COMPUTER SCIENCE AND ENGINEERING
UNIVERSITY of MICHIGAN ■ COLLEGE of ENGINEERING

GATD: A Robust, Extensible, Versatile Swarm Dataplane

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Swarm at the Edge of the Cloud

Communication in the Swarm

To succeed, swarm communication must be…

- **Robust:** All data must be accepted. If it is unknown, it will be archived and processed later.
- **Extensible:** New applications will arise. The system must be extensible with minimal to no downtime.
- **Versatile:** Real-time streaming, long-term archival, and anything in-between must be supported.

Our Vision: GATD

- A dataplane for the swarm built on the "Infinite Depth Queue"
- A "message" is a composition of arbitrary key-value pairs
- Queues have a default consumer ("Archive") to archive data
- Current model: Best effort, eventual delivery
- Vision: Consumer-driven QoS requirements, "bubble-up"

Available Today: https://github.com/lab11/gatd

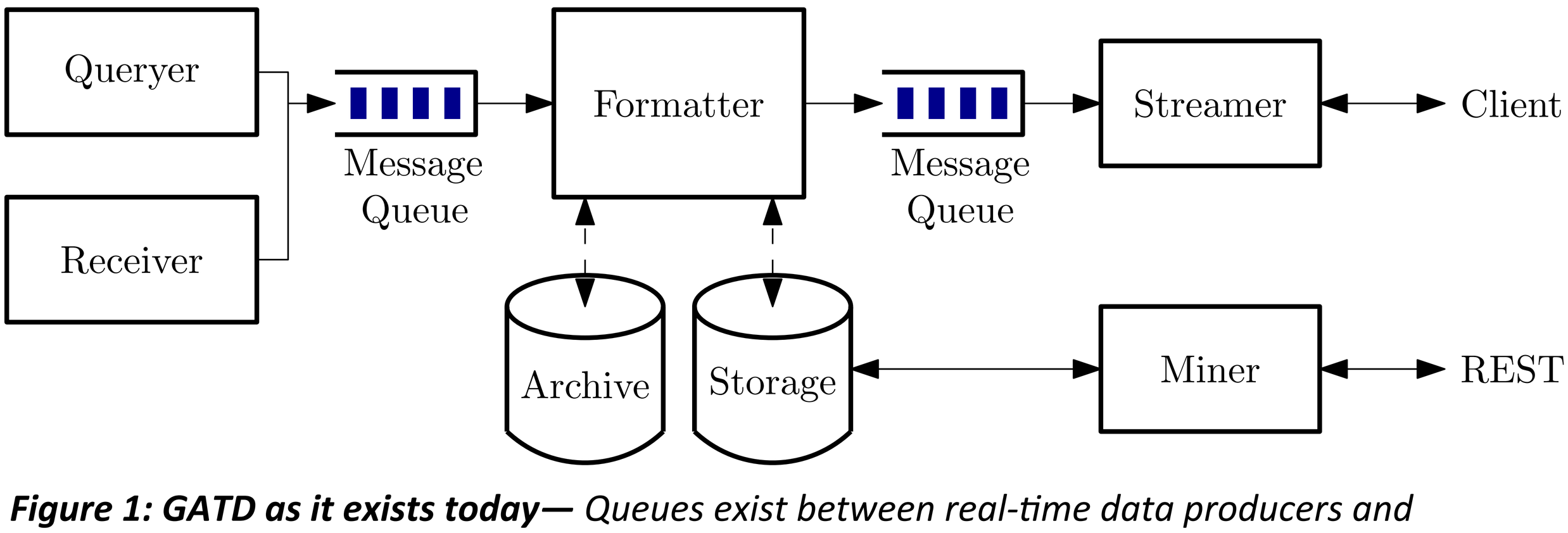

Figure 1: GATD as it exists today— *Queues exist between real-time data producers and consumers. The Miner provides a SQL-like interface for more efficient queries of historical data.*