Taming Graph Dynamics at Scale

Felix Cuadrado
Tracking interactions

Graphs model interactions

Graph size grows with input data
Tracking interactions at a large scale

**Big Data** for Graph Processing

Graph Partitions

Graphs model interactions

Graph size grows with input data

Distributed computation
Temporal interactions: **What?**

**Dynamic Graphs**

Analyse interaction **Changes**
Temporal interactions: What for?

Real time: before it happens
Temporal interactions: **Challenges**

**Snapshot** graph processing

Changes create **performance** problems

No way to query the **past**
Migration in large-scale dynamic graphs

Iterative graph computation

Dynamic graph changes

Migrate where neighbours are

L. M. Vaquero, F. Cuadrado, D. Logothetis and C. Martella, Adaptive Partitioning for Large-Scale Dynamic Graphs, IEEE ICDCS. 2014
Results and way forward

Future work: **Graph Streams** (query the past)

- Computation models
- Distributed systems
- Graph mining algorithms