

Graduate Research Day 2013

Florida Atlantic University

College of Engineering and Computer Science

Campus 2020: Pedestrian and Driver based GPS Navigation for the Florida Atlantic University Campuses

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Finding ones way around a college campus can be difficult on visitors, new faculty or students. Aid from technology such as GPS navigation is not available, as mapping providers rarely provide directions once one is on a college campus.

The campuses of the future would tackle problems such as these by allowing faculty, staff, visitors and students access to real time data, such as navigation based on current traffic conditions.

The recent rise of smartphone technology has allowed computation power to be at one's fingertips at virtually any given time or place. The quick access to information will allow the campus of the future to begin today.

As one piece of the Campus 2020 project, the FAU Campus Maps Android application allows a user to get driving or walking directions to a given location on any of the FAU campuses. In the case in which a user is driving the application would also provide directions the closest parking lot, which the user is allowed to park in, to their destination. As the application progresses, it will be integrated with other technologies, such as parking lots that report open parking spots, making a smart interactive campus a reality.



Motivation

- Google Maps does not provide information on campus locations (e.g. buildings, parking lots)
- Current GPS Systems do not provide directions to specific campus locations (e.g. Administration Building)
- Visitors, new students and new faculty can benefit from using an App that allows them to navigate inside various campuses.

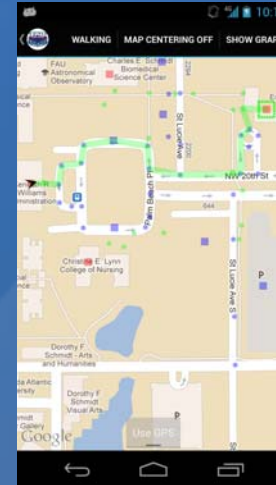
Goals

- App must run on Gingerbread and newer Android versions
- User-friendly
- Offer both turn by turn navigation and static directions mode
- Offer both driving and walking directions
- Directions available for all FAU campuses
- Minimize battery usage
- Uniform look and feel between Android versions

Future Work

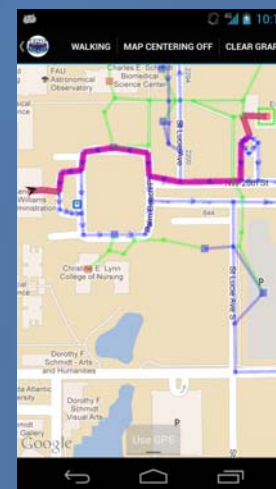
- Driving directions lead to an empty parking spot
- Alternate directions provided during heavy traffic
- Voice/text based directions
- Traffic sign alerts
- Speed monitoring

Static Directions



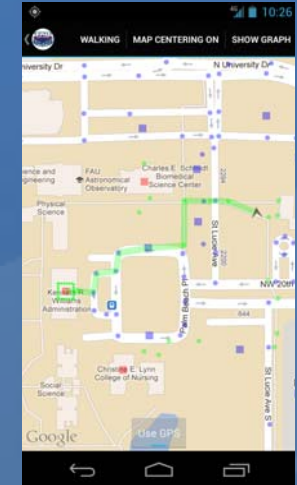
Static directions from a user provided source to a user provided destination

Graph Mode

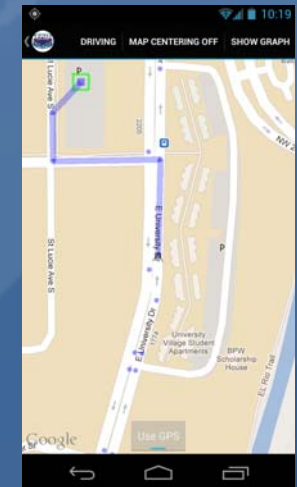


Used for testing, displays all paths

Navigation Modes



Walking Navigation



Driving Navigation

