### Ubiquitous and Mobile Computing CS 4518: *Snuber*

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## Snuber



- Problem:
  - SNAP drivers often have a hard time finding students.
  - Students often don't have any feedback as to how long SNAP will be or where it's heading.
- Importance:
  - SNAP is a useful way for WPI students to get around the campus area.
- Solution:
  - Uber for SNAP, students can request SNAP from their phone.
  - Students receive an estimated shuttle arrival time.

### Implementation

- Develop for android phones
- Using a django server
- Using GPS for driver and student location tracking
- Google Maps API
- Use camera for user profiles
- Firebase Cloud Messaging





### **App Flow Overview**





## **Onboarding Process**





# Login/Signup



### **Students Side**



- Students use the app to locate and call for a ride
- Only allows for valid destinations
- Tells student estimated time of arrival for the shuttle

### **Student Side**



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 REQUEST RIDE

 Calculating wait time...

 CANCEL REQUEST

 Ride requested!

 SWITCH TO DRIVER

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#### Student Page



Estimated Arrival Time: 14 Minutes

**CANCEL REQUEST** 

SWITCH TO DRIVER

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## **Driver's Side**

- Snap drivers would use the app to:
  - Display their location
  - Locate students in need of a ride
    - Displays information on where the student's location and destination
    - Displays student name and picture
- Drivers can switch to the student side and back



### **Drivers view**





### **Demo Video**



<u>https://drive.google.com/file/d/0B8jkU53lbbbmYl</u> <u>NqYnZPWIBxT0U/view?usp=sharing</u>

# Conclusions



- What the app can do:
  - Connect students to drivers and allow them to request rides
  - Displays location information for students and drivers
  - Gives feedback to the student for an ETA
- Gives student more control and information on the process

### **Future Work**



- Incorporating CAS login
- SNAP statistics
- Pickups along routes to maximize efficiency
- Path to destination for driver
- Ability to click on map to input destination
- Implement for SNAP?

### References



- <u>https://material.io/guidelines/material-design/intro</u> <u>duction.html</u>
- <u>https://developers.google.com/maps/</u>
- <u>https://www.wpi.edu/student-experience/resources</u> /safety/campus-transportation/student-night-assist ance-patrol
- https://web.wpi.edu/Images/CMS/Police/gateways huttle\_rdax\_300x225.jpg