E517: Project - Quantifying Performance and Energy Efficiency of a Real Time Data Analytics System

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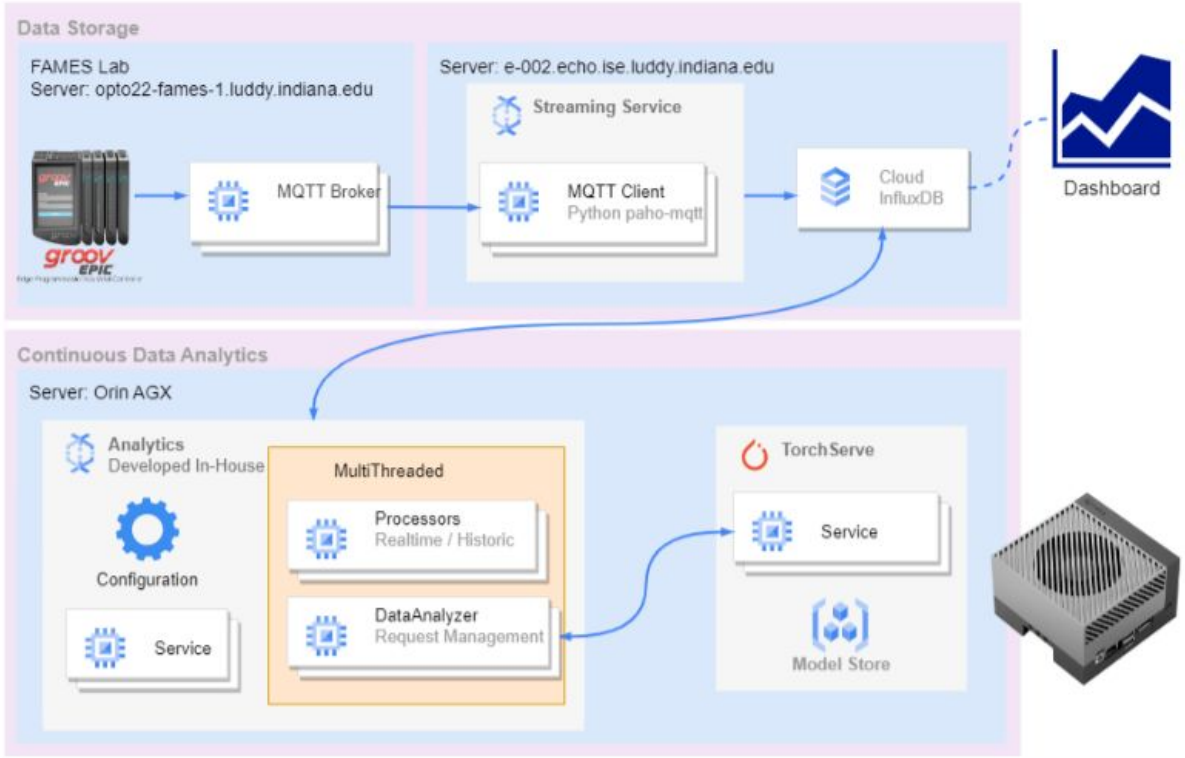
Real Time Data Analytics System



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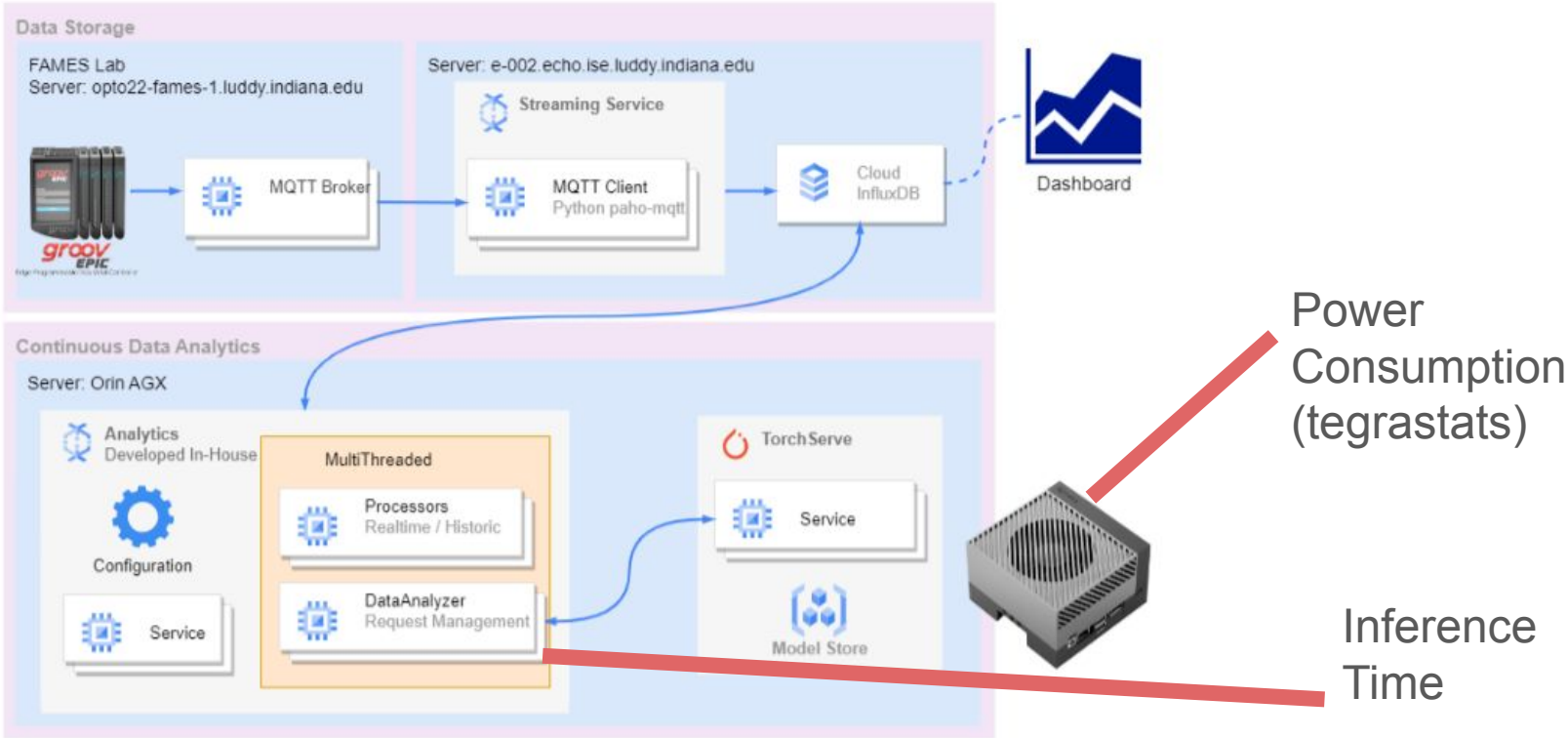


Results: Inference Time

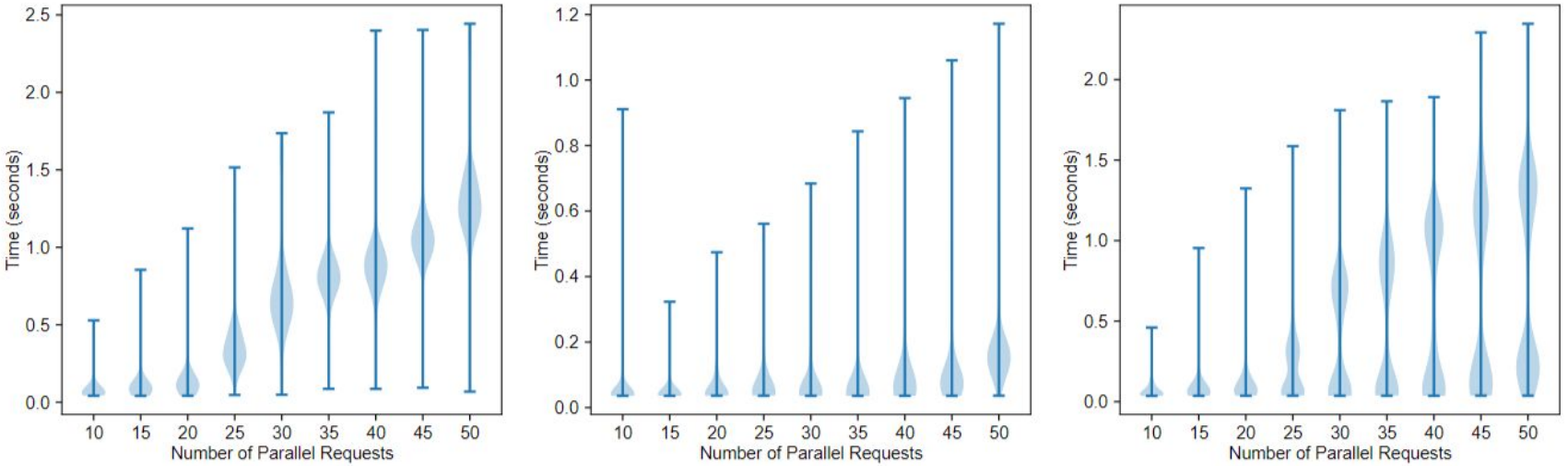
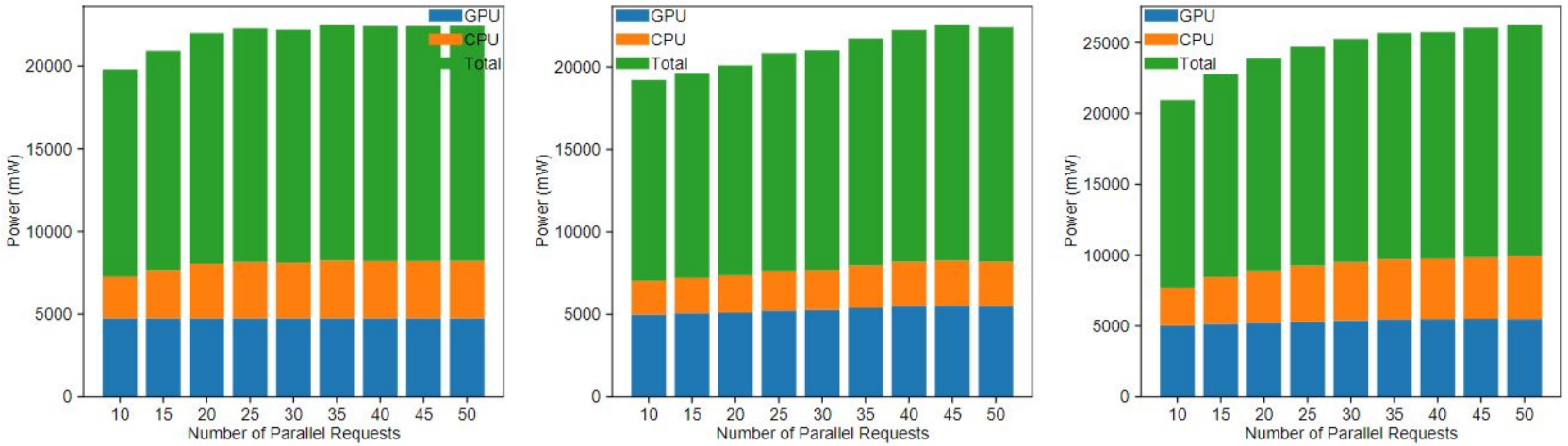


Figure 4: Inference Times

Results: Power Consumption



(a) ARIMA (b) ARNN (c) BOTH

Figure 3: Power Consumption

Key Findings

• System is stable for GPU centric models as opposed to CPU centric models in terms of tail latency.

• GPU is power efficient as opposed to CPU.

• Point of inflexion is reached rapidly for CPU centric models as opposed to GPU centric models.

Discussion

Possible ways to optimize

- Selective throttling based on the inflexion point for CPU and GPU specific requests.
- Build GPU centric models for existing CPU centric models.

Thank You!