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Safety in View: A Public Safety Visual Analytics Tool Based on CCTV Camera Angles of View

A visual analytics tool leverages CCTV camera data to optimize security operations and provide safer paths for pedestrians.

Campus safety is a serious concern for both students and parents when choosing an educational institution. Public institutions invest substantial resources and funding to maintain campus safety. Therefore, more high-quality surveillance cameras are being installed on campuses to monitor safety of patrons. For example, according to Purdue University Police Department records, more than 100 Closed Circuit Television (CCTV) cameras were installed in 2014 compared to 54 CCTV cameras in 2010. With the increasing number of CCTV cameras, there is a shortage of analysis tools for both police and pedestrians to make good use of such datasets.

Researchers at Purdue University have developed a visual analytics tool that uses camera location and coverage data to improve law enforcement decisions and pedestrian safety. Using this tool, pedestrians can determine the safest path to their destination, i.e., the path with the most CCTV cameras. Specific user needs can be met through interactive adjustments to the provided path solution maps. In addition, security departments can view crime data analysis functions based on CCTV camera coverage to help predict and prevent crimes.

Pedestrian Benefits:

-Interface enables users to intuitively utilize CCTV coverage data

-Provides interactive traveling paths that minimize distance and maximize security of pedestrians

Law Enforcement Benefits:

-Optimize CCTV camera coverage using crime, traffic, and civil incidence reports

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Category

Artificial Intelligence & Machine Learning/Computer Vision & Image Recognition

Aerospace & Defense/Defense Electronics & Surveillance Technologies

Authors

Shehzad Afzal

David Ebert

Abish Malik

James Tay

Hanye Xu

View online

-Quickly locate cameras that capture specific incidents

-Identify critical cameras to monitor

Potential Applications:

-Public Safety

-Law Enforcement

TRL: 3

Intellectual Property:

Provisional-Patent, 2016-03-23, United States | CIP-Patent, 2017-03-23, United States | Utility Patent, 2017-03-23, United States | CON-Patent, 2019-06-29, United States | CON-Patent, 2019-12-10, United States

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