

# WELCOME!

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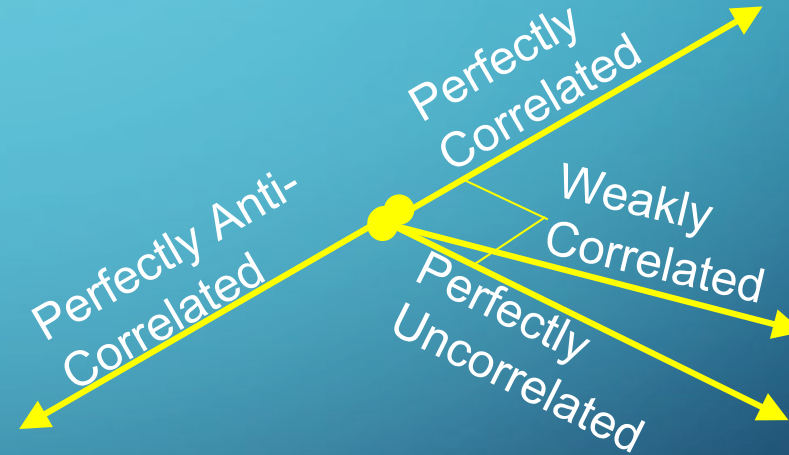


# CRITICAL PROMPT: COLLIN

CRITICAL PROMPT: BOB

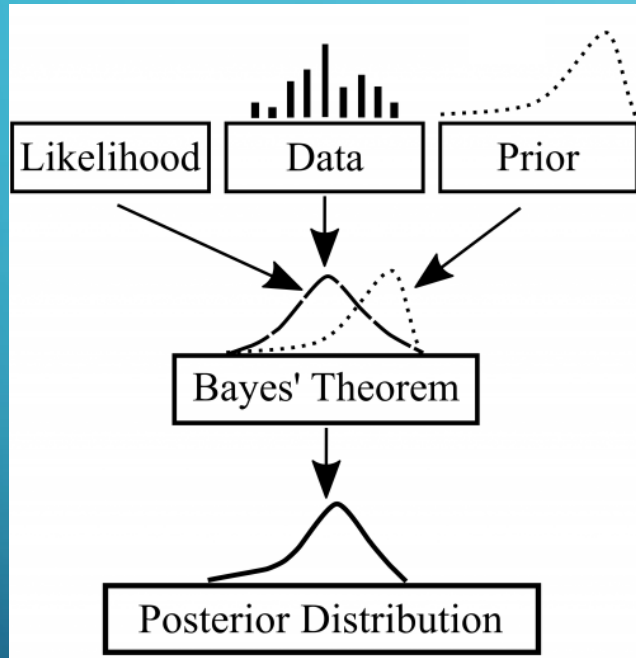
# CRITICAL PROMPT: WHAT ARE MACHINE ALGORITHMS (CURRENTLY) GOOD AT?

- Tacit Knowledge
  - Pattern recognition (deductive reasoning)
  - Correlation development from large data sets
  - Prediction
  - Limits
    - Curve fitting to noise - “with a powerful enough instrument, everything either causes or prevents cancer”
    - Statistical significance vs. ecological significance



Frequentist  
Statistics

# CRITICAL PROMPT: WHAT ARE MACHINE ALGORITHMS (CURRENTLY) BAD AT?



Bayesian



- Explicit Knowledge
  - Extension (inductive reasoning)
  - Lateral thinking
  - Evaluation (keeping track of the probability of competing hypotheses)
    - ensemble forecasting
    - sensitivity analysis
- Limits
  - Recognition Primed Decision Making
    - Satisficers vs. Optimizers

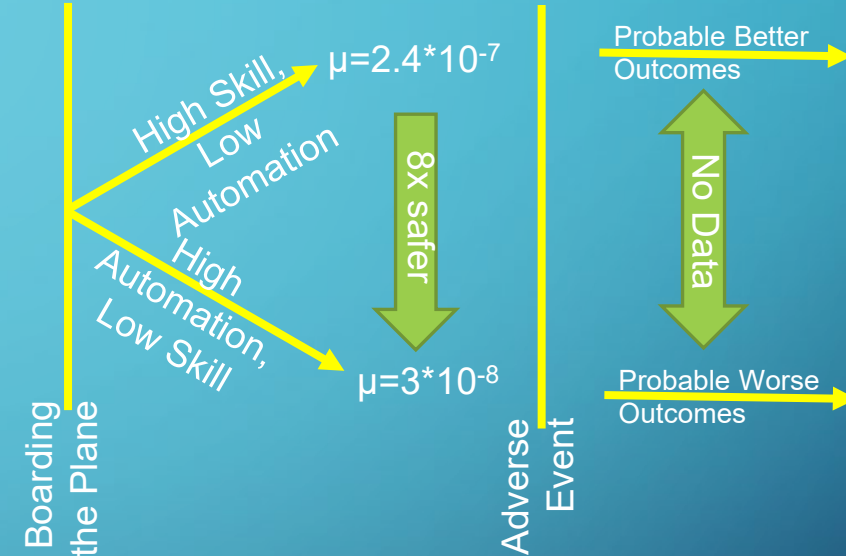
# CRITICAL PROMPT: COLLIN



CRITICAL PROMPT: BOB

# CRITICAL PROMPT: “SHOULD WE CARE ABOUT PEAK PERFORMANCE OR AGGREGATE PERFORMANCE?”

<p><b>1 Early commercial jets</b></p> <p><b>From 1952</b></p> <p>Dials &amp; gauges in cockpit. Early auto-flight systems</p> <p>Comet, Caravelle, BAC-111, Trident, VC-10, 707, 720, DC-8, Convair 880/890</p>  <p>Caravelle</p>	<p><b>2 More integrated auto-flight</b></p> <p><b>From 1964</b></p> <p>More elaborate auto-pilot and auto-throttle systems</p> <p>Concorde, A300B2/B4, Mercure, F-28, BAe146, VFW 614, 727, 737-100 &amp; -200, 747-100/200/300/SP, L-1011, DC-9, DC-10</p>  <p>A300B2</p>
<p><b>3 Glass cockpits &amp; FMS</b></p> <p><b>From 1980</b></p> <p>Electronic cockpit displays, improved navigation performance and Terrain Avoidance Systems, to reduce CFIT accidents</p> <p>A300-600, A310, Avro RJ, F-70, F-100, 328JET, 717, 737 Classic &amp; NG, 757, 767, 747-400/-8, Bombardier CRJ, Embraer ERJ, MD-80, MD-90</p>  <p>A300-600</p>	<p><b>4 Fly-by-wire</b></p> <p><b>From 1988</b></p> <p>Fly-by-wire technology enabled flight envelope protection, to reduce LOC-I accidents</p> <p>A318/A319/A320/A321, A330, A340, A350, A380, 777, 787, Embraer E-Jets, Bombardier C-Series</p>  <p>A350 XWB</p>



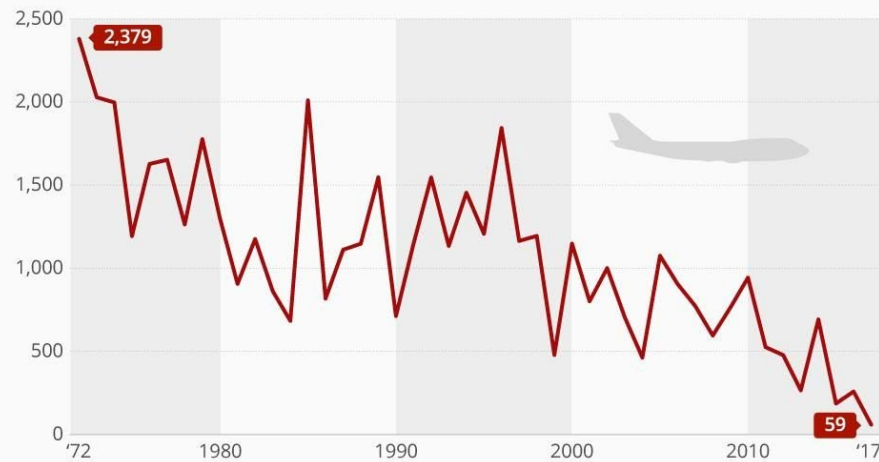
Source:



# HOW DO WE BUILD A SYSTEM THAT INTERVENES AND FOSTERS RECOGNITION PRIMED DECISION MAKING?

## 2017 Was The Safest Year In The History Of Air Travel

Airliner accident fatalities by year from 1972 to 2017\*



\* Accidents excluding suicide, sabotage, hijackings etc.  
Source: Aviation Safety Network

@StatistaCharts

Forbes statista



The background is a gradient of blue, transitioning from a lighter shade at the top to a darker shade at the bottom. In the four corners, there are decorative white line-art patterns resembling circuit traces or neural network connections. These patterns consist of straight lines of varying lengths and angles, ending in small circles. The top-left and bottom-left patterns are more complex and dense, while the top-right and bottom-right patterns are simpler and more sparse.

# NEXT YEAR'S BOOK