

- Confidential -

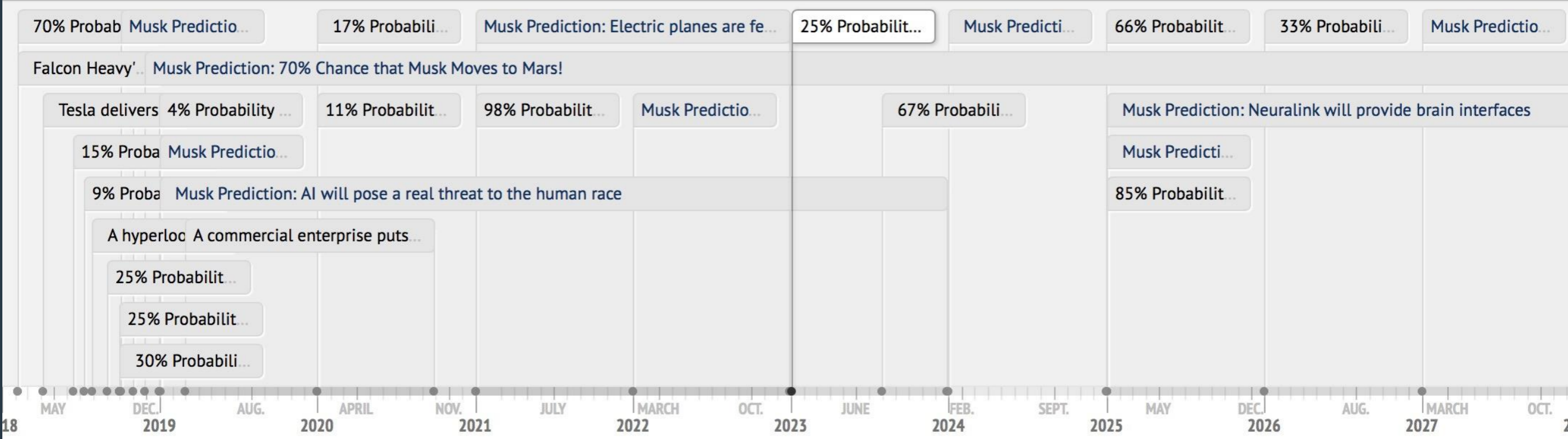
All predictions are probabilities

Two useful notions of probability $P(x)$

1. Relative frequency of x , compared with all possibilities, in many trials.
2. Degree of belief: a rational agent would bet at higher than $(1-P):P$ odds

Verbal Expression	Probability
Impossible	0.00
Small Possibility	0.10
Small Chance	0.20
Somewhat Doubtful	0.30
Possible	0.40
Toss-up	0.50
Somewhat Likely	0.60
Likely	0.70
Very Likely	0.80
Quite Certain	0.90
Certain	1.00

Probability is the right way to have both precision and uncertainty.



JANUARY 3, 2023

25% PROBABILITY THAT ELON MUSK WILL EAT HIS HAT WITH A SIDE OF MUSTARD

Question: Will United Launch Alliance's Vulcan rocket fly by 2023 (a.k.a. Will Elon Musk eat his hat with a side of mustard?)

Community Prediction: 25% likely

After a stunning success with the Falcon Heavy, Elon Musk took aim at his rivals in the rocketry business. In a brisk back-and-forth on twitter, upon the suggestion that United Launch Alliance's upcoming "Vulcan" rocket would be carrying payloads in the early 2020s, Musk responded "I will seriously eat my hat with a side of mustard if that rocket flies a national security spacecraft before 2023."

[Link to Metaculus question](#)

Human vs. machine predictions

Projections using data & modeling

- Great when you have the data or fundamental theory, and a skilled person to analyze them and create a model.

Machine learning

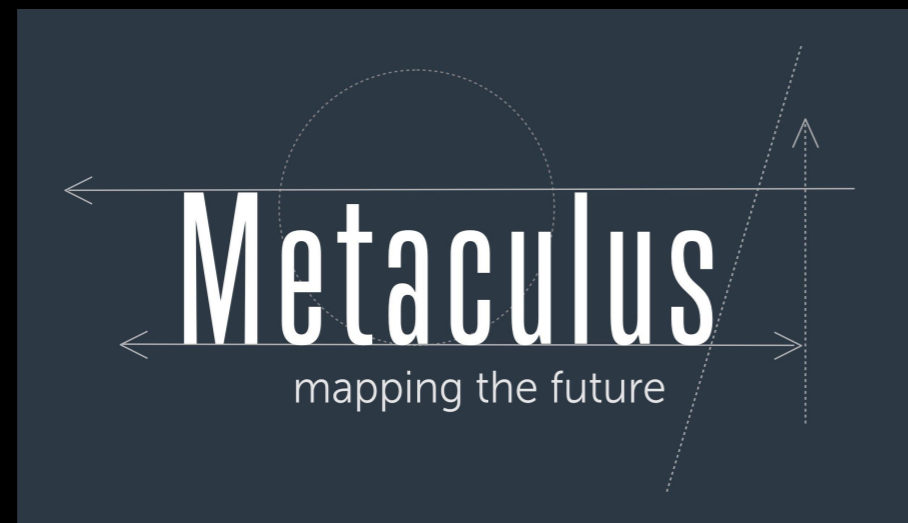
- Great when you have *a ton* of training data and want to predict something of the same type many times.

Human prediction

- Great when you have novel situations and/or one combining many variables and/or in a complex system.

UC SANTA CRUZ

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