Data Reduction

Deep Vision's data abstraction technology delivers fast and efficient data reduction.

Deep Vision's novel concept of data abstraction quickly transforms abundant sensor data into a form that is easily classified and efficiently stored.

The abstractions created from the raw data are extremely compact. For instance, 64 abstractions (avg. 16 symbols each) requires 1 KB of storage capacity.

By abstracting the raw data into this compact form, the effective storage capacity is increased. For example, a lossless compressed image requires 177 KB$^{\alpha}$ of storage capacity while, the abstractions for the same image would require a mere 1.1 KB$^{\beta}$ thus freeing 175.9 KB of storage capacity per image stored.

α Typical storage requirements of a 640 x 480 8 bpp PNG image file.
β Typically. Based on test results using 640 x 480 images.

Exploitation Value

- Communication between distributed, multi-modal sensors:
  - Counter-mobility Systems
  - UAVs
- Semantic information storage:
  - Content-based Data Searching
  - Portable Devices

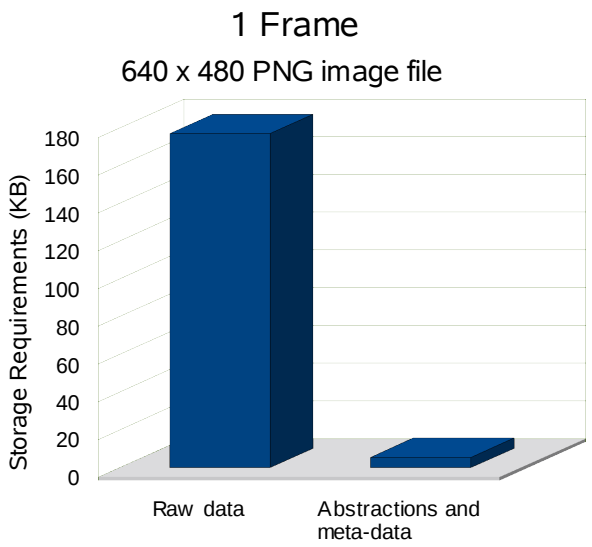
Input Requirements

- Archived data sets
- Real-time acquisition from visual, thermal, or sonar sensors.

Operating Facts

- Operating System: Any (*GNU/Linux recommended)*
- Hardware Requirements: *None*
- Sensor Modalities: *Visual, Thermal, Sonar*
- Timings†: 100+ FPS
- Runtime Memory Requirements†: 300 KB
- Storage Requirements‡: 1.1 KB

† Typical. Based on a 640 x 480 data set
‡ Typical. Based on 45 abstractions (avg. 25 symbols each)



Features

- Transforms high volume/low value sensor data into low volume/high value information.
- Efficient information analysis
- Effectively increases storage capacity

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