Automated Indexing of Visual Data from Network Cameras

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**Network Camera Samples**

- Tranbjerg, Denmark
- New York, New York
- Las Angeles, USA
- Buceras, Mexico
- Rome, Italy

**Data from Network Cameras**

- More than 200 million network cameras deployed worldwide (IHS Markit) and stream visual data continuously.
- The goal of this project is to automatically index public network camera data so it may be used for purposes beyond its intended use.
- CAM2 currently has more than 110,000 cameras in national parks, street intersections, construction sites, tourist attractions...

**Network Camera Discovery**

- We crawl the Internet and search for camera images and live video data.
- Network cameras are identified by checking for images that change over time.

**Results**

- A prototype Web Crawler ran 17 days on 85 network camera websites.
- The Web Crawler found 395,839 unique images across 184,308 pages.
- 16,000 potential network cameras identified.

**Analysis of Web Structure**

- The heterogeneous structure of camera websites makes indexing this data difficult.
- Each site has a unique structure and method for presenting the camera data.

**Automated Data Indexing System**

- Internet
- HTTP
- Web Crawler
- Image Metadata
- Network Camera Identification
- Verified Cameras
- Camera Data API
- HTTP
- Users