

The Summer Undergraduate Research Fellowship (SURF) Symposium  
6 August 2015  
Purdue University, West Lafayette, Indiana, USA

# Implementation of a Speech Recognition Algorithm to Facilitate Vocal Commands for Visual Analytics Law Enforcement Toolkit (VALET)

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## ABSTRACT

The VALET (Visual Analytics Law Enforcement Toolkit) system allows the user to visualize and predict crime hotspots and analyze crime data. Police officers have difficulty in using VALET in a mobile situation, since the system allows only conventional input interfaces (keyboard and mouse). This research focuses on introducing a new input interface to VALET in the form of speech recognition, which allows the user to interact with the software without losing functionality. First an Application Program Interface (API) that was compatible with the VALET system was found and initial code scripts to test its functionality were written. Next, the code scripts were integrated with the VALET and additional code was written to execute the commands given by the user. Lastly, more functionality was added by including a button and keywords to toggle speech recognition on/off, and a panel to display visual feedback to the user. The results from the research showed that it was easier to give simple commands by voice rather than typing them out. It helped the user with having a new way to interact with the system that was accurate but also convenient when on the move. The speech recognition was able to recognize the correct commands with a high rate of success. The implementation of the speech recognition function was able to help the police departments in interacting with the system effectively when conventional methods were not an option.

## KEYWORDS

Voice Recognition, Voice Awareness, Visual data, Crime, Visual Analytics.