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SMARTVID.IO

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SMARTVID.IO

THE NEED

The collection, organization, and retrieval of industrial media is a pervasive challenge that is especially glaring for companies in the AEC industry. Construction projects often generate large volumes of pictures & videos from the field for tracking progress and communicating between engineers, contractors, and subcontractors. It is not uncommon for field personnel to capture hundreds of photos per week on any given jobsite.

The volume of photos and videos generated on the job site is also growing due to increasing adoption of drones, wearables, fixed point cameras, mobile phones and tablets. This digital media is often stored in various siloed systems, making it difficult or impossible to find by the operations, safety, marketing and claims groups that need it. Tremendous time is burned manually searching for imagery as well as requesting internal approvals for the external use of media for marketing or distribution to owners. And, ultimately, valuable field imagery often goes lost or unused altogether resulting in missed opportunities to improve safety, quality, and productivity on the jobsite.

THE TECHNOLOGY

Smartvid.io is a cloud-based software solution designed for the specific needs of industrial media. The application's internal deep-learning engines, collectively nicknamed VINNIE (for 'Very Intelligent Neural Network for Insight and Evaluation'), use speech and image recognition to analyze and organize pictures & videos.

The application makes it easy to organize photos and videos by project. Photos and videos taken by team members, using "off the shelf" equipment such as digital cameras, cell phones and GoPros, are all aggregated into one central place. As files are uploaded - either manually, or via several available integrations with leading construction management platforms - VINNIE automatically places SmartTags on photos and video frames based on their visual and audio content. The app can recognize and SmartTag essentially any words in speech, as well as thousands of visual object categories. Media libraries are therefore made searchable by their actual content without any manual human effort, although users may also apply manual tags as they see fit for project-specific needs.

FIGURE 1 “SMARTAGGED” VIDEO FILE

The system gives incredible flexibility to content collection, retrieval and retention. Users search for combinations of one or more tags to find critical files, and save links to these “slices” of the company’s media database. Users can also share these links with colleagues, contractors, suppliers or clients, at configurable access levels offered to account for a range of potential security requirements. The app also includes collaboration features such as commenting panels and basic photo & video editing tools.

FIGURE 2 SMARTVID.IO SAFETY CLASSIFIERS DETECTING HUMAN WORKERS

THE BENEFITS

Smartvid.io tames the challenge of effective enterprise-wide media management, automates otherwise tedious manual processes, and provides an “insurance policy” by enabling easy retrieval of critical photo and videos. Clients who have implemented Smartvid.io have achieved a 60% improvement in field documentation and image retrieval processes. And getting started is easy, especially for customers using Smartvid.io’s direct integrations which can be connected within 90 seconds, immediately improving media access for both project teams as well as operations, marketing, and safety professionals. Besides saving time, customers are also using Smartvid.io to get “more eyes on site”, providing them far greater reach or “coverage” of their safety and quality programs across their active jobsites.

In 2016, Smartvid.io partnered with Engineering News Record for the Artificial Intelligence for Construction Safety Challenge³, where VINNIE analyzed construction site images alongside human experts for instances of common safety infractions. VINNIE was able to accurately inspect over 1,000 images in less than 10 minutes compared to 4.5 hours for the experts.

STATUS

Smartvid.io is being used today by several top in the construction industry. Below are selected examples:

- Suffolk Construction¹ – Use of Smartvid.io for field documentation, management and retrieval has resulted in time savings of 60% over original process.
- ARUP² – Use of Smartvid.io as part of infrastructure inspection programs to boosting data on project “health” data, such as cracks in tunnel walls.
- Stiles Construction – Integration of existing system with Smartvid.io has led to better and quicker documentation, better detection of safety infractions, and lowered approval costs.
- Skanska USA - Use of Smartvid.io for project milestone tracking as well as safety and training.

Smartvid.io currently offers direct integrations with the following construction management and enterprise file sharing systems:

- Procore
- Autodesk’s BIM 360 Field
- Egnyte Enterprise File Sharing

BARRIERS

Visual and speech recognition classifiers are constantly being improved and are rarely 100% accurate. Data integration is a challenge for many companies. Smartvid.io is actively expanding its integration partnerships with additional construction management partners. Technology faces common adoption hurdles including perceived value, implementation concerns, security concerns, and questions regarding best practice and overall connectivity.

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REVIEWERS

Peer reviewed as an emerging construction technology

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