Fall 2012 Overview
Smart Grid & Cloud Computing Research Group

Yogesh Simmhan
Welcome!

• New PhD Students
  – Hsuan-Yi Chu
  – Charith Wickramaarachchi

• New Directed Research Students
  – Saketkumar Srivastav
  – Zach Gima
  – Jessica Chen
  – Jessica Yoshimi
  – …
Welcome Back!

• Continuing PhD Students
  – Alok Kumbhare
  – Saima Aman
  – Mark Redekopp
  – (Qunzhi Zhou)

• Continuing Directed Research Students
  – Litao Den
  – Rongyang Liu
  – Samuel Stevens
Logistics

• [http://ganges.usc.edu/wiki/New_Students](http://ganges.usc.edu/wiki/New_Students)
  – Accounts on Wiki, SVN, Sacramento (compute), AmazoNAS (storage)
  – Add to Mailing lists
  – Update wiki contact sheet, schedule
  – Building/Room Access, Payroll paperwork

• Meeting times
  – Group meetings: Friday 930-1130A, EEB219
    • Sign up for talks!
  – F2F meetings: See wiki
Research: Big Picture

**Smart Grid**
- SmartGrid Portal, Android Apps, Consumer Outreach
- Forecasting Models, Policy Engine, DR Decision Support
- II Pipeline, Semantic DB
- Floe Framework

**Graphs & Social N/W**
- GoFS Graph Layout
- Giraph, Pregel

**Web Portal & Mobile Apps**

**Scalable Data Analytics**

**Info. Integration & Storage**

**Cloud Programming Frameworks**
SmartGrid Portal & Apps

- Sam, Hsuan-Yi, Jessica Y., Saima
- Portal “Launch” is imminent!
- Integrate forecasting modules into portal
- Enrich apps for consumer outreach & behavior analytics

- Ensure reliable operations for campus access
DDS for Campus & DWP

- Saima, Rongyang, Saket, Zach
- DDS “release” in ~3 weeks!
- Implement & Test demand forecasting
- Curtailment modeling & implementation
- Policy engine algorithms & integration

- “Demo” to DWP in end of Sep
II Pipeline & Storage

• ???, Zach, Alok
• Integrate building data sources (from 5 → 40 buildings)
• Support ML forecasting, Mobile Apps
• Include curtailment experiment results

• *Ensure reliable operation of SG portal*
Reliable, Scalable Cloud F/Ws

- Alok, Mark, Litao, Charith
- Resilience models for dataflows
- Flexible dataflow compositions
- Graph frameworks on elastic Cloud resources
- Scalable graph data layouts

- Ramp up “GoFFish” project
Upcoming *Research* Targets

- PhD Qualifiers: *Saima*, *Alok*
- IPDPS paper(s): *Mark*, *Alok*
- CHI paper: *Saima*
- Transactions article(s): *Alok/Charith*, *Qunzhi*, *Saima*