

DEPARTAMENTO DE INFORMÁTICA

Incremental Computation in the Cloud

COMPUTER SYSTEMS / CR4 team



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(Faculty)

Currently working on:

- Cloud Storage & Processing
- Participatory Sensing

Objectives

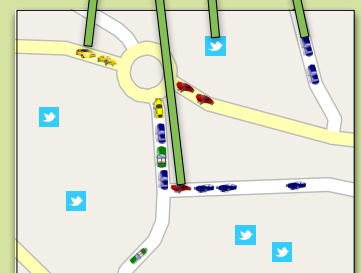
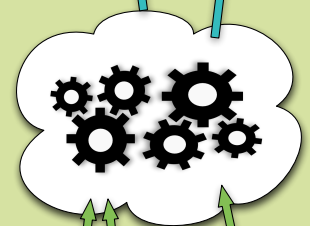
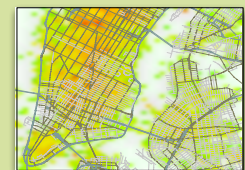
- **Efficient Cloud Storage and Processing**
 - **Storage:** Enrich Eventual Consistency with stronger guarantees
 - **Processing:** Fast, Fault-Tolerant & Deterministic
- **Apply to Emerging Application Scenarios**
 - Participatory Sensing
 - Analytics, financial data, etc

Methodology

- CRDTs for eventual consistency with minimal latency and high availability; invariants for stronger guarantees.
- Leverage of C-CRDTs to support and express computations
- Case-study driven design and experimental evaluation

Expected Results

- **Novel System Models and Programming Abstractions**
 - Mobiquitous 2011, MONE2013, DISC 2012, CloudDP03
- **System Prototypes**
- **Case Study Applications**
 - Social networks
 - Participatory Sensing, Real-time analytics



Funding:



PEst-OE/EEI/UI0527/2011

Research Projects:
• PTDC/EEI-SCR/1837/2012 (SwiftComp)
Research Grants:
• SFRH / BD / 65070 / 2009 (PhD Scholarship)