An Opportunistic Data Backup System for MANETs

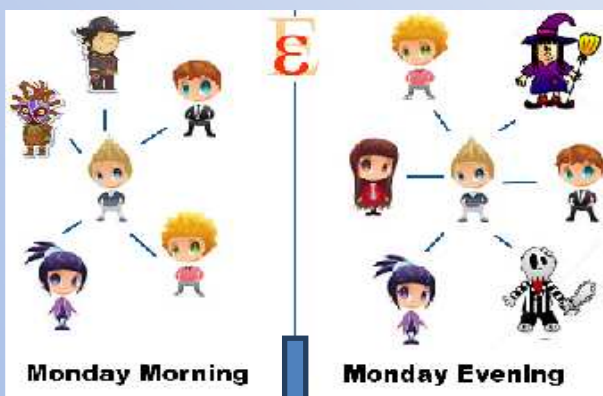Roy Friedman, David Sainz

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MOTIVATION

- As the capabilities of mobile phones improve, backing up the data stored on them becomes vital
- A growing number of people use cloud storage backup services
  - Not practical in many places
- In many developing countries, mobile phones enjoy high penetration rates
  - Broadband Internet access is very scarce
- This reality motivates the need for ad-hoc cloud services

MAIN IDEA

- Mobile cloud storage service
- Provide reliable backup storage of replicas of personal files
- Replicas stored in devices that are encountered with regularity
- Files retrieved when needed from neighbors instead of the cloud

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- Compute encounters graph and familiarity of nodes through time
- Create communities of familiar nodes at different times of the week

Monday Morning   Monday Evening

Monday Morning to Evening

Detected community that lasts from Monday morning to evening!

- Replicate files in each community
  - Files available throughout the week
- Retrieve when needed: files lost, phone stolen, phone changed…
- Simulations recover all files