ELF: Efficient Lightweight Fast Streaming Processing at Scale

Liting Hu
PhD candidate@Georgia Tech

http://www.istc-cc.cmu.edu/
Our Goals

**Fast**
High throughput for batch processing jobs;
Low latency for streaming processing jobs and queries;

**Scale**
*Scale with* hundreds of **diverse parallel jobs**, particular for jobs with diverse execution logics (e.g., pipeline or cyclic dataflow), different batch sizes, different sided sliding windows;

**Flexible**
Flexible *coordination* between jobs;
Flexible job *functions changes* at runtime;
Our Design

**ELF** runs directly on the web server tier
Many Masters/Many Workers

hash('app1') = d502fb
hash('app2') = d462ba
hash('app3') = 2080c3
ELF Software Architecture