TransitGenie

building a context-aware, real-time transit navigator
8:30 am
finishing breakfast

- location: at home
- activity: stationary
- prediction: going to the office

- 4 route alternatives
motivation

• improve transit riding experience
• increase efficiency
• increase transit ridership
motivation

• improve transit riding experience
• increase efficiency
• increase transit ridership
• find interesting new problems
other uses

- ad-hoc trip about town
- real-time re-routing
- short connection warnings
- opportunistic transit
- Chicago Olympics
architecture overview
static data sources

✓ = got it

• need it

✓ cta bus, train, metra routes

✓ street map

• cta bus, train, pace, metra schedules

• pace routes

Student: Leon Stenneth
real-time data sources

✓ = got it

• need it

• real-time locations and arrival predictions

✓ cta bus tracker

✓ pace bus

• cta trains

• metra

• UIC campus shuttle

Student: Leon Stenneth
destination prediction

- given
  - time/date
  - location
  - prior trips

- predict
  - next destination
  - preferred route
  - next ‘tour’

Student: Chad Williams

Tuesday, June 16, 2009
route recommendation

- given
- schedules
- real-time tracking
- destination
- origin

Student: James Biagioni
continuous route updates

• monitor user’s trip progress
• advance warning of missed or short connections
• detect user choices, update recommendations
activity detection

- given
  - gps trace
  - accelerometry
  - street maps

- distinguish between
  - at rest
  - walking
  - running
  - riding in a bus
  - walking in a bus (!)
collaborative transit tracking

- given
  - gps trace of user
  - real-time transit traces
  - transit schedules
- determine
  - is the user riding a transit vehicle?
  - if so, which one?
team & activities

- James Biagioni - user interface
- Leon Stenneth - data acquisition
- Chad Williams - locations & predictions