

SMALL STEPS TO ACCURACY: INCREMENTAL BELIEF UPDATERS ARE BETTER FORECASTERS

Pavel Atanasov
Jens Witkowski
Lyle Ungar
Barbara Mellers
Philip Tetlock

21ST ACM CONFERENCE ON ECONOMICS AND COMPUTATION (EC'20)
JULY 13-17, 2020

BELIEF UPDATING AND SKILL

Questions:

How do the best forecasters update their beliefs?

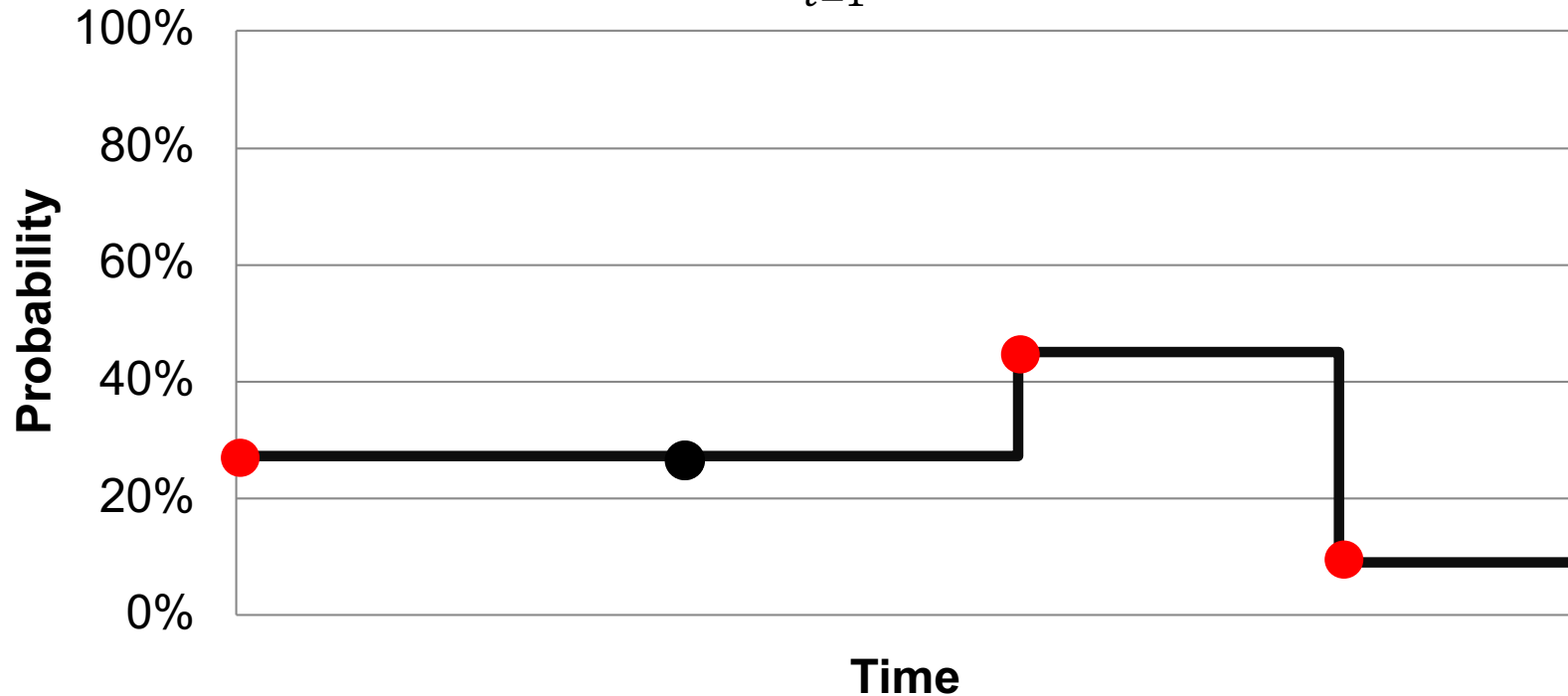
Methods & Data:

Good Judgment Project, 515 forecasters with 80k+ forecasts on 487 real-world geopolitical forecasts.

Outcome: Brier score, cross-validated across questions

UPDATING AND ACCURACY MEASURES

$$\text{Brier Score} = \frac{1}{T} \sum_{t=1}^T 2(1 - f_t)^2$$



Update Measures

Frequency: Number of new forecasts, denoted by red dots in example above (3)

Magnitude: Mean absolute update size, length of vertical lines (27%)

MAGNITUDE & FREQUENCY PREDICT ACCURACY AT DIFFERENT TIMES

