

CMSC818G - Advanced Topics in Computer Systems: Information-Centric Design of Systems

3258 AVW, 9:30am-10:45am – 2/5/2013

Brainstorming:

Context Aware Information Systems:

- Drives Device / Application Behavior – e.g. available options and presented features, visual presentation of information in mapping (symbology)
- Context Rule-based States of Operation, including specific user preferences

Spatial Location (GIS):

2D / 3D

Indoors vs. Outdoors

Proximity to object or feature of interest: e.g. Tour Feature / Scavenger Hunt Clues / Collision Avoidance!

Proximity to resource: Wi-Fi signal vs. mobile 3G/4G signal strength - proximity to charging station vs. battery saving behavior

Spatial networking: shorted route to an object or resources

Augmented Reality Mash-ups

Temporal (Also manageable in GIS):

4D

Time of day – device brightness behavior

What Visitor Parking is available now?

What's open now? And close to me?

Current Environmental Conditions

Solar illumination: Where can I go for a lunch meet up outside that's shaded? in the sun?

Seasonality and current weather conditions: temperature, cloud cover, precipitation, etc.

Other time-dependent information: Current or Future Construction Closures, Building Renovations.

Scheduling: Where do I go next? Suggested routes and what's available along the way.

User-Specific Behavior:

User Type: Default Level of Information Presented: Level of Expertise, Level of Interest

Specific User Needs (accessibility requirements: language, readability, physical access constraints)

Secure Data Access, Viewing / Editing Rights.

User-specified Themes or Other Behavior, Presets, etc.

Wish List! - Campus Project Ideas:

Location-aware campus outdoor tours, outdoor lab exercises (various departments), and scavenger hunts.

QR codes outside or proximity (GPS) triggered app behavior. <http://www.map.umd.edu/>

Campus Event Calendar Integration: What's going on on campus right now near me!

Special Events: Sporting / Athletic Events, MD Day. See <http://www.marylandday.umd.edu/> <http://www.cvs.umd.edu/>

Parking Scenarios – during sporting events, graduation, MD Day, “normal” conditions

See: <http://www.transportation.umd.edu/maps&apps.html>

Seasonality of plants – what's in bloom now, next week? Fall foliage symbology change / winter leaf-fall.

See <http://www.arboretum.umd.edu/SitePages/Home.aspx>

Campus way-finding and proximity feature locations (focus on convenience or officially designated locations).

E.g. Where's the closest (open) book store or restaurant?

Current or Future Construction Closures: Limits to Parking / Pedestrian Access (in progress)

Weather related alert integration. See <http://alert.umd.edu/>

ShuttleUM, Metro Bus, Metro schedule Integration (in progress)

3D & Interior Space location services for Emergency Response support (in progress)

3D overlay views of non-visible building infrastructure, underground utilities, etc.

Campus User Groups (Audiences): Professor, Grad Student, Institutional Data/Asset Manager, Dining/Landscape Service Worker, Custodian, Campus Administrator, Sports Fan, Visiting Researcher, 1st Semester Undergraduate, Courier, Campus Police Officer or Emergency Responder

Contact: Taylor Keen - Campus GIS Coordinator - University of Maryland - tkeen@fm.umd.edu