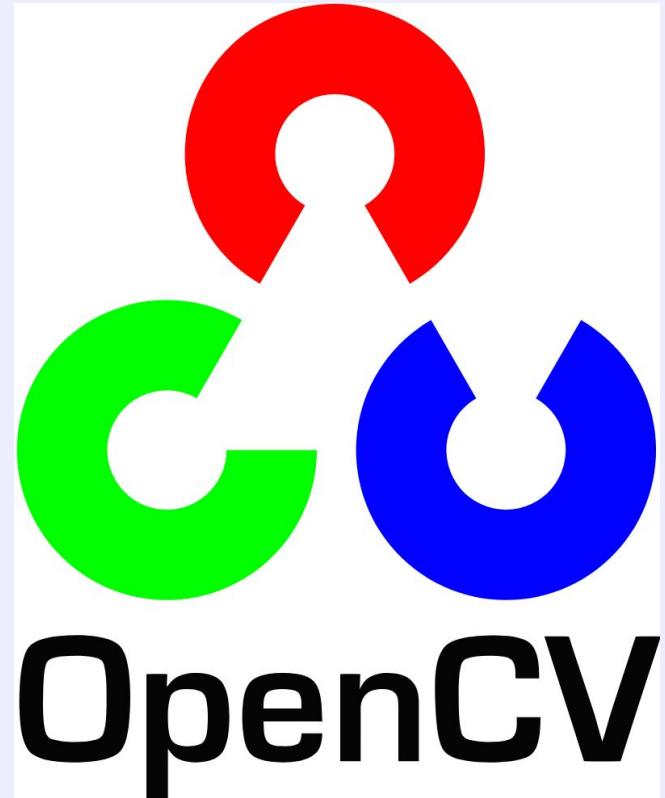
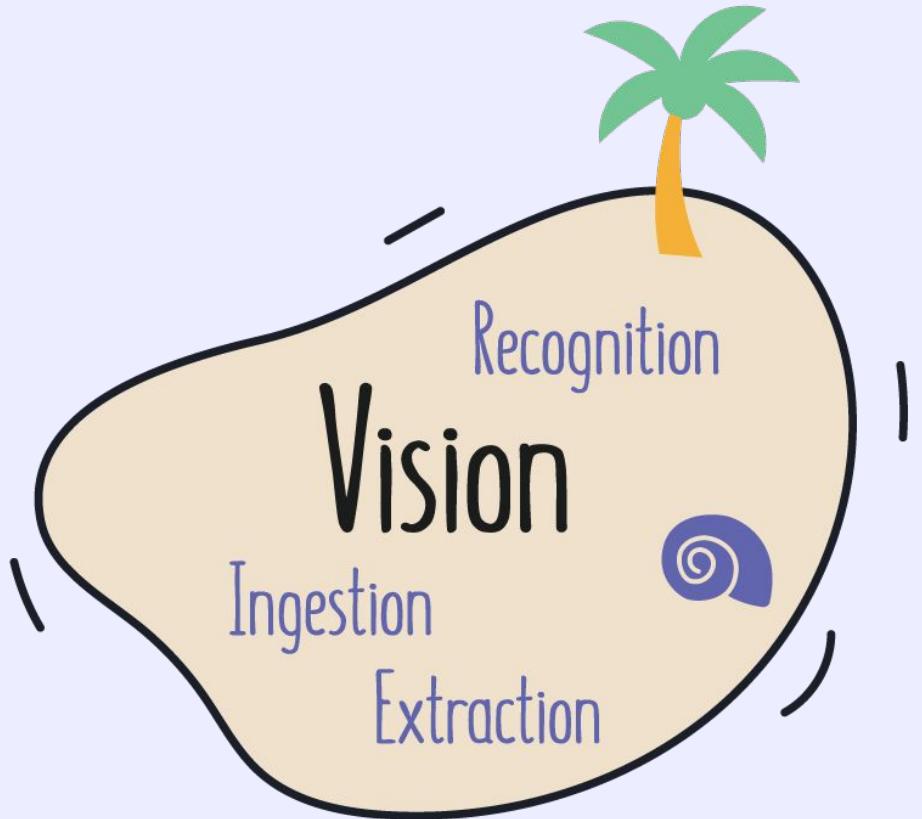




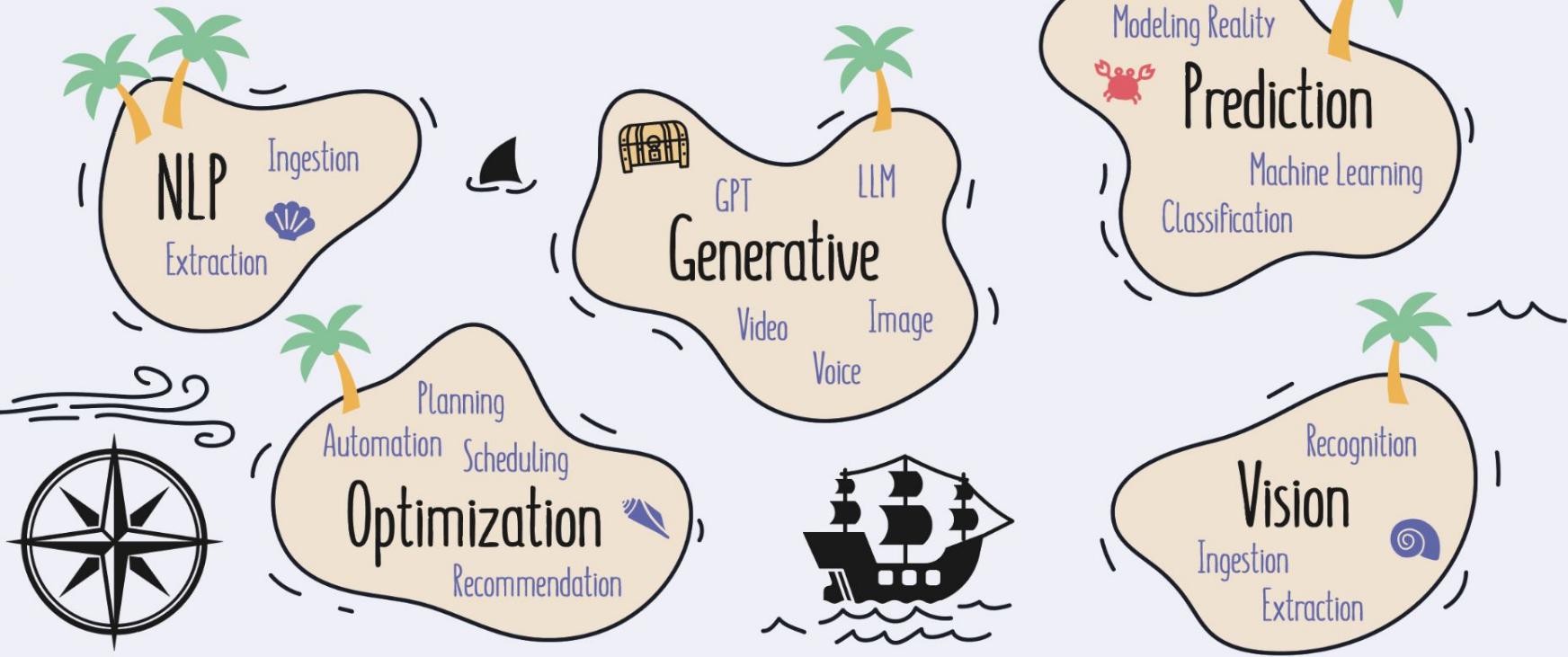




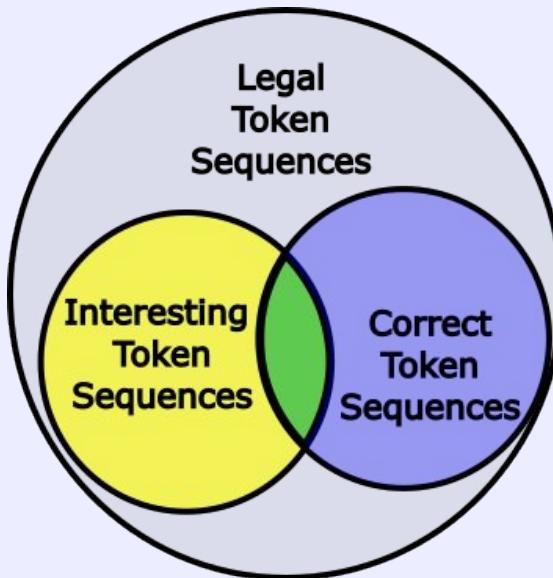
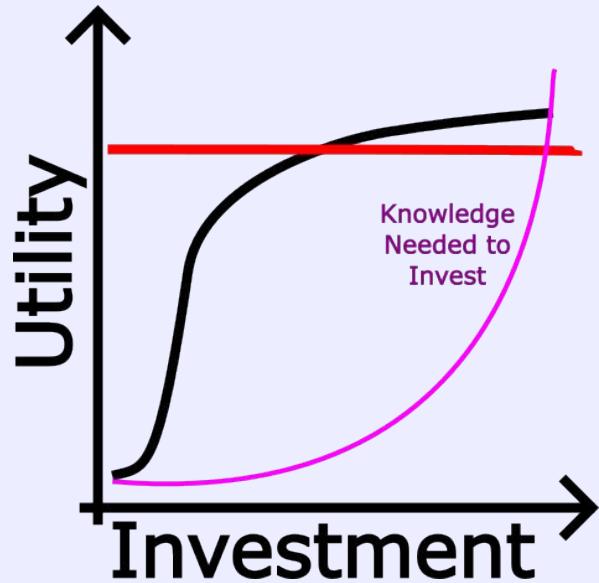
From <https://www.linkedin.com/company/virtual-health-pt>

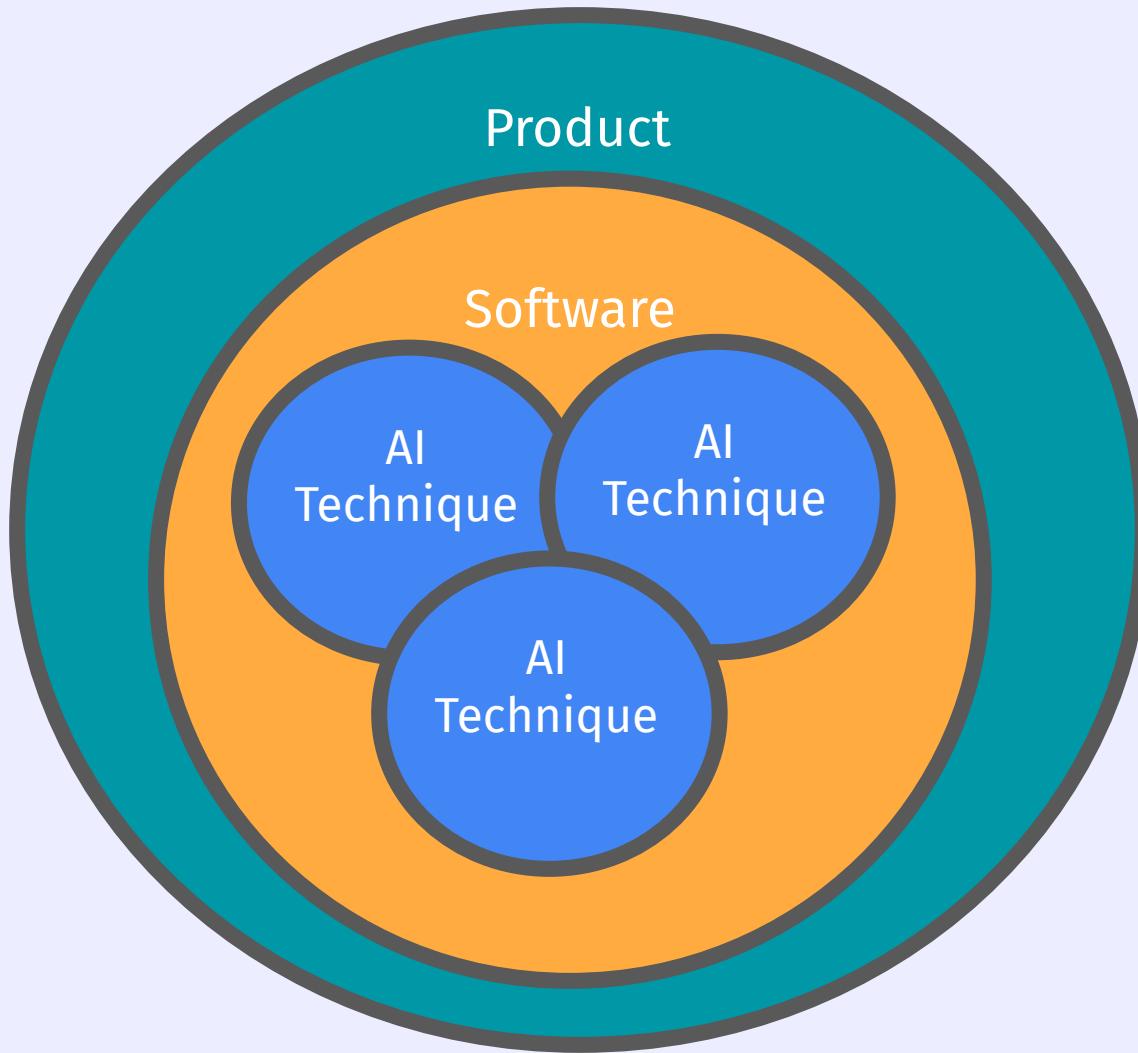


NAVIGATING AI



When Would I Move Away From LLMs?





NAVIGATING AI



vaderSentiment

NLP

Extraction



NLTK

coin-or/Clp

COIN-OR Linear Programming Solver



COIN-OR

Optimization



OptaPlanner



OpenAI

Generative

Video

Image

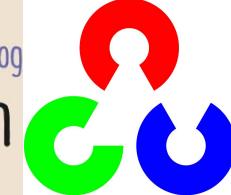
Voice



Gymnasium

Prediction

scikit
learn



Vision

Ingestion

Extraction

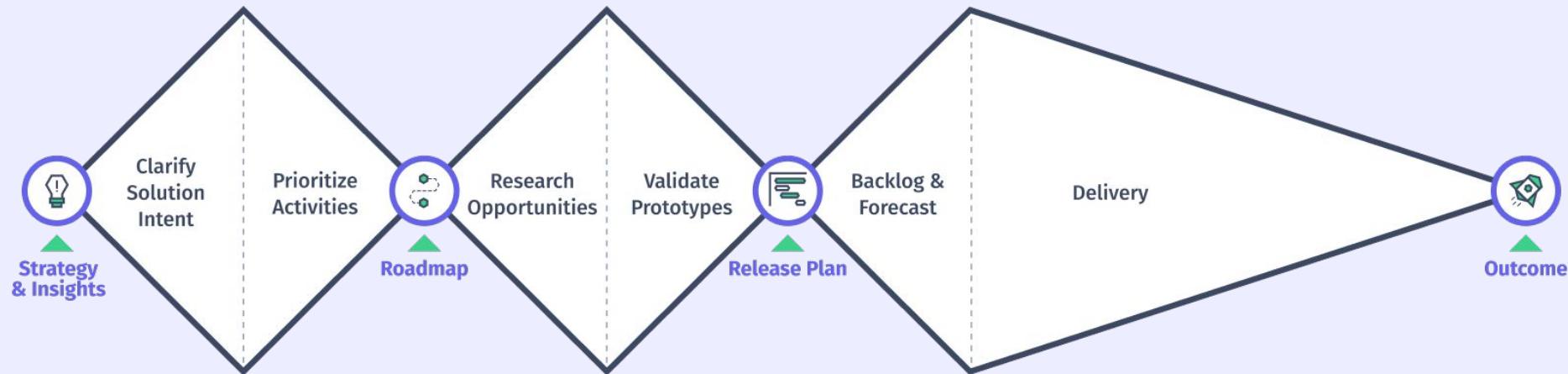
OpenCV



Summary

- LLMs are great, but they aren't always the answer
 - Highly constrained problems
 - Domains with high cost of failure
- Other AI Technologies Exist
 - Knowing the Right One Is Key
- Open Source Implementations Are Available to Get Started With!
- You'll probably be using several in concert to build a product

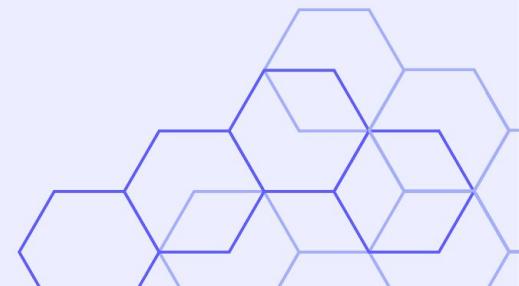
When Would I Move Away From LLMs?



How To Get Started With AI: Moving Beyond ChatGPT

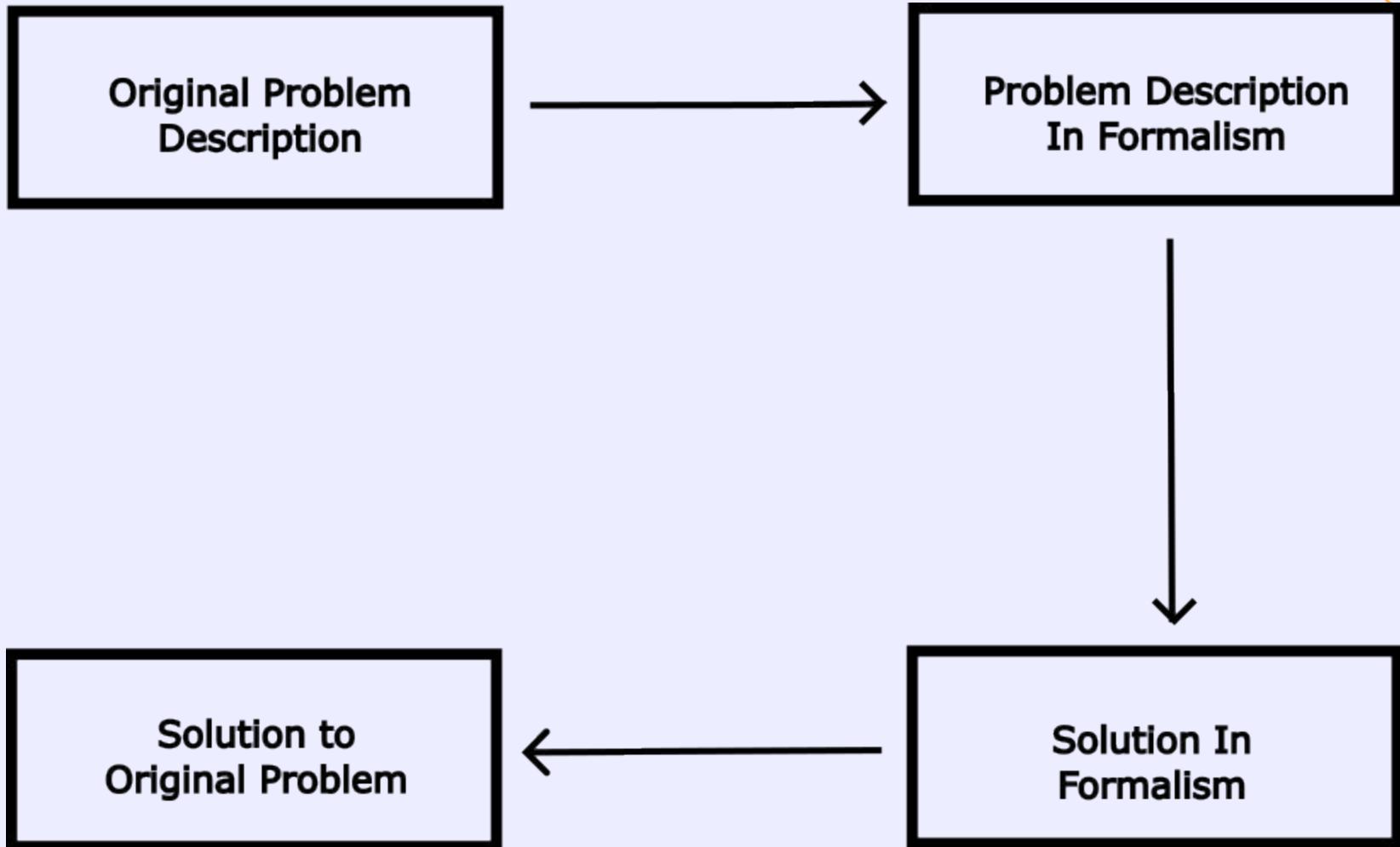


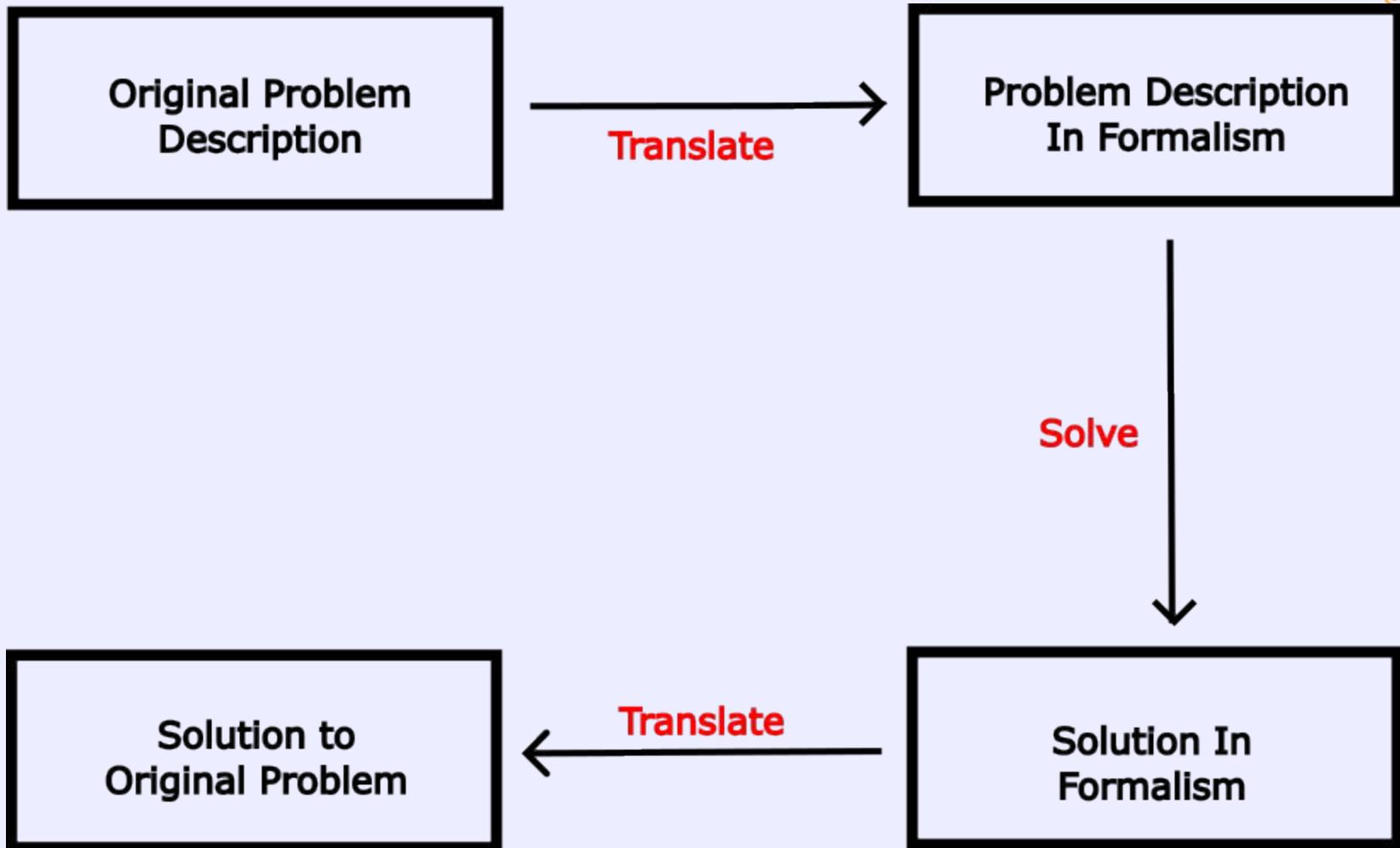
Jordan Thayer
AI Strategist



Talk Roadmap / Outline

- Why Would You Move Beyond ChatGPT / LLMs
- What can Non-LLM AI Techniques Do?
- Where do I get started?





NAVIGATING AI

