

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

Development of a Web Application for Continuous Analysis of Many Cameras (CAM²)

Anurag Anjaria, Dr. Yung-Hsiang Lu, Young-Sol Koh, Charles Hansen
Department of Electrical and Computer Engineering, Purdue University

ABSTRACT

There are tens of thousands of web cameras located around the world and publicly available on the Internet. The images captured by these cameras contain data relating to our living environment such as traffic patterns, weather and crowd movement. Researchers can capture this data using image analysis techniques on the video and image from these cameras. However, there is a lack of a single, unified repository of all the public cameras on the Internet; this, coupled with the computational demands of image analysis means there is a need for a tool to help researchers perform large-scale image analysis on many cameras. Continuous Analysis of Many Cameras (CAM²) is a framework that enables researchers to execute image analysis programs on many web camera image data on a large scale. Users can choose from a database of more than 70,000 cameras worldwide, and its custom application programming interface (API) enables users to upload their own image analysis programs for the system to execute. This paper will detail the structure and use of the CAM² system through its website, and discuss updates to the system introduced in the July 2015 Alpha 1.4 release. These changes have improved stability and usability of the system, making CAM² a more effective tool for researchers.

KEYWORDS

Web application, image analysis, cloud computing, network camera, big data, software development