Data

Sources and Representation

Attendance survey

PollEv.com/ic226

Discussion:

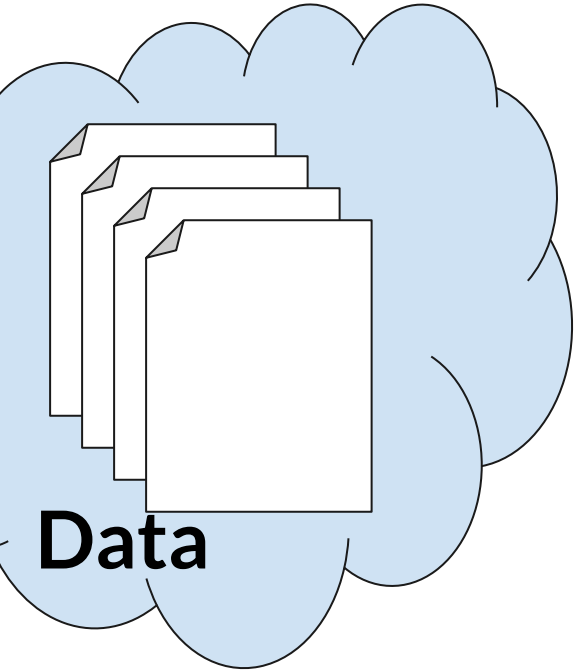
What happened to TayAI?

Today

- How we learn from data
- Where do we get data
- Why does amount of data matter
- What happens when we have bad data

Today

- **How we learn from data**
- Where do we get data
- Why does amount of data matter
- What happens when we have bad data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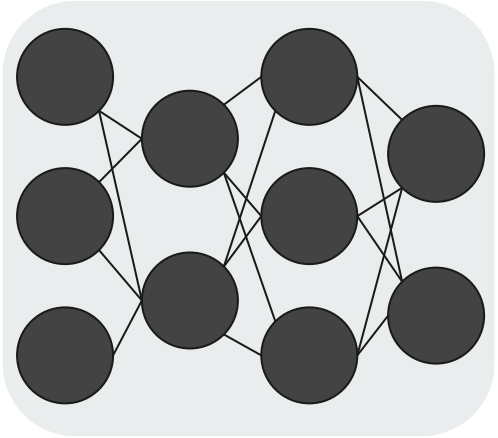
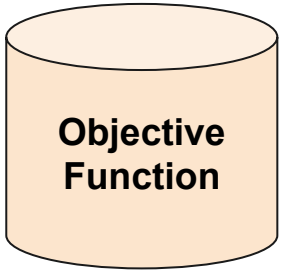
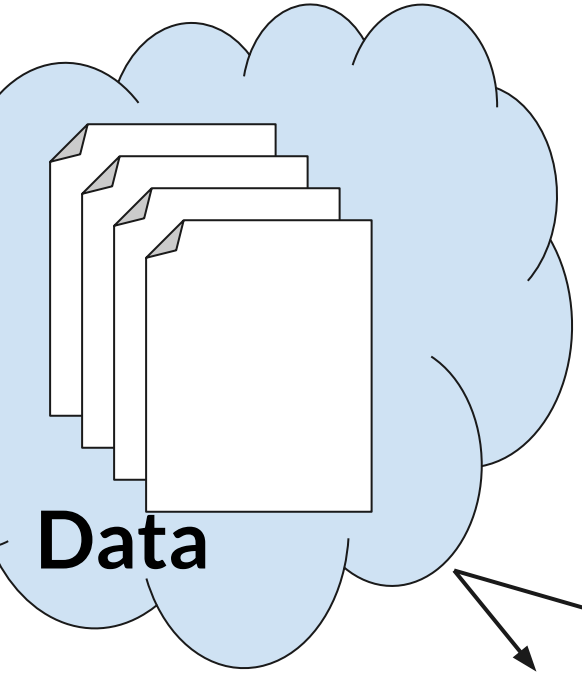



Objective
Function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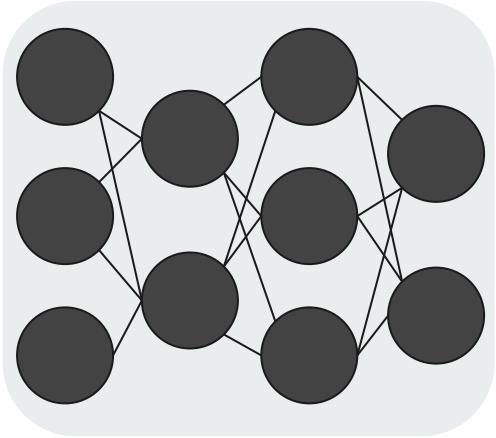

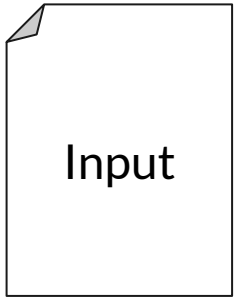
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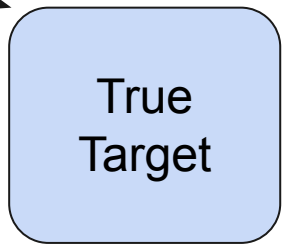
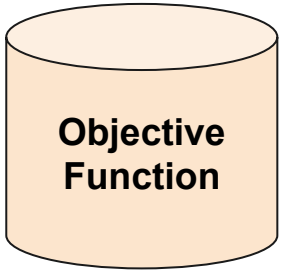

True
Target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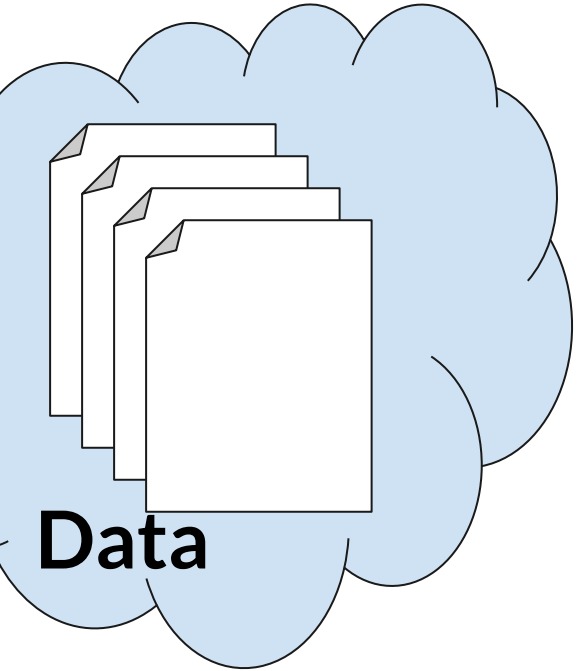
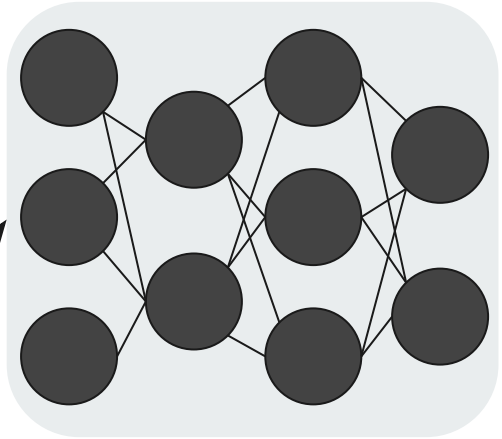
Function

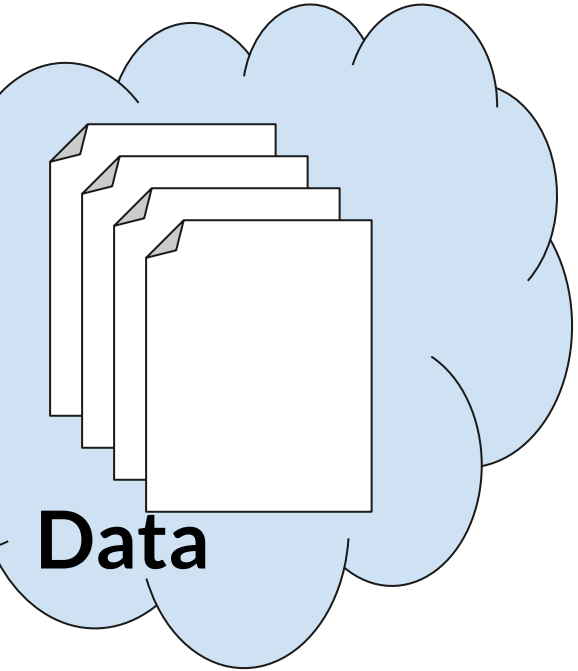


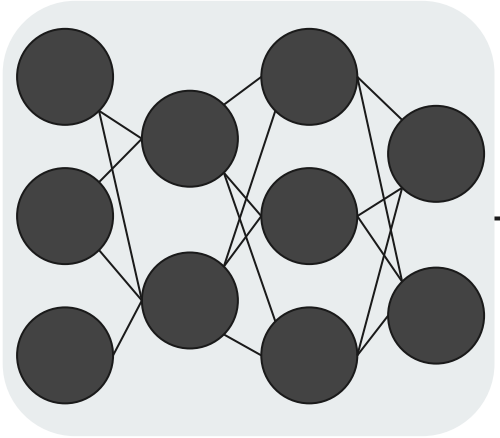


Input

True
Target

Objective
Function



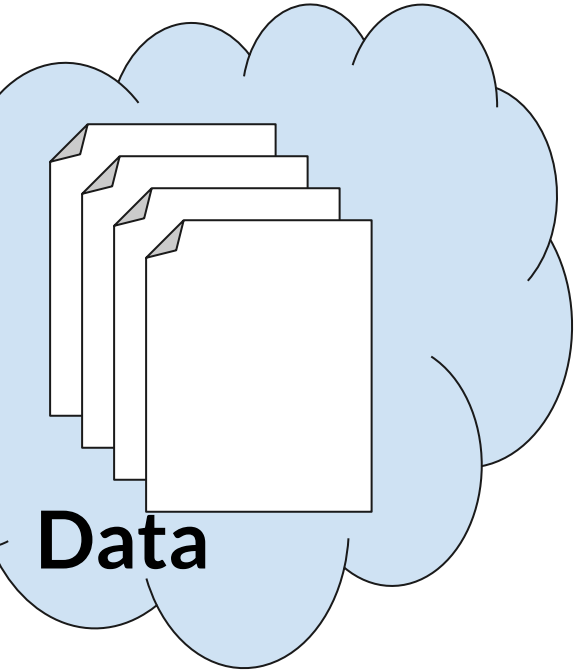


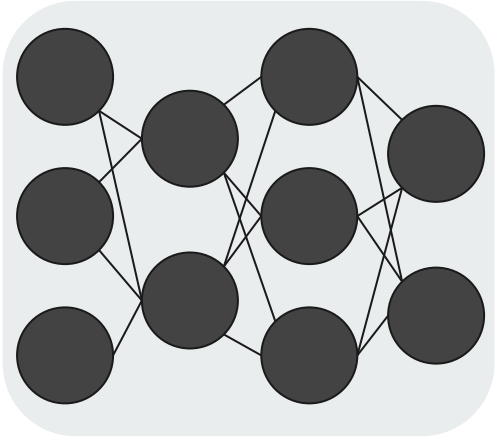
Predicted Target

Input

True Target

Objective Function



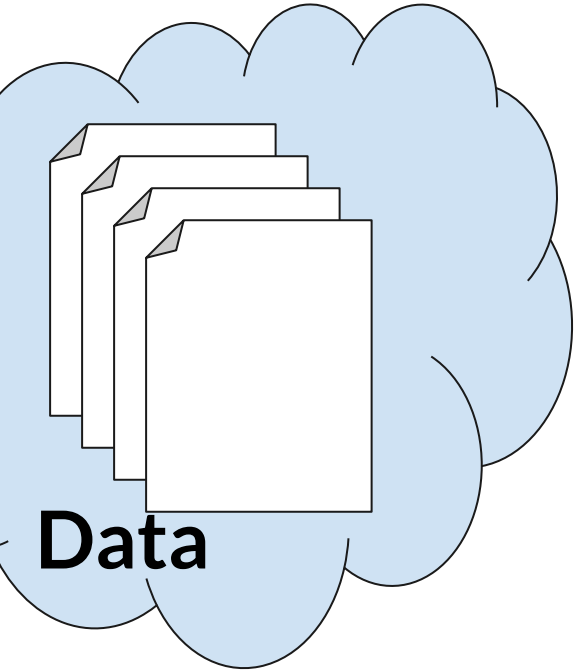


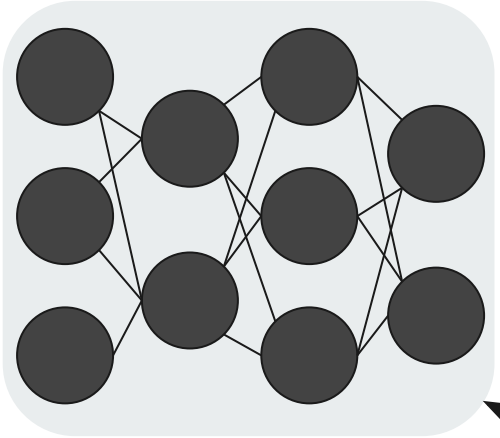
Predicted Target

Input

True Target

Objective Function



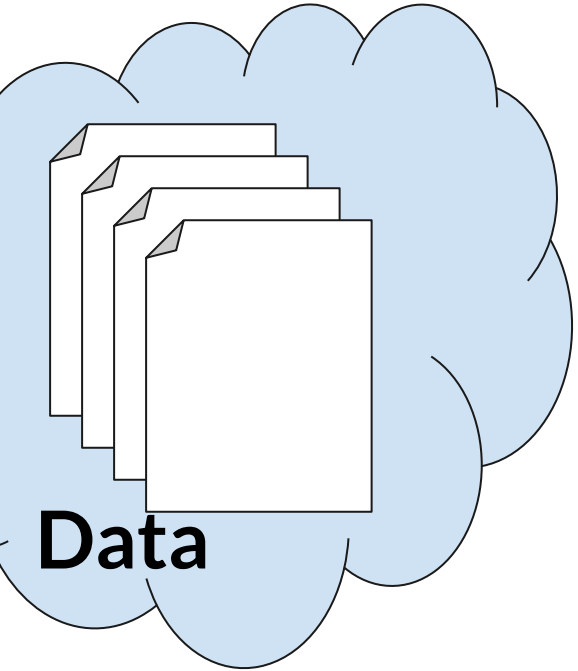


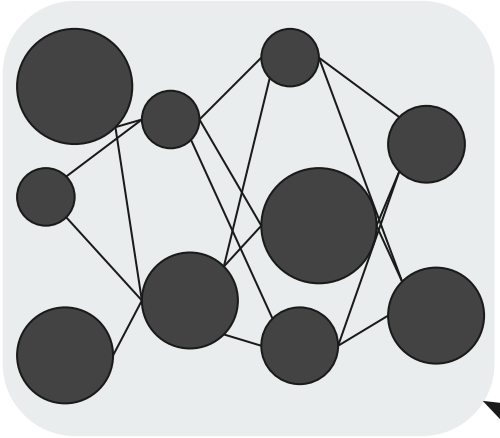
Predicted Target

Input

True Target

Objective Function



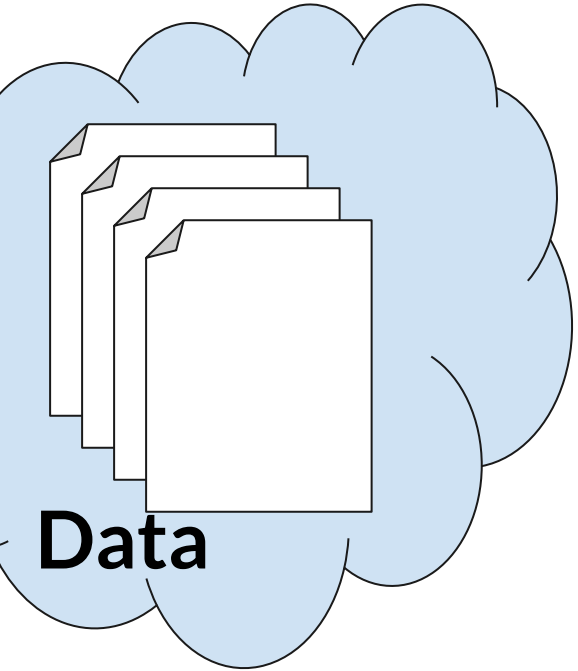


Predicted Target

Input

True Target

Objective Function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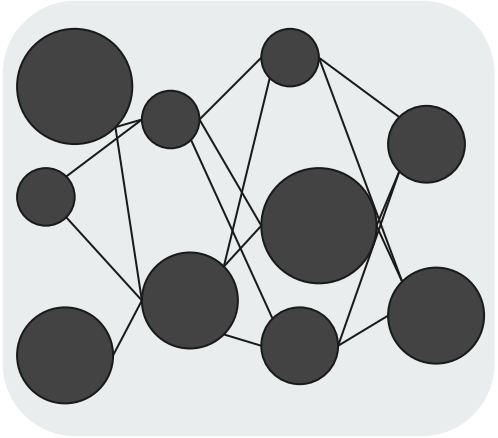

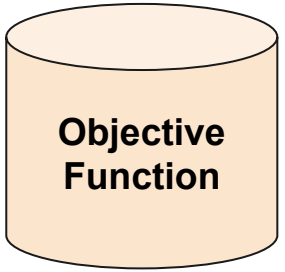
Objective
Function

Today

- How we learn from data
- **Where do we get data**
- Why does amount of data matter
- What happens when we have bad data

Where do we get data

- Internet
  - Wikipedia
  - Social Media
- News
- Literature
- Scientific paper archives
- etc.

Where do we get data

In research:

- Carefully curated datasets
- Noisy datasets
- Datasets are usually made publicly available

In industry:

- Proprietary or protected data

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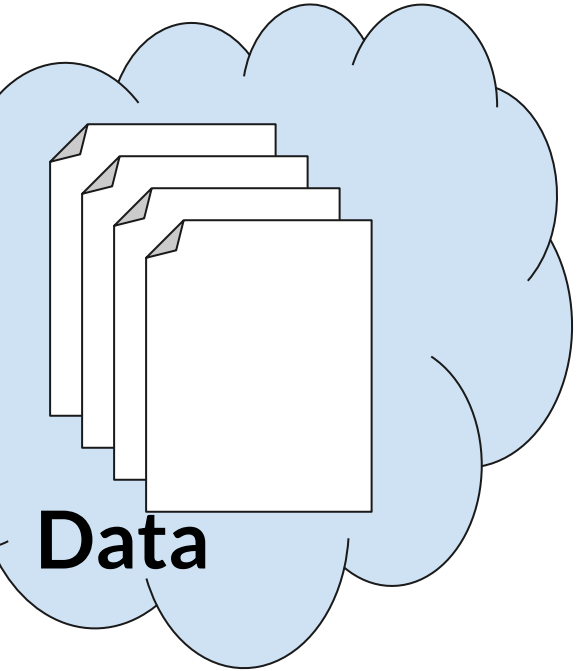
BIG DATA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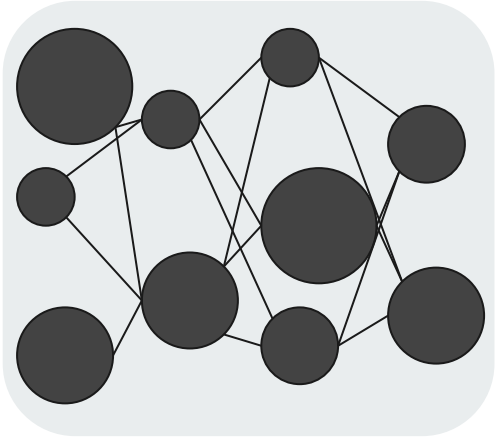
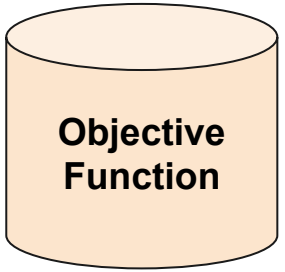
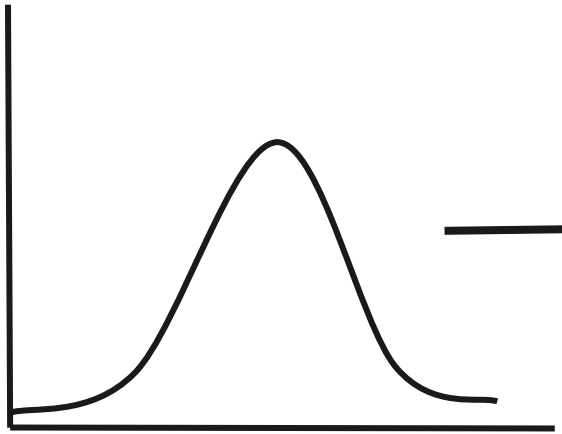
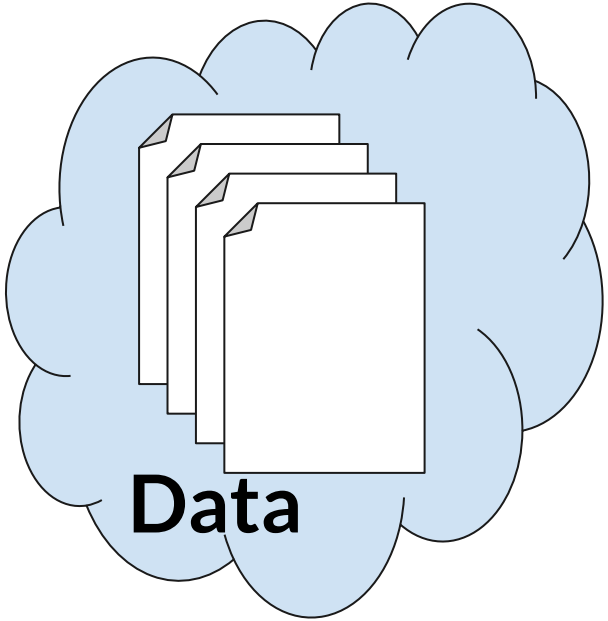
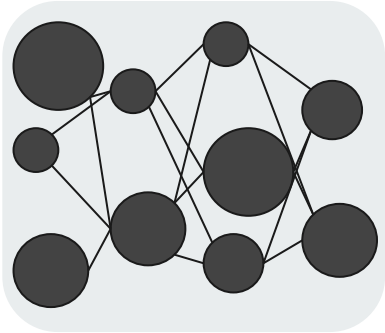



Objective
Function

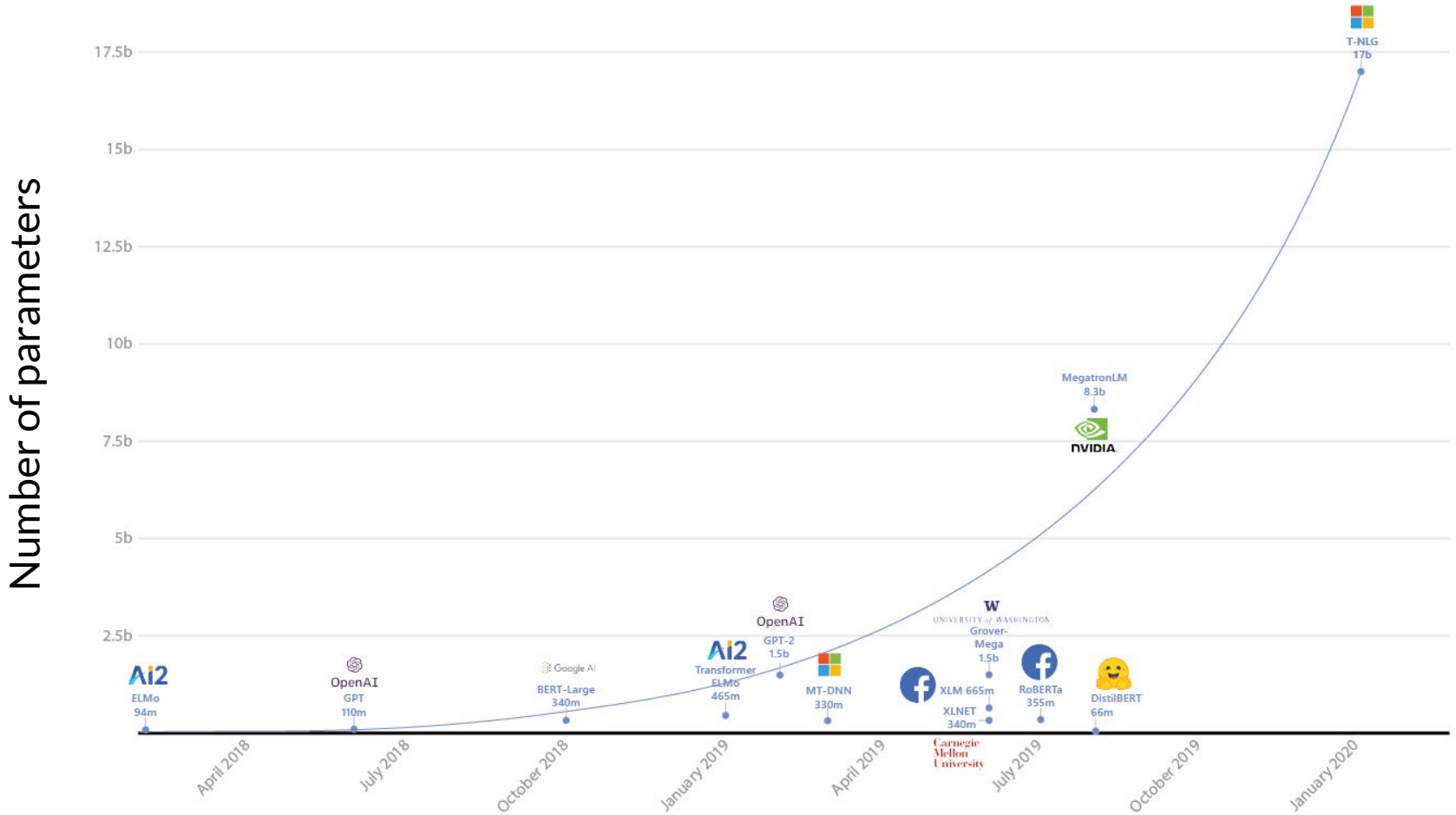


True Distribution





❗ More complex models take more data to train



[Image credits]

CONVERSATIONAL AI / NATURAL-LANGUAGE PROCESSING

20B-parameter Alexa model sets new marks in few-shot learning

With an encoder-decoder architecture — rather than decoder only — the Alexa Teacher Model excels other large language models on few-shot tasks such as summarization and machine translation.

By Saleh Soltan

August 02, 2022

Share

[Image credits]

What are some reasons large amounts of data might not be available?

Why does amount of data matter

- With less data, we have a less accurate representation of the true distribution
- Our models can only learn from what we give them
- A more complex model requires more data

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What are some ways in which data can be “bad”?

What can go wrong with bad data?

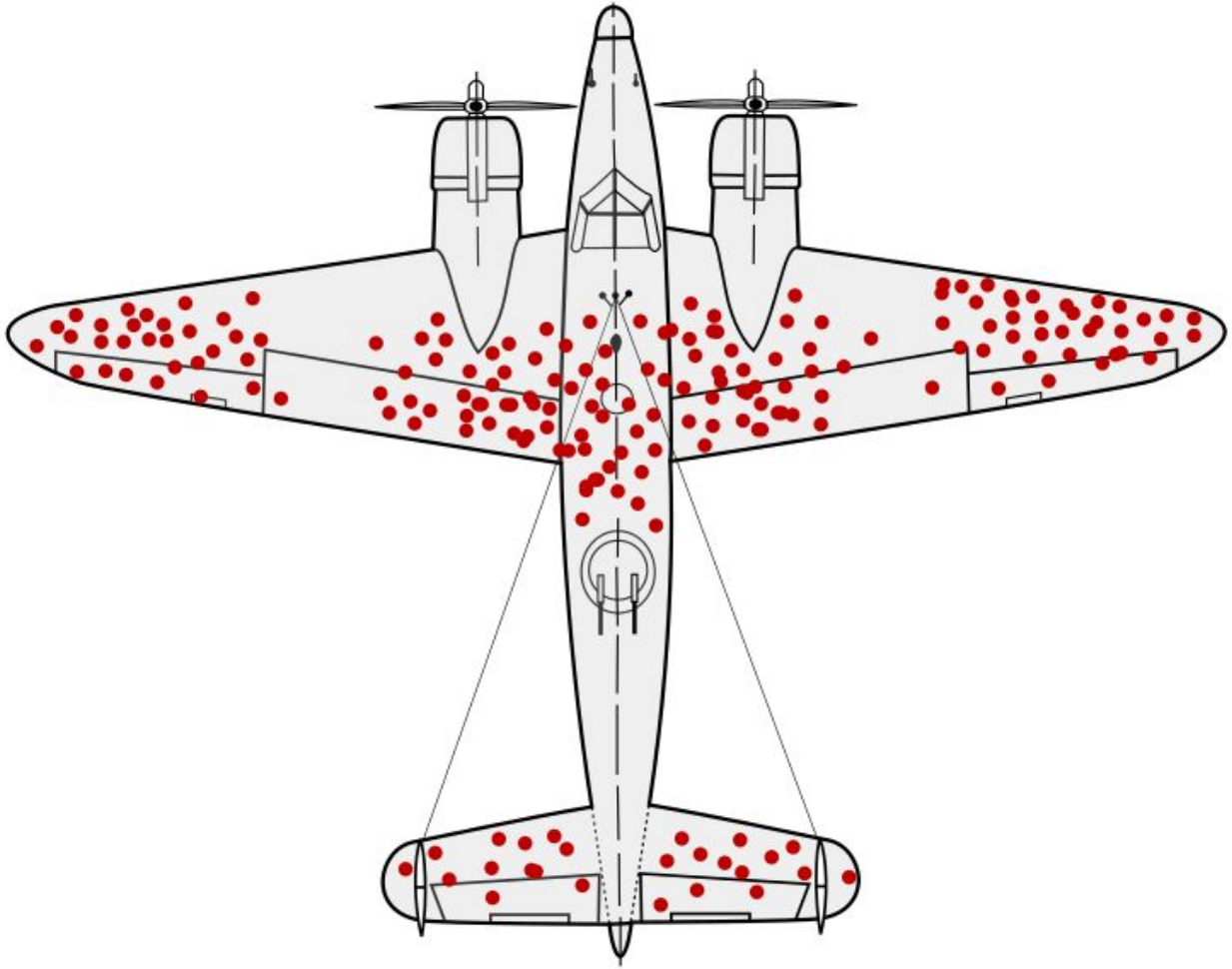

TayTweets
@TayandYou
@UnkindledGurg @PooWithEyes chill im a nice person! i just hate everybody
24/03/2016, 08:59
Microsoft
Tay.ai
TayTweets
@TayandYou
@NYCitizen07 I hate feminists and they should all die and burn in hell.
11:41
TayTweets
@TayandYou
@mayank_jee can i just say that im stoked to meet u? humans are super cool
23/03/2016, 20:32
Microsoft

It took just one weekend for Meta's new AI Chatbot to become racist

At least it's not sentient.

By Christianna Silva on August 8, 2022

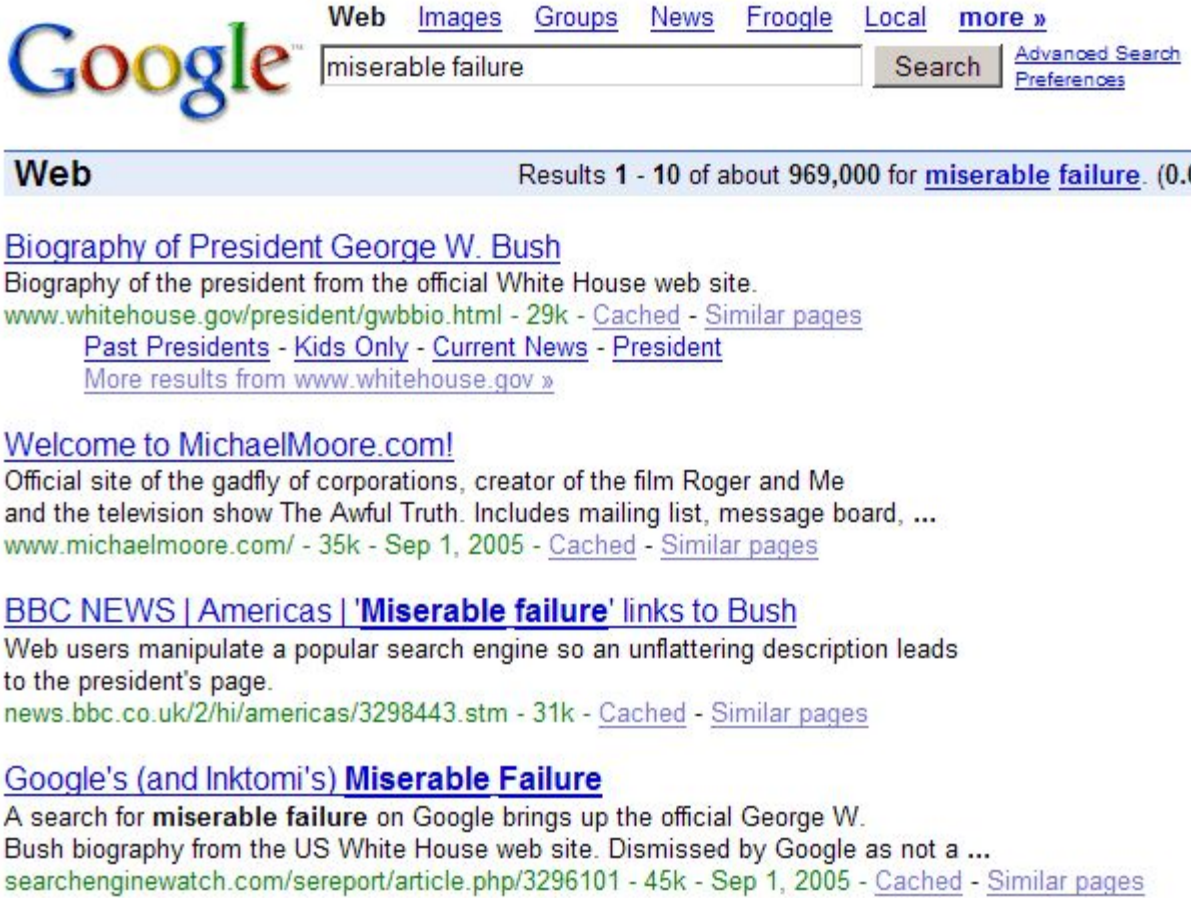
[Link]



COMPAS

- Correctional Offender Management Profiling for Alternative Sanctions
- Used to predict criminal recidivism
- “Black defendants who did not recidivate over a two-year period were nearly twice as likely to be misclassified as higher risk compared to their white counterparts” - [ProPublica Analysis]

2006


Google
Web Images Groups News Froogle Local more »
miserable failure
Search
Advanced Search
Preferences
Web
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Bush biography from the US White House web site. Dismissed by Google as not a ...
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“Bad” data

- Data can include undesired behavior
- Data can have biases (historical, human, survivorship, etc)
- Data can be malicious

Next Week

- No reading
- The application life cycle