AUSTRIAN INSTITUTE OF TECHNOLOGY
TOMORROW TODAY

OBSERV3D QUEUE ANALYSIS

ENABLING ACTIVE QUEUE MANAGEMENT

OVERVIEW

Observ3D Queue Analysis is a software solution with the primary objective of queue analysis to derive information including metrics such as waiting time and queue length to support an active queue management. It's robustness is achieved by asymmetric three-camera stereo configurations for optimized depth range and accuracy. Queue management is essential in service operations (e.g. check-in desks at airports) and retail because customers' experiences when queuing have a huge impact on their perceptions of your services. Moreover, it helps to optimally utilize available staff resources.

APPLICATIONS

Observ3D queue analysis can be used in various applications such as retail or service operations. Typical applications comprise:

- Announcement of waiting times
- Queue load balancing for multiple queues
- Creating reports or real-time alerts to improve performance of customer service
- Staff management of the operator

KEY FEATURES

- System output: number and location of detected persons in queue, queue waiting time and velocity of queue, queue shape and location, live camera views
- Accurate queue analysis information in real time
- Provides average waiting times as well as time measurement for each individual person in the queue
- Algorithm automatically detects arbitrarily shaped queues without predefined queue configuration
- Automatic ground-plane estimation
- Highly robust to occlusions due to powerful 3D point cloud analysis
- Single unit monitors large area (10m x 15m)
- Flexible camera perspective allows operation under various structural conditions
- Asymmetric 3-camera configurations for optimized depth range and accuracy
- Highly robust against varying environmental conditions (e.g. rapid changes in lighting situation) by analysis of high-quality 3D information
- Functionality is offered as a web service, which allows a distributed concept having analytics and user interface on separate physical machines
- Easy integration into existing systems due to the RESTful interface using JSON

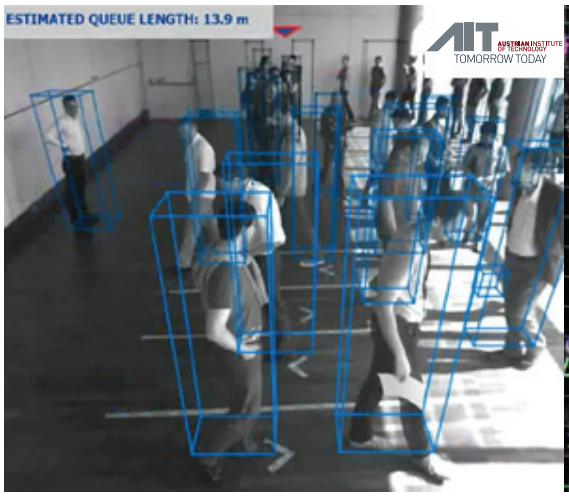

Figure: Queue length estimation of detected people

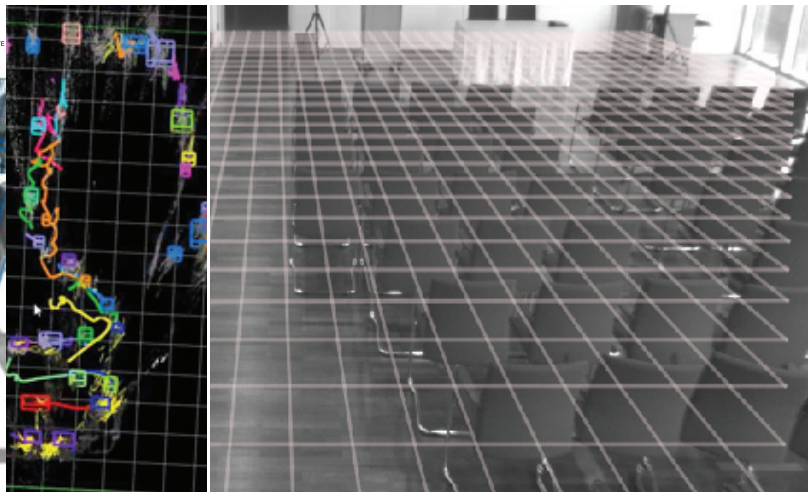

Figure: Result of an automatic ground-plane estimation

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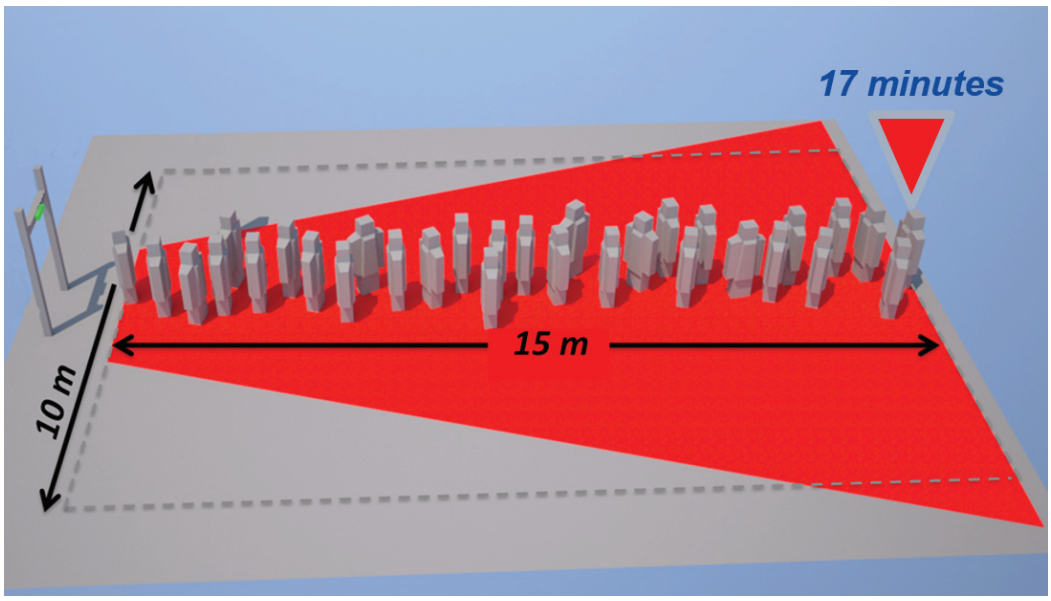

Figure: Visualization of an optimal setup

REQUIREMENTS

- Ethernet stereo camera (Gigabit, Power over Ethernet)
  - -) mounted above the scene, camera lenses perspectively directed to the observed scene
  - -) camera mounting height: 2.6 – 4.5 meters
  - -) monitoring area up to 10mx15m
- Operating system: Microsoft Windows 7/8.1 64 bit
- Manual configuration: region of interest

CONTACT

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