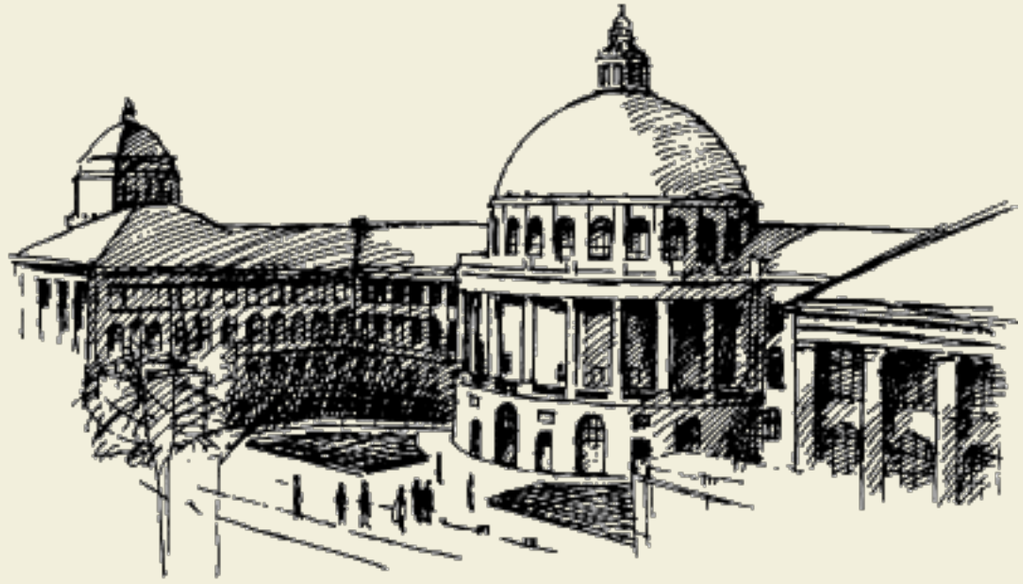
Monitoring at Any Cost

David Basin, Srđan Krstić, Joshua Schneider, and Dmitriy Traytel



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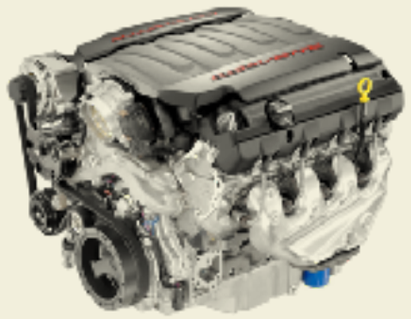
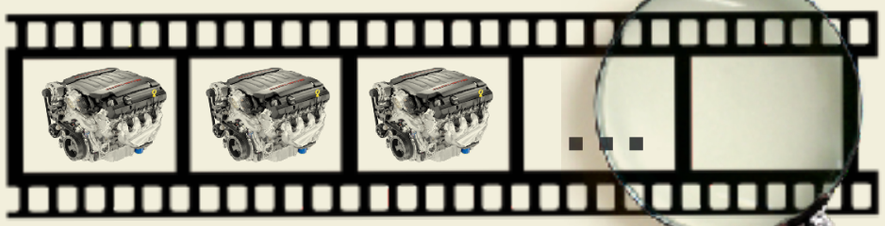
U.S. AIR FORCE

Monitoring



System

Instrumentation

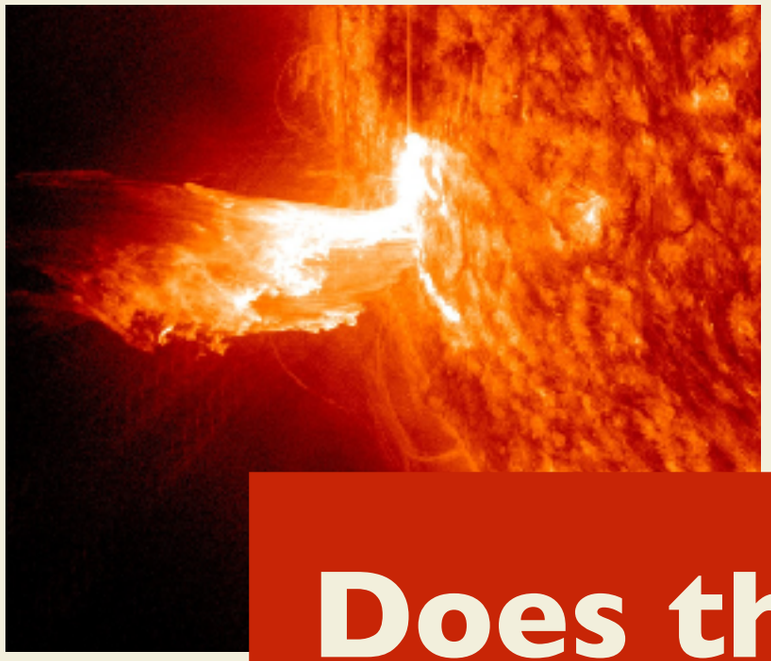


Event stream

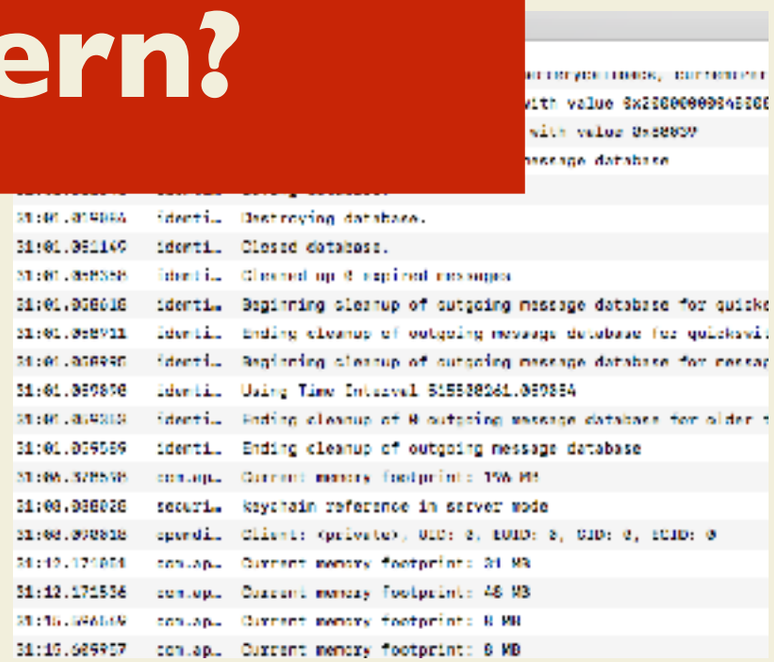
Policy

VS

Monitoring Applications



Does this time-varying data follow some pattern?



Research Objective

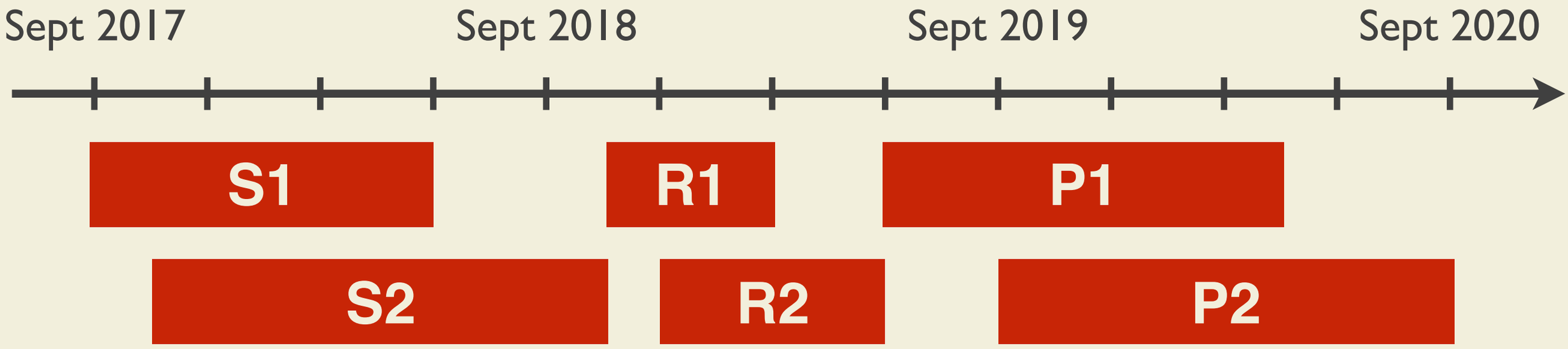
"Improve the scalability of online monitoring in the face of high-volume and high-velocity event streams"

… by **S**plitting event streams and monitoring them in parallel.

… by **R**elaxing the monitoring constraints and output.

… by **P**robabilistically sampling event streams.

Research Effort and Timeline



S1: "Identify probabilistic models to represent knowledge about event streams"

S2: "Use S1 to split event streams and monitor them in parallel"

R1: "Identify monitoring constraints"

R2: "Use S1 and R1 to minimize the nonstandard monitoring output"

P1: "Generalize the monitoring setting by relaxing soundness"

P2: "Use S1 and P1 to minimize errors in monitoring verdicts"

Research Team

Principal investigators

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