Disclaimer

The following report represents the views and opinions of the author only and does not represent the views or opinions of the IEEE.

The following presentation is a collection of information limited to the 3 convention center halls.
Welcome to CES!
“Selfie” Products

- Auto everything image capture
- Pocket sized
- Enablers:
  - “Back Side Illumination” for sensor die shrink
  - BLE for remote controllers
  - MIPI for inter-connect shrink
Sports & Lifestyle Image Capture

- Highly ruggedized
- Physically unobtrusive
- **Wireless preview/output**
- High resolution, high frame rate
- Large field of view
- YouTube HD is a key enabler!
Drones!

- Great potential for broadcast and public sector agencies
- Serious Regulation Issues!
  - Blade Safety
  - Collision Avoidance
  - Motor/Battery Failure Procedure
  - Identification Beacon
  - Nuisance/Privacy Regulations
  - FAA Jurisdiction?
  - Anti-Terrorism???
  - Public Safety Nightmare!
Photogrammetry

- New uses for old technology
- Depth mapping for new uses
- Data enhanced imaging
- “Computational” imaging
- No longer just for cartography
- Showing up in strange places
Thermal Imaging

- Went from $50,000 to $500
- Low cost enables new applications.
360 Degree Capture

- Capture full 360 degrees
- Very difficult to mate edges of images, especially with video
- Playback tools currently immature
- Viewer can select viewpoint after image capture
Automotive is Explosive!

- Multi-camera collision avoidance, view enhancement.
- Driver gesture detection
- Infotainment
- Event Capture
Most Creepy Awards!

*Image of a smart home device and a live performance stage.*

**Smart Home**

Sengled
Snap

Indoor/Outdoor LED PAR lamp with integrated 720p HD IP Camera, microphone, and speaker. Supports cloud recording/playback, voice and motion activation, facial/activity recognition for home security, automation and commercial applications.

sengled.com
Most Overlooked Product Award!
Imaging Take-Aways

Progression of Video Capabilities

1. Compressing & Recording Video
2. Adding Meta Data
3. Real Time Video Correction
4. Detecting Simple Objects
5. Detecting Complex Objects
6. Extracting 3D Information

Good Time to be an engineer!