Geosocial SPLIS: A Rule-Based Service for context-aware point of interest exploration

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Contents

- The System Geosocial SPLIS
  - Design and General idea
  - Geosocial SPLIS’s Features
  - Geosocial SPLIS’s Architecture

- Demonstration
GeoSocial SPLIS

Geosocial Semantic Personalized Location Information System

■ What?
  ■ A personalized LBSNS which connects user defined preferences (regarding POIs) with those of their nearby friends and POI owners’ group targeted offers

■ Why?
  ■ To provide proactive, customized and contextualized information

■ How?
  ■ Combining semantics with LBSNSs
Design and General idea

- Human mobility behavior is not completely random
- Regular users have preferences/daily patterns
  - If it is Saturday noon I would like some restaurants that serve Italian cuisine
- POIs adopt a rule-based policy to deploy their specific marketing strategy
  - A museum offers 15% discount to students on Fridays
- The service collects user’s context
- Combines all the above and presents personalized offers on Google Maps
Geosocial SPLIS’s Features (1/2)

- Collects data from external sources
  - Google+, Google Places API, POI websites
- Regular users add contextualized rule based preferences via a web editor
- POI owners add group targeted offering policies via a web editor
- Data from editor $\rightarrow$ RuleML $\rightarrow$ Jess $\rightarrow$ Sesame
- Executes and evaluates data and rules on the fly
- Uses Google Maps for visualization
Rule conditions

- LBS context
  - Location (e.g. within 800m)
  - Weather (e.g. sunny, rainy etc.)
  - Time (e.g. between 13:00-17:00)
  - Day (e.g. Monday)
- Every existing property of a POI
  - E.g. cuisine currently serves

Rule consequences

- Add a place in a recommendation list
Geosocial SPLIS’s Architecture

- **Client**
  - PC browser-based
    - Html, JavaScript, Css
    - Google Maps

- **Server**
  - Java Server Pages (JSP)
  - RDF data management
    - Sesame

- **Rules**
  - Reaction RuleML → XSLT → Jess