

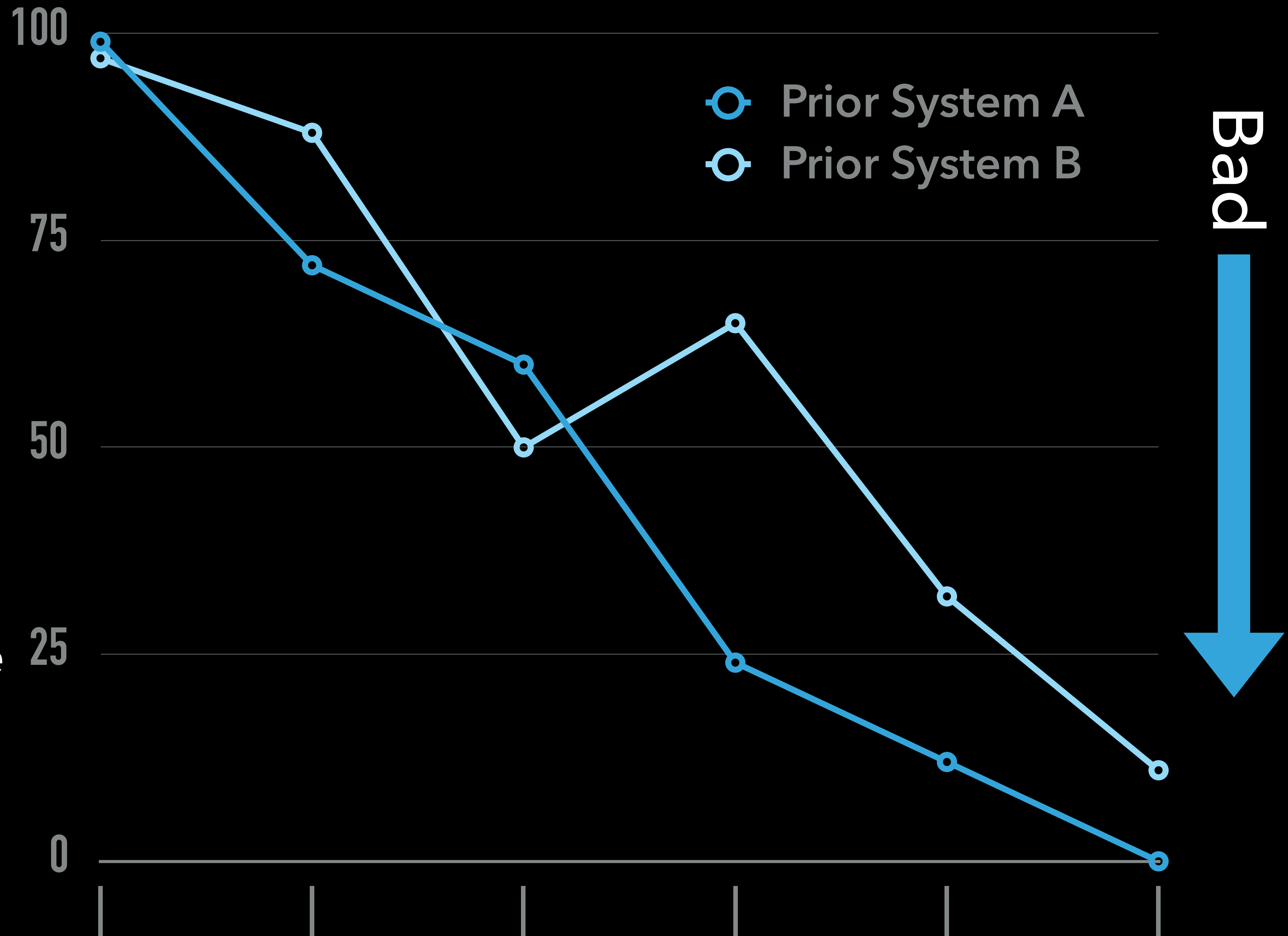
MEMOIZED MIDDLE-BOX MULTICASTING FOR PERFORMANCE-OPTIMIZING DEEP BLOCKCHAIN NETWORK VIA LEARNED TURBO-ENCABULATION

ISAAC SHEFF

TURBO-ENCABULATION

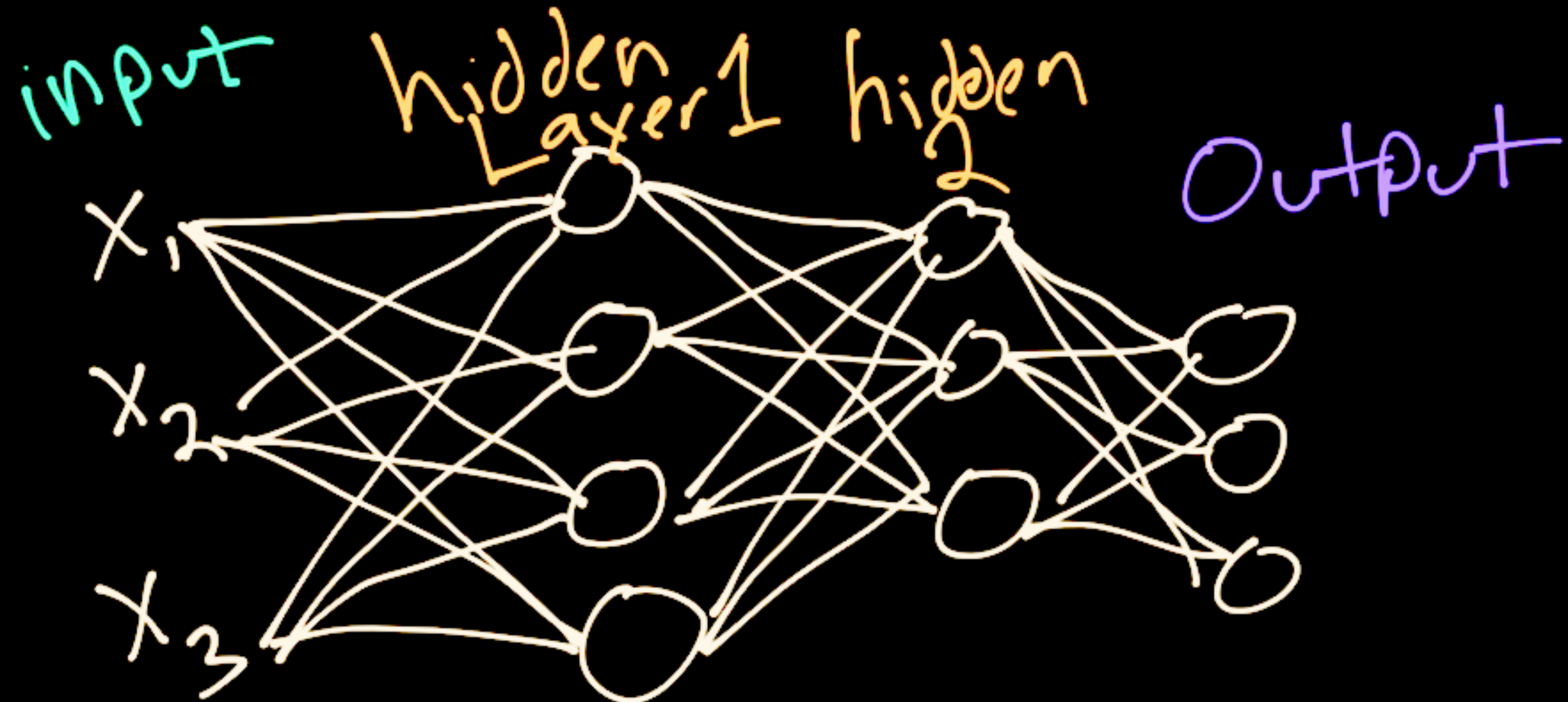
MOTIVATION

- ▶ Underperformance
- ▶ Inefficiencies
- ▶ Hand-Tuned
- ▶ Unaccountable
- ▶ Untrusted Hardware



MACHINE LEARNING

- ▶ Layers
 - ▶ More Layers
 - ▶ Deep
- ▶ 1997 Internet



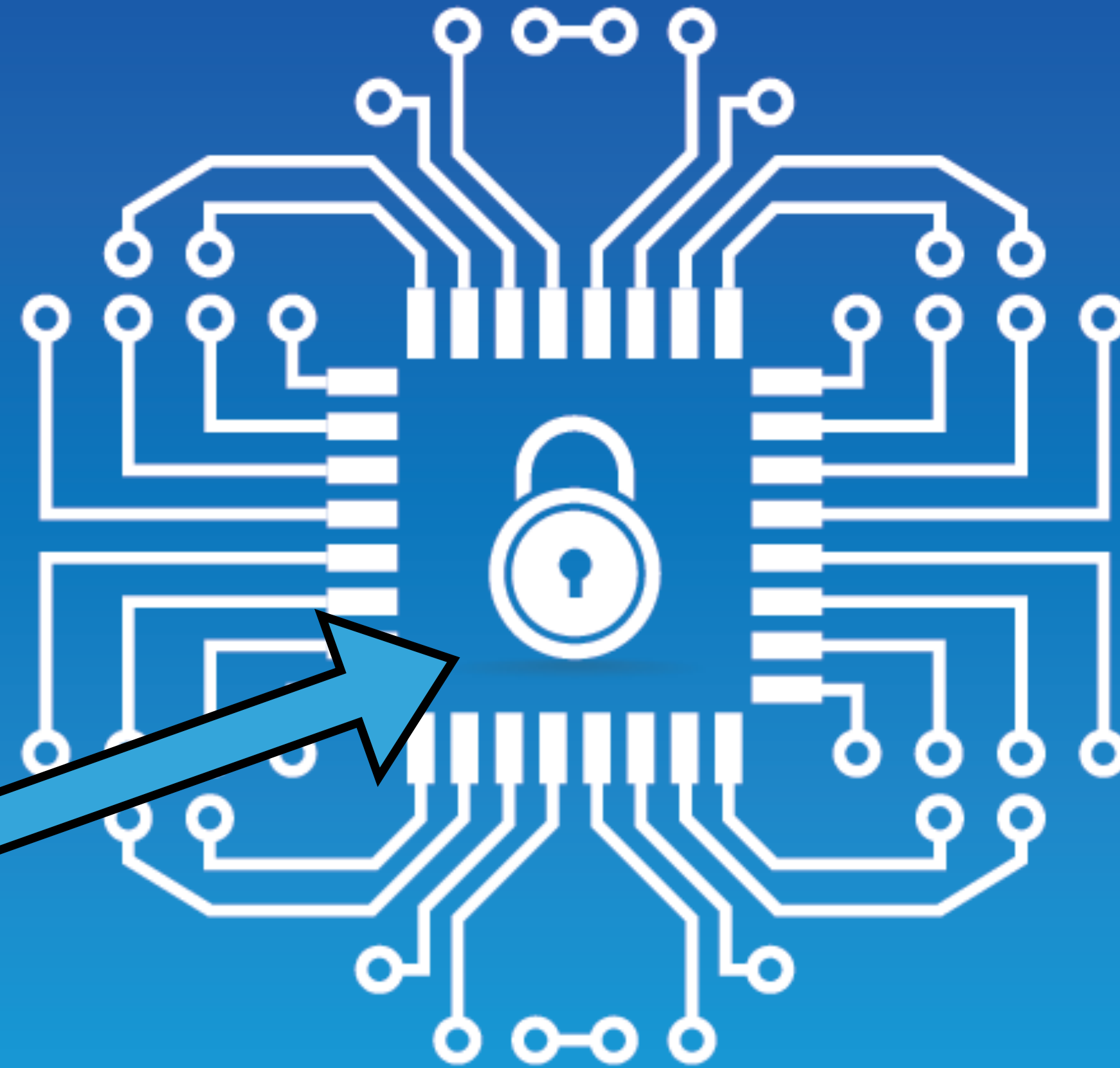
Science



TURBO-ENCABULATION

TRUSTED HARDWARE

- ▶ SGX
- ▶ TrustZone, I guess
- ▶ Leverage
- ▶ Enhanced Security
- ▶ Tamper-Evident

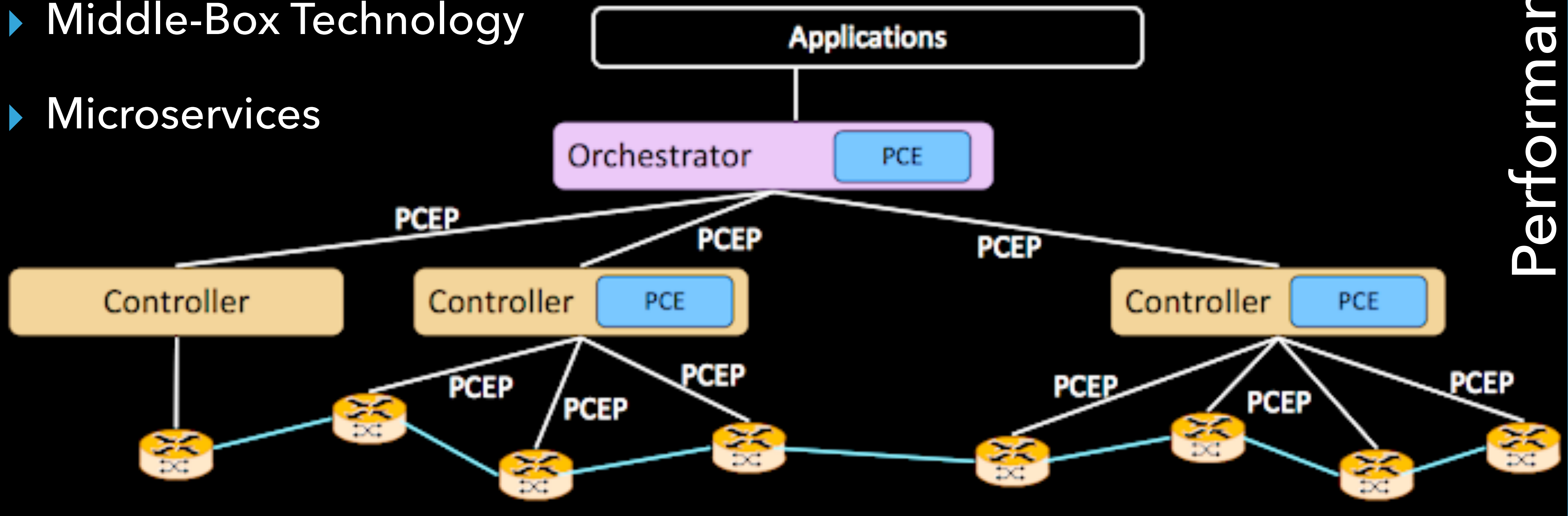


Security

TURBO-ENCABULATION

SDN

- ▶ Future Networks
- ▶ Middle-Box Technology
- ▶ Microservices

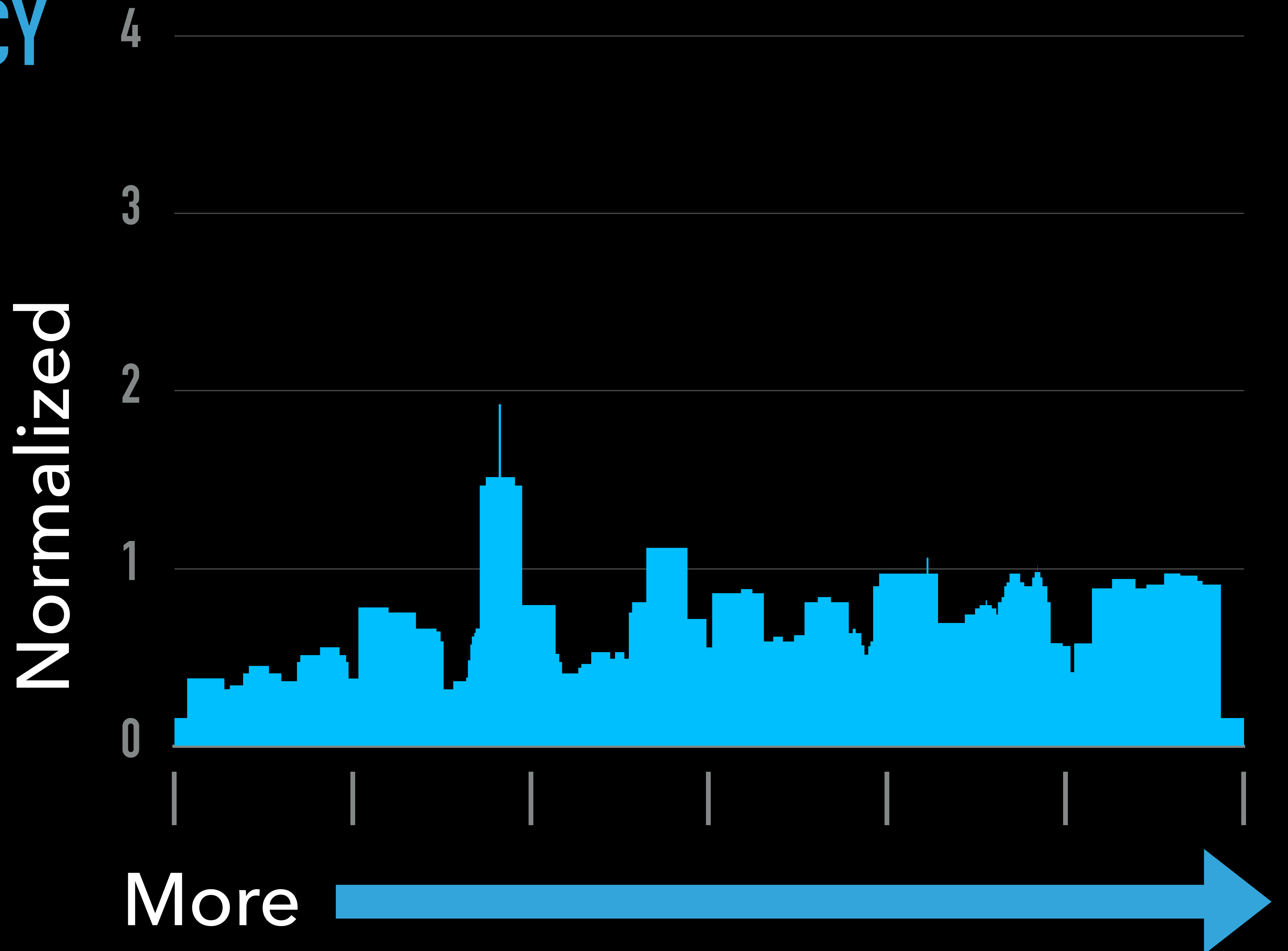


Performance ↑

TURBO-ENCABULATION

MONITORING ACCURACY

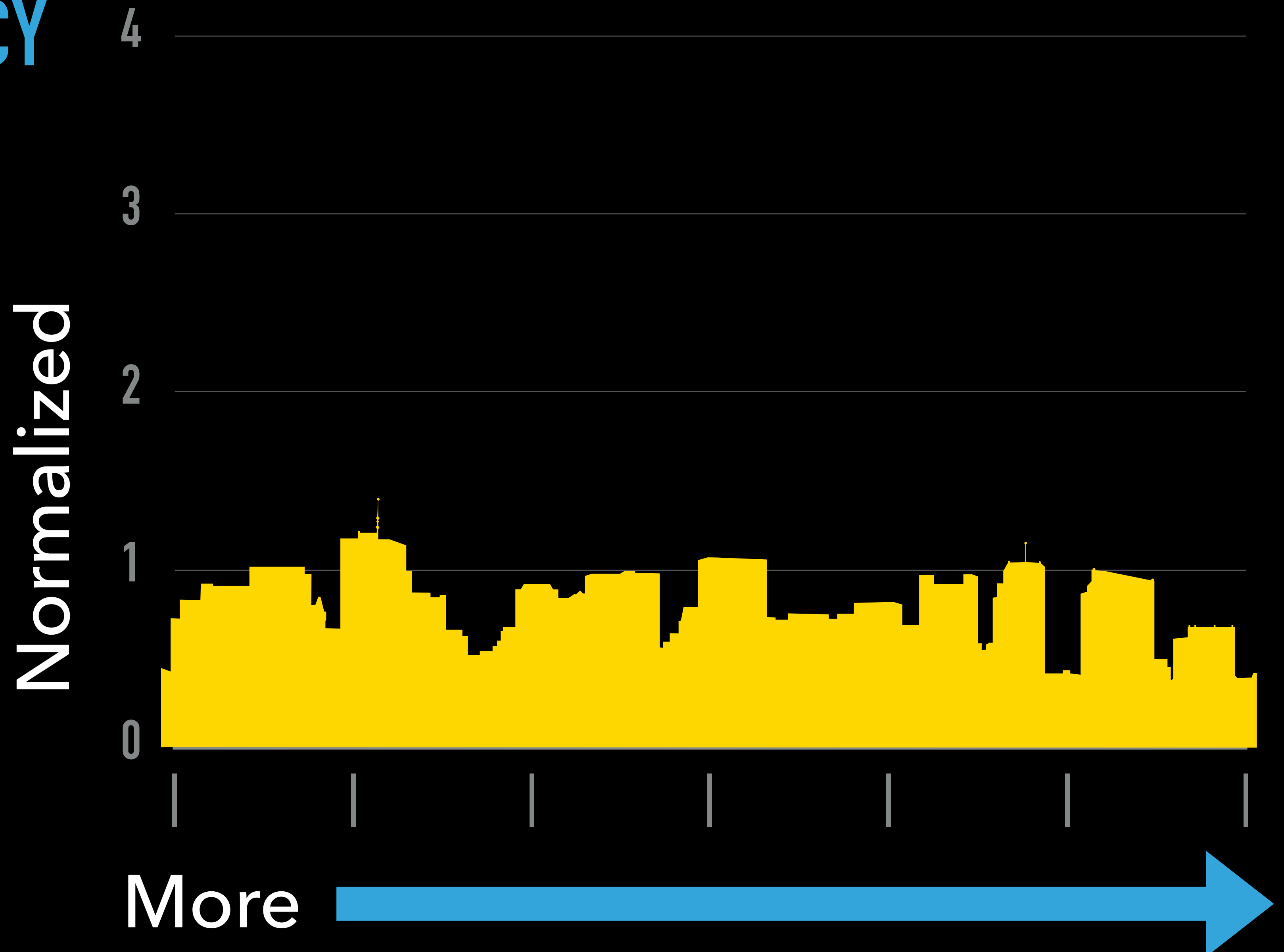
- ▶ Increased Sample Size
- ▶ Smooth out Peaks



TURBO-ENCABULATION

MONITORING ACCURACY

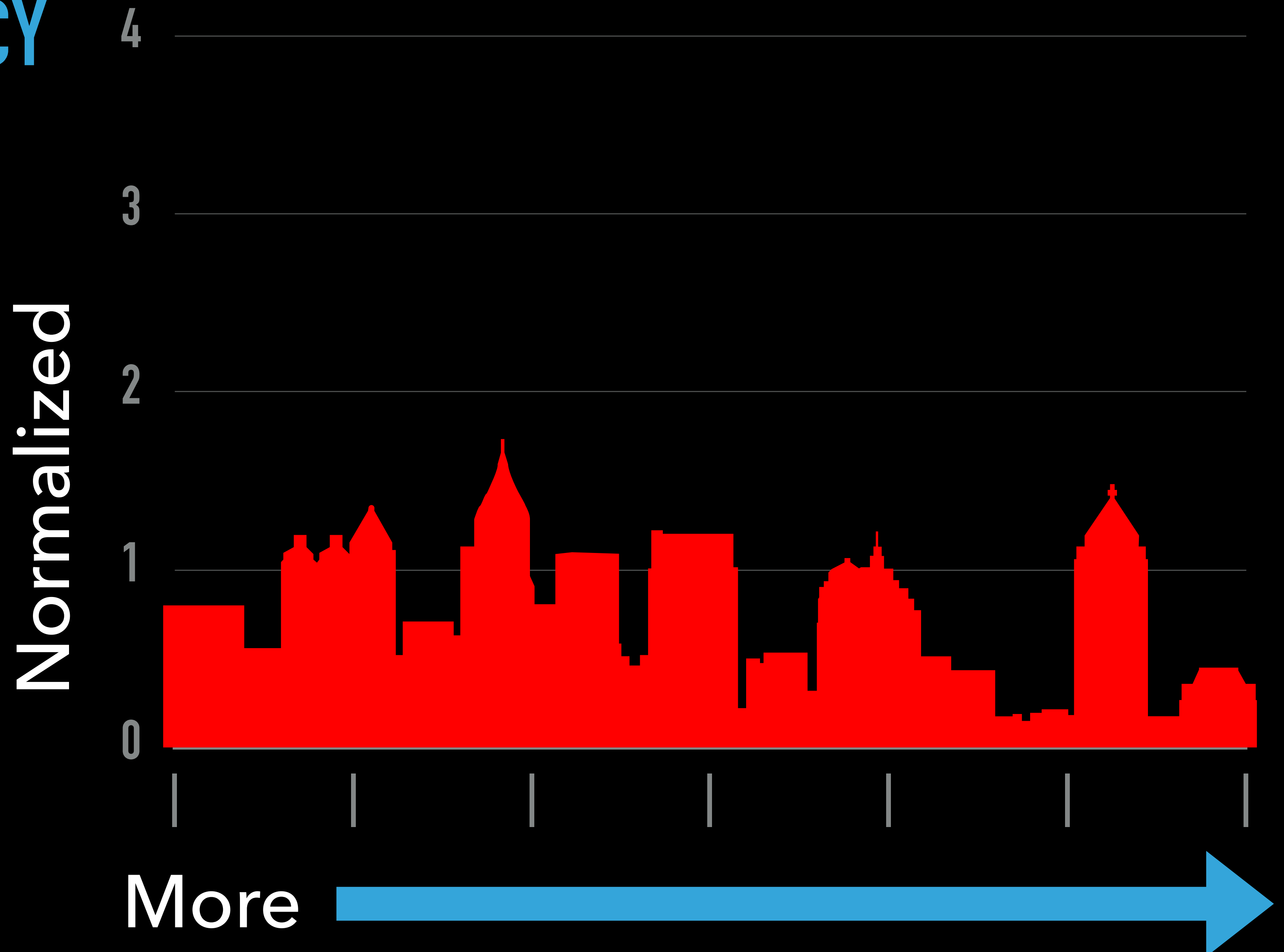
- ▶ Increased Sample Size
- ▶ Smooth out Peaks



TURBO-ENCABULATION

MONITORING ACCURACY

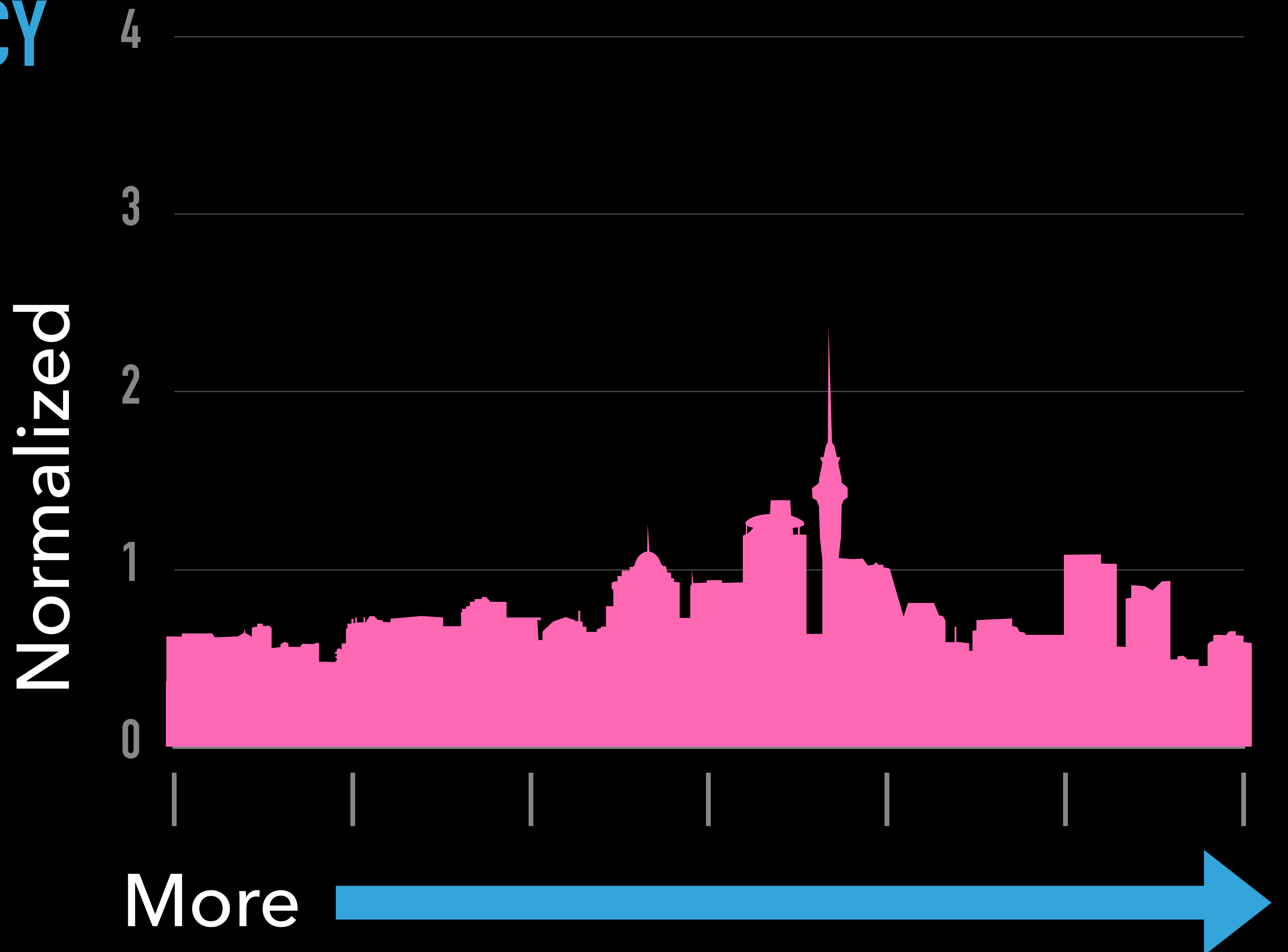
- ▶ Increased Sample Size
- ▶ Smooth out Peaks



TURBO-ENCABULATION

MONITORING ACCURACY

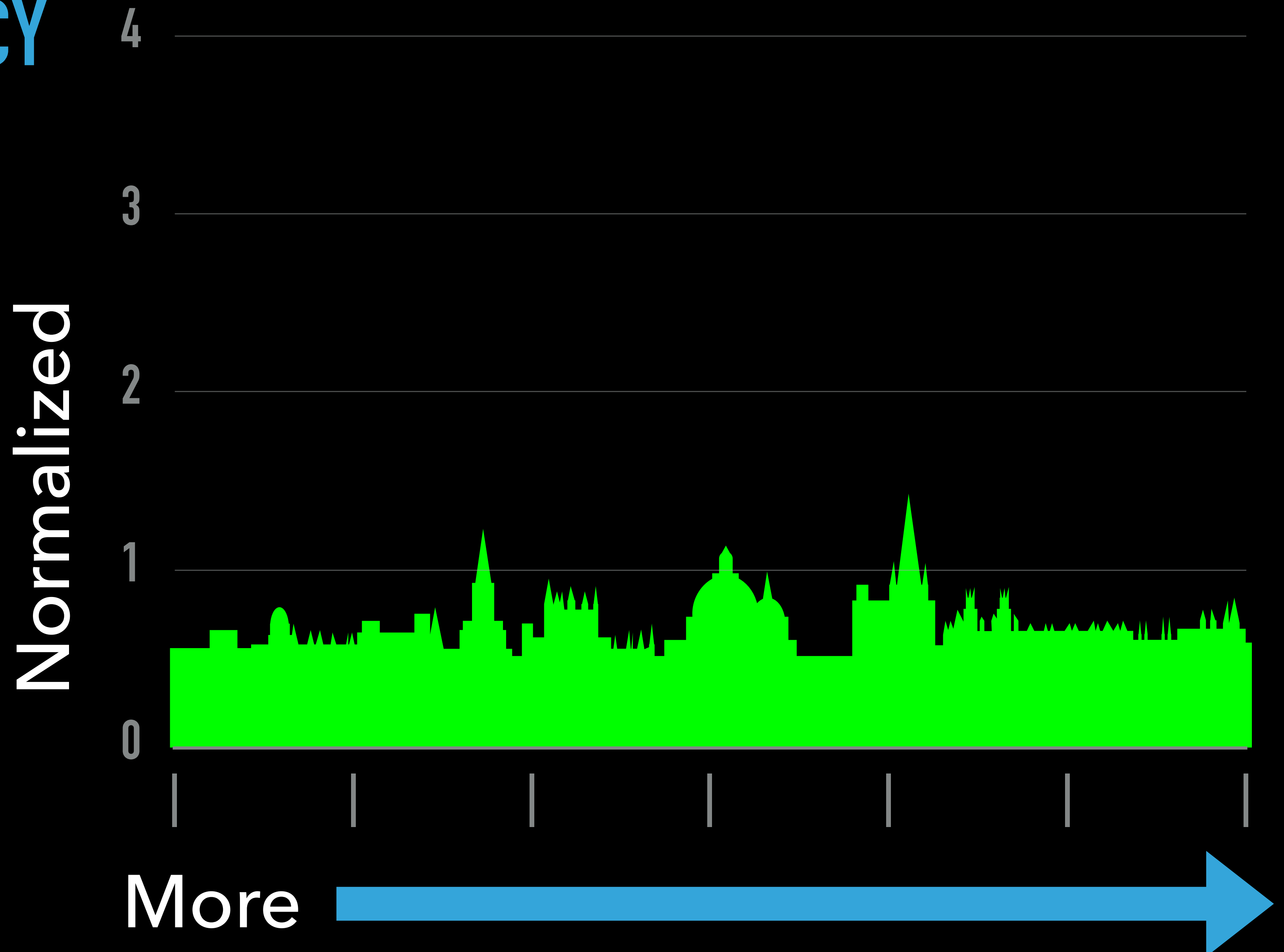
- ▶ Increased Sample Size
- ▶ Smooth out Peaks



TURBO-ENCABULATION

MONITORING ACCURACY

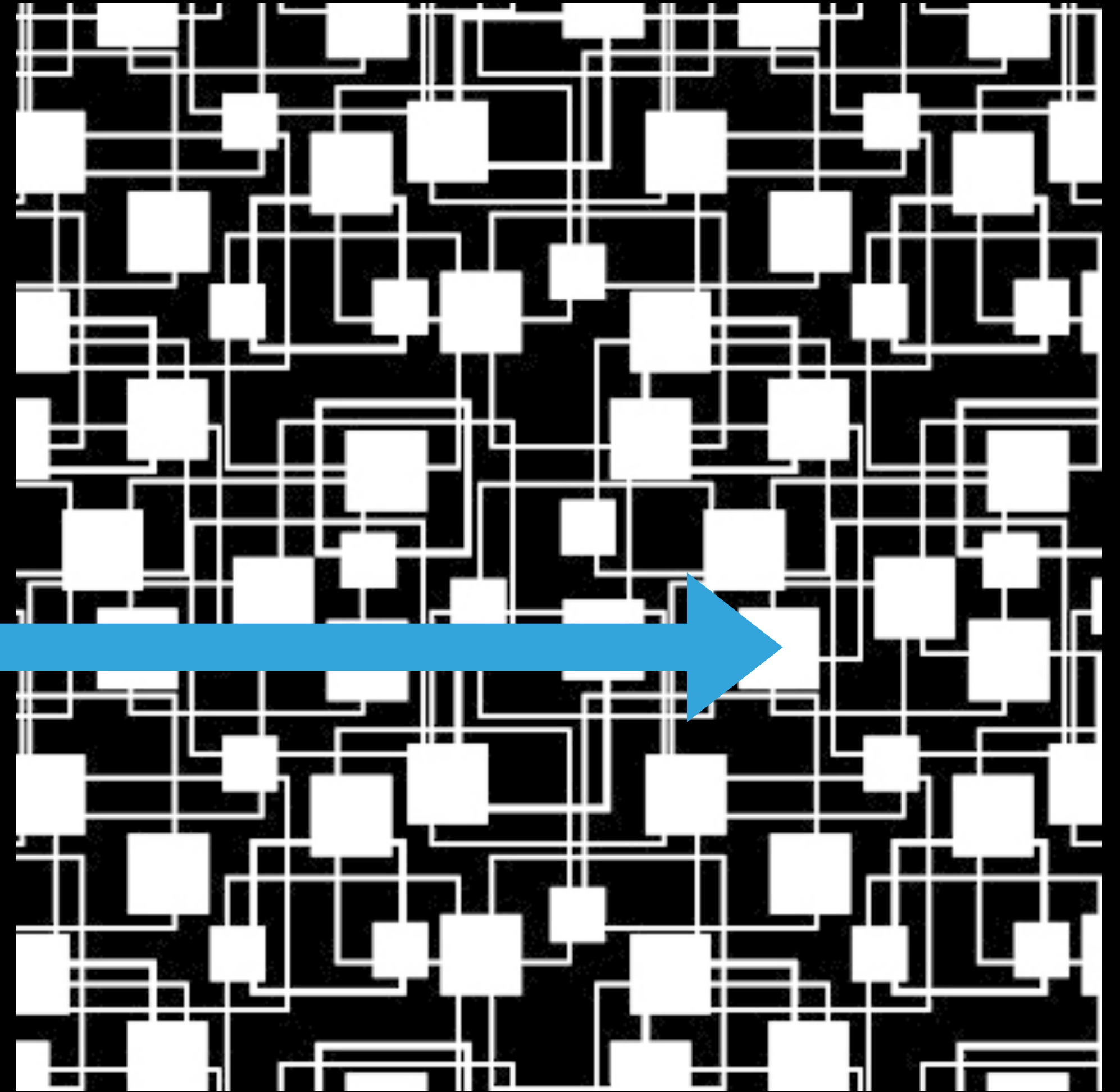
- ▶ Increased Sample Size
- ▶ Smooth out Peaks



SECURITY PRESERVING BLOCKCHAIN-BASED SOLUTION

- ▶ Layers
 - ▶ More Layers
 - ▶ Deep
- ▶ 1997 Internet

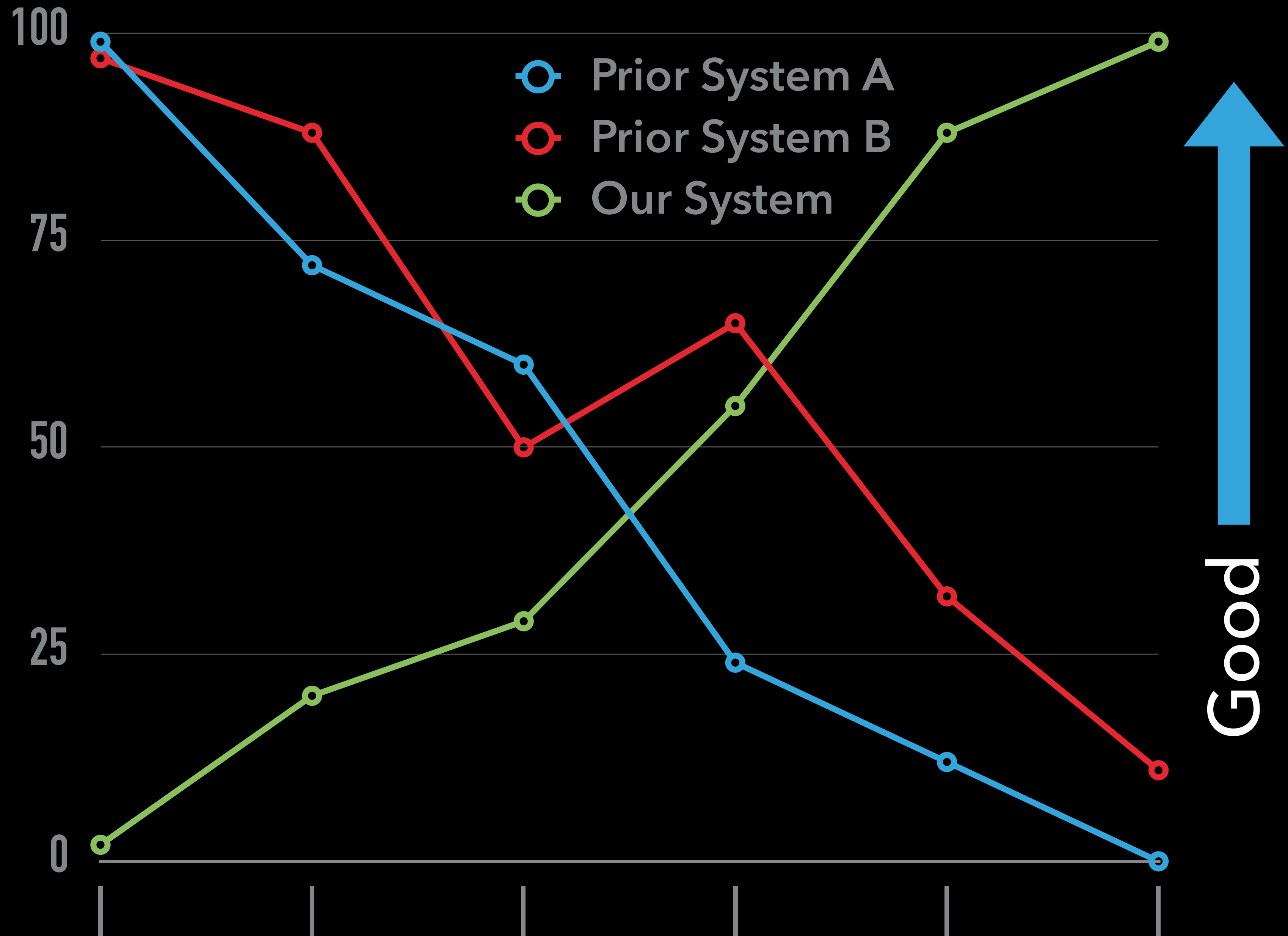
Block



TURBO-ENCABULATION

EVALUATION

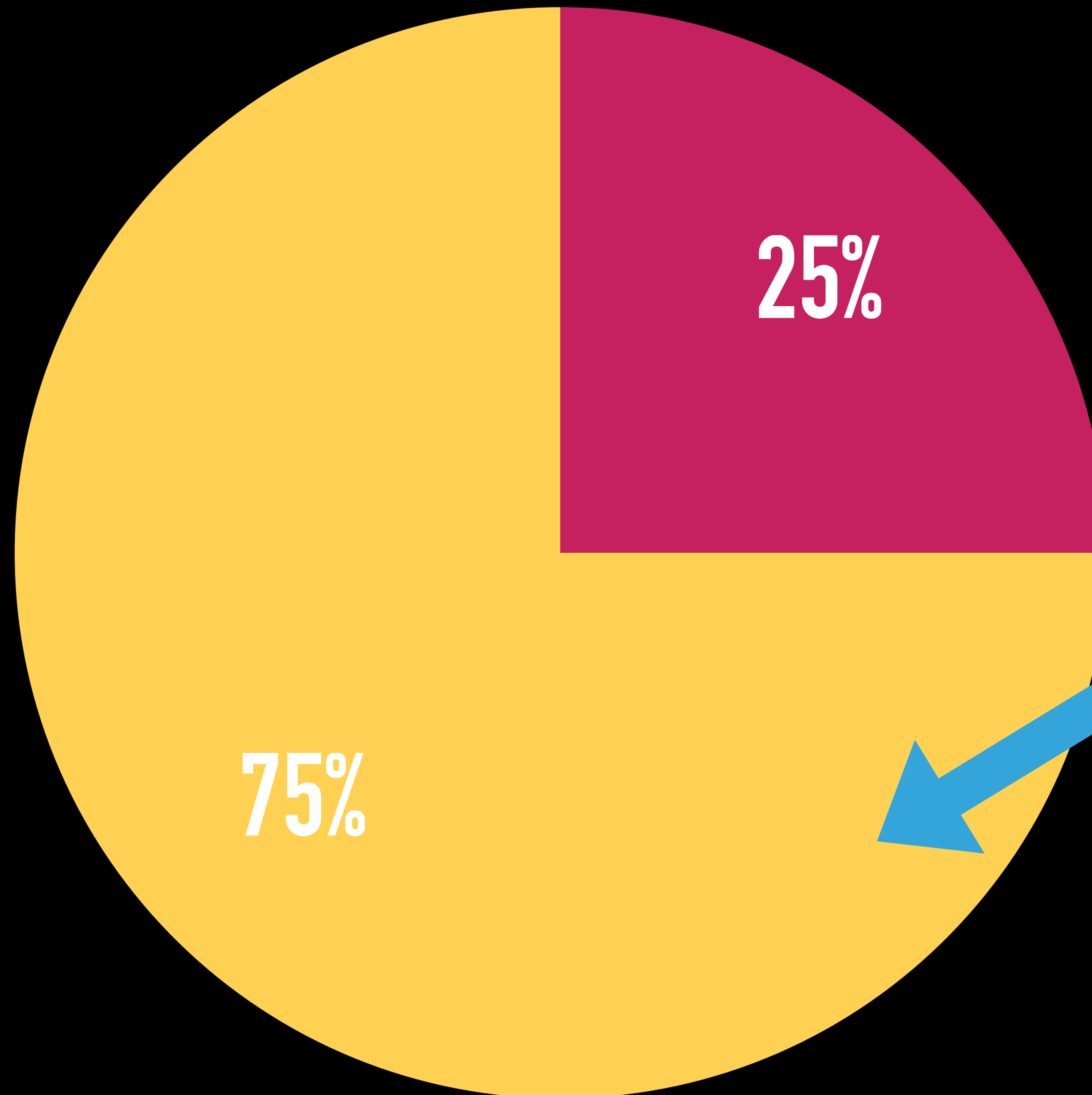
- ▶ Efficiency
- ▶ Generalized
- ▶ Learned Parameters
- ▶ Accountability
- ▶ Trusted Hardware
- ▶ Privacy-Preserving
- ▶ Layers



TURBO-ENCABULATION

EVALUATION

- ▶ 75% Optimality
- ▶ Fully-Decentralized



Processing
Accumulator
Cluster
Management
Administration
Network