Capstone Project Proposal

Project Number: S19-20

Project Title: Rutgers Transport on Google Home

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Five Keywords: Google Home/Assistant, Dialogflow, Webhook, Application Programming Interface (API), Natural Language Processing (NLP)
**Project abstract**

Many students live on campus and commute via Rutgers’ bus network. Sometimes it’s challenging to catch the next bus or arrive to class on time because the Rutgers app isn’t always accurate. In addition, opening the app constantly can be inconvenient when getting ready to leave.

For our project, we used Google’s assistive AI on Google Home and Google Assistant on supported devices to solve this problem. Google allows developers to create their own Google Actions, which can be customized via Google’s human-computer interaction platform: Dialogflow. Using this and other services, we were able to create custom commands for the Google Home so that it could understand what the user is asking and then return a response. We use webhooks which make HTTP requests to various APIs i.e. Transloc, GoogleMaps, etc. to retrieve relevant information to fulfill the user’s request. This response is sent back to DialogFlow for use by the Google Assistant to answer the user. For example, if a user asks when the next H bus is arriving at Scott Hall, Dialogflow sends our server the user’s request via a webhook. Our server then fetches bus times from the Transloc API and sends the response back to Dialogflow through the same webhook. Additional functionality includes calculating transit time more accurately by taking traffic conditions and walking ETAs into consideration. The Google Home will be able to alert the student what time they should leave their home in order to arrive at their destination on time every time.