

On the Common Playground of Data and Humans

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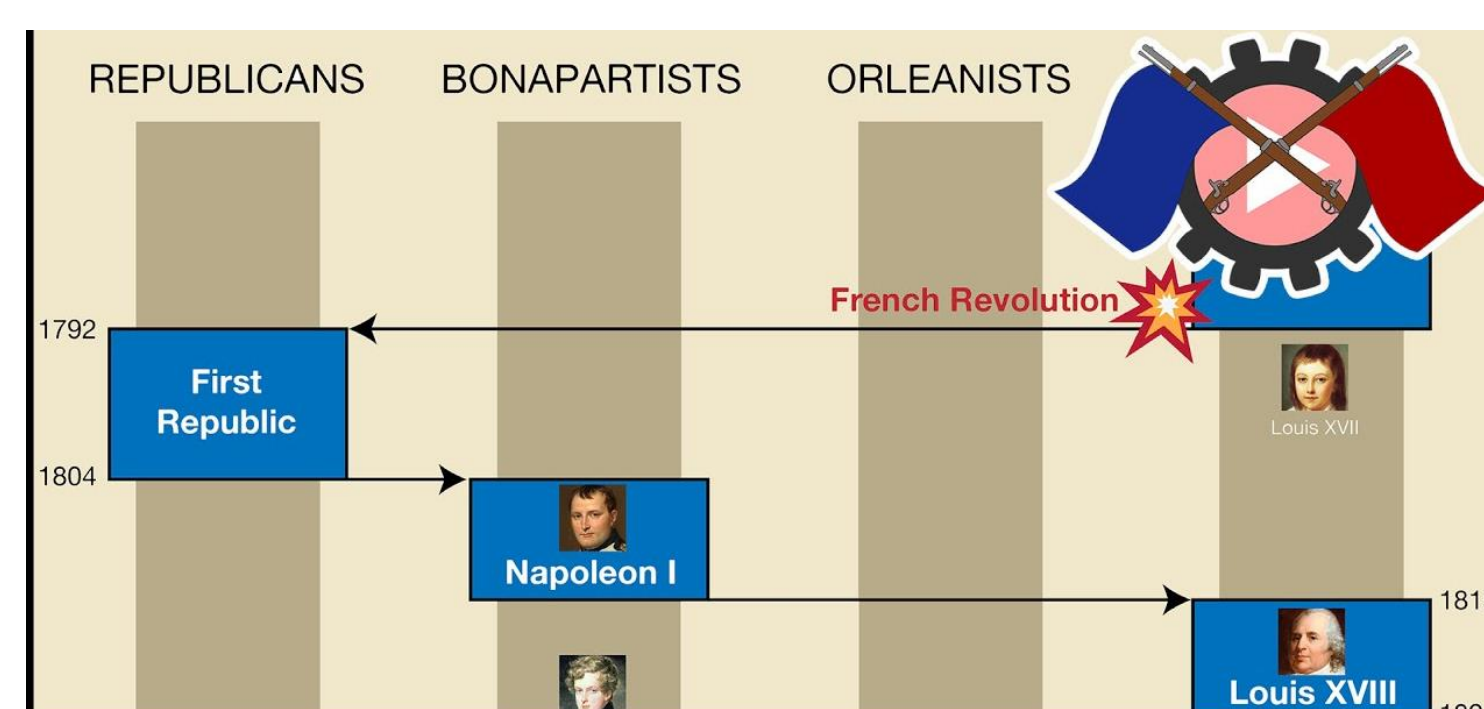
Data Revolutions in AI and BPM

- Machine learning revolutionized AI: transformers, LSTMs, etc.
- Process mining changed the way we do business process management: discovery, predictive monitoring, etc.



Phases of Revolution

- Phase 1: Explosive innovation
- Phase 2: Full constellation
- Phase 3: Market expansion



In Phases 1 and 2

- AI: knowledge out?
- BPM: humans out?



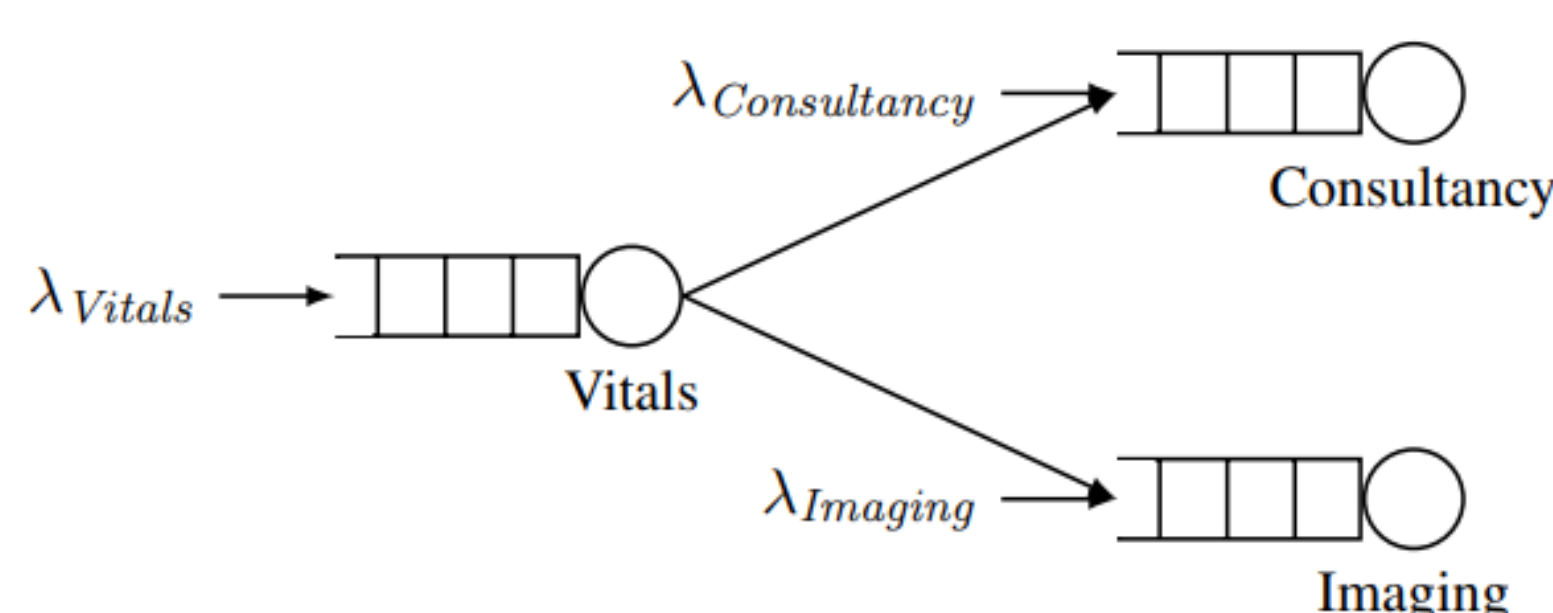
Phase 3: Understanding the Limits

- AI: where do we need knowledge?
 - Explainability
 - Fine-tuning
- BPM: where do we need humans?
 - Feature engineering
 - Process modeling

How can AI and BPM help each other?

- **AI4BPM:** (Knowledge is back in the game)
 - Machine learning methods
 - Knowledge graphs
- **BPM4AI:** (Human is back in the game)
 - Knowledge representation using process models
 - Feature engineering via process understanding

Example: A Hospital Process



Goal: measure process performance

Problem: Missing Data

While missing arrival times and waiting start times...

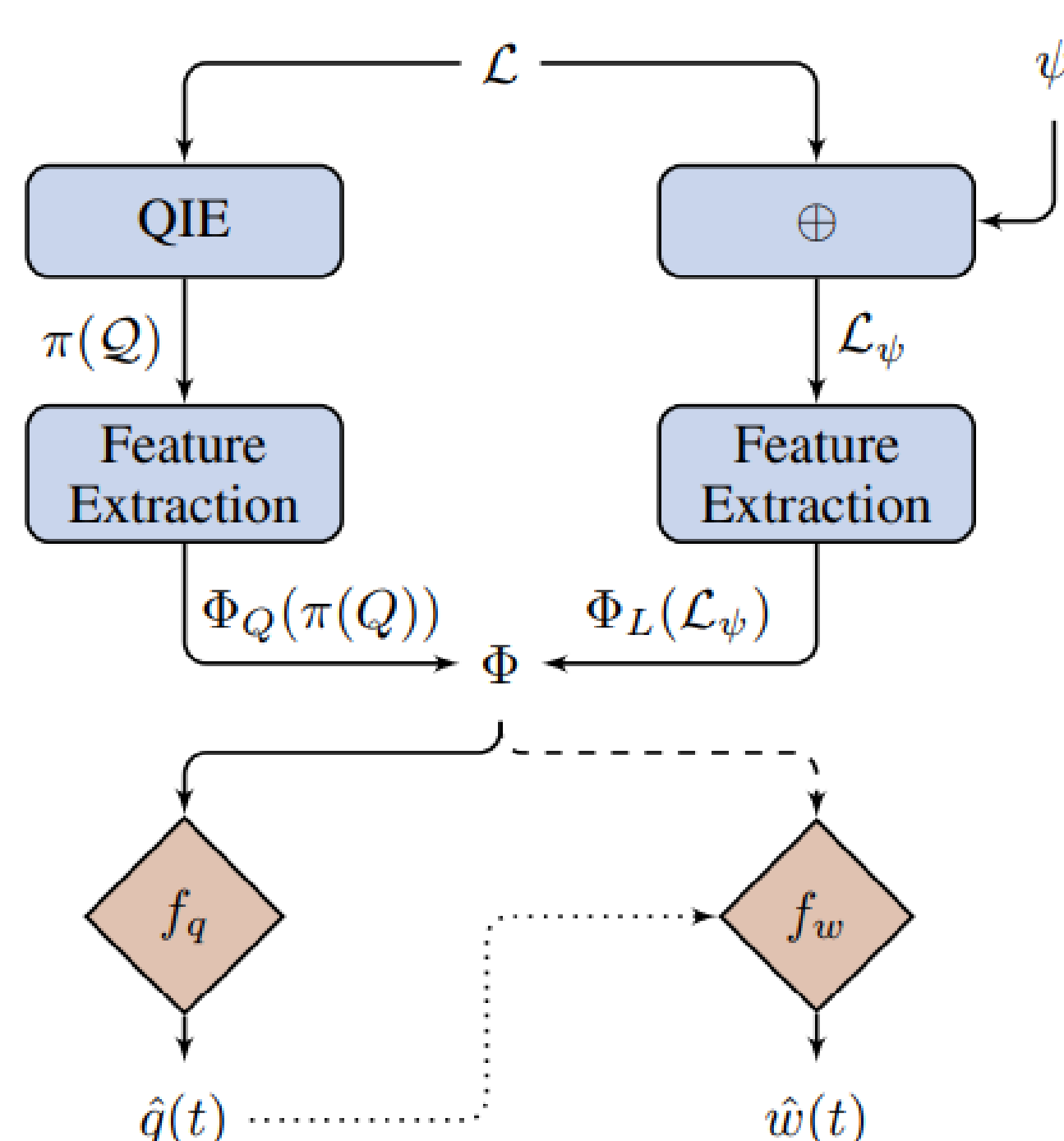
How can we still compute performance indicators?

BPM4AI: Queueing Inference Engine

A mathematical method for inferring queueing parameters from data with missing characteristics

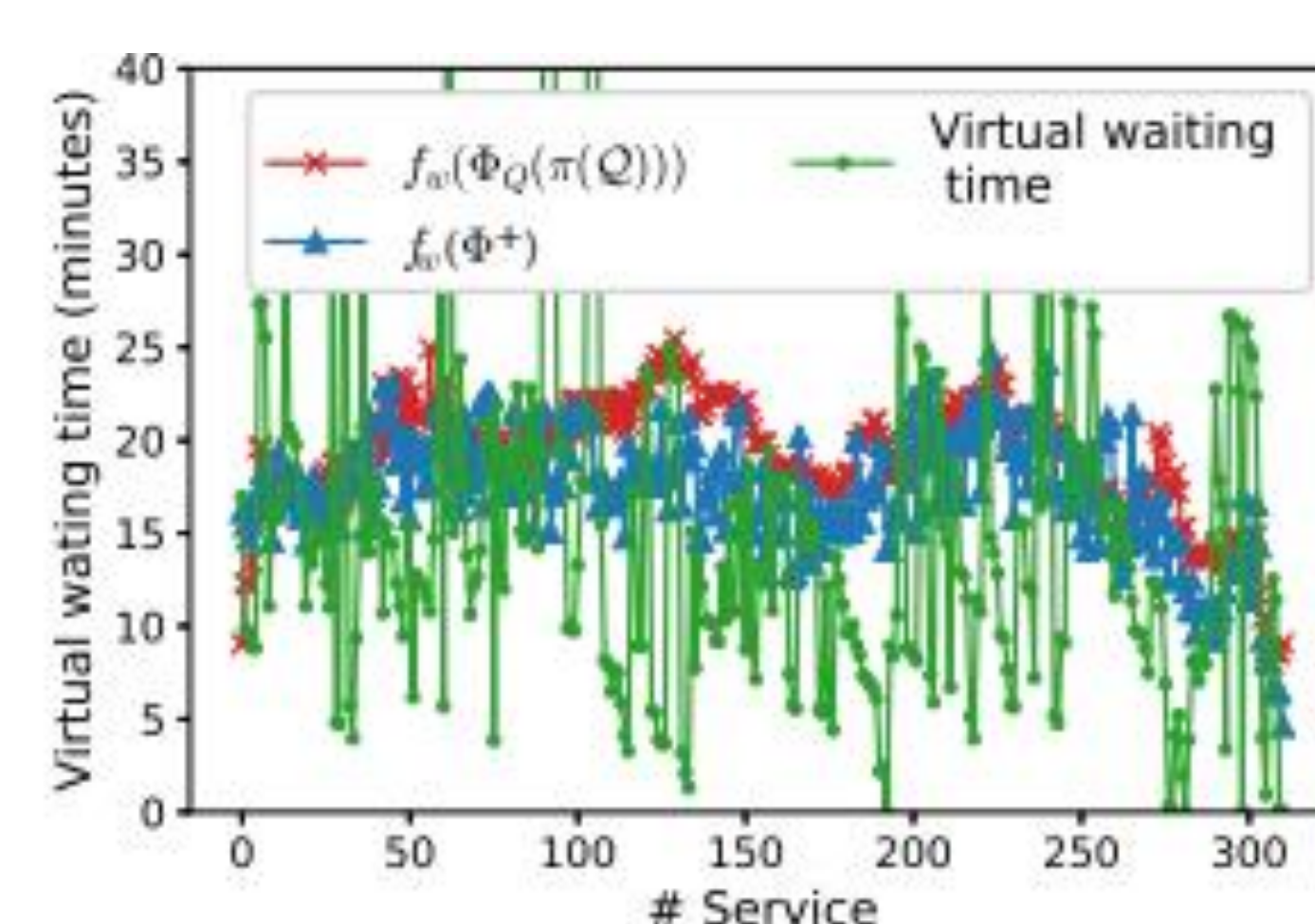
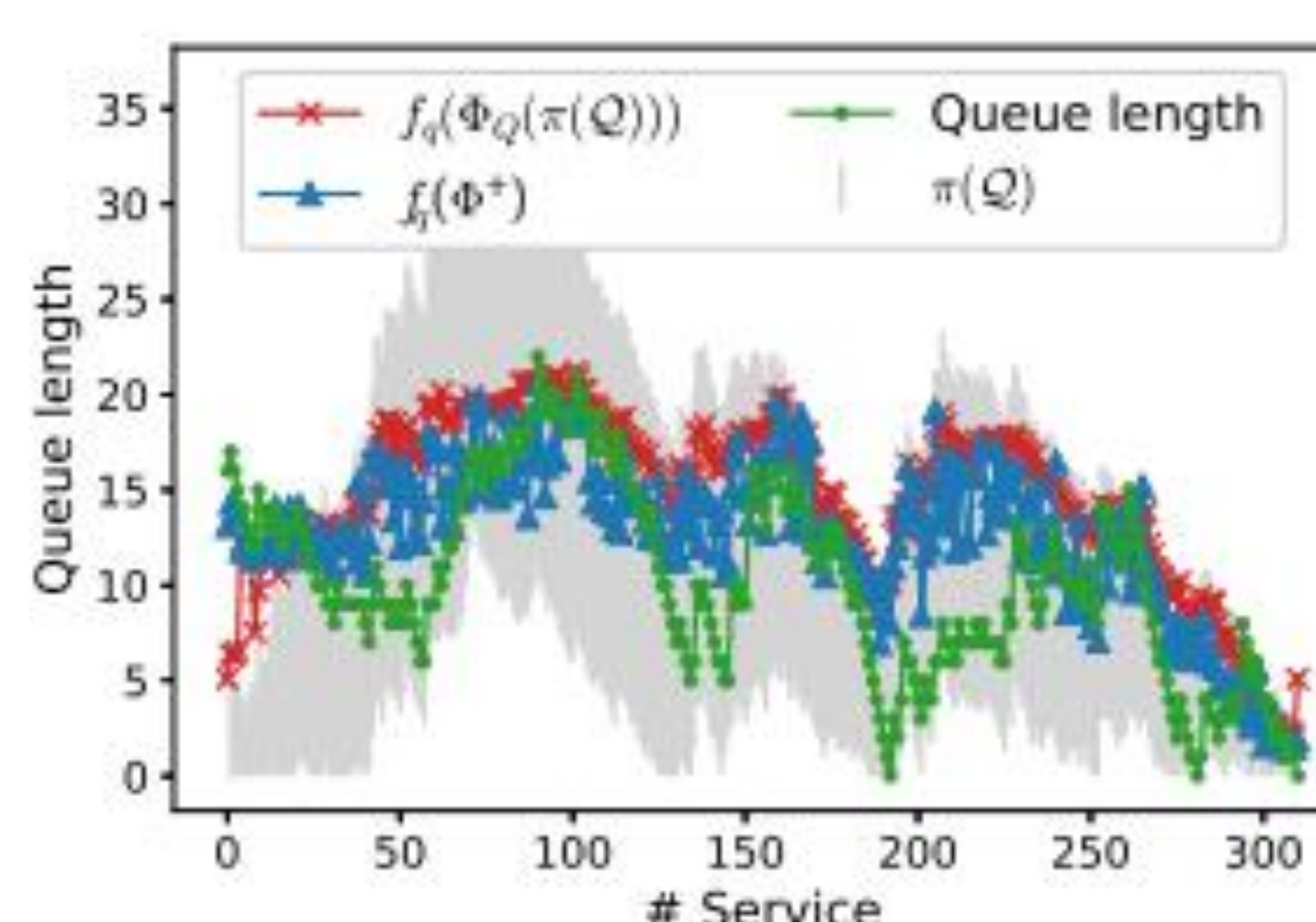
Knowledge saves the day!

AI4BPM: Knowledge meets ML



ML improves the day!

Results



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