

A decorative header at the top of the slide features four overlapping spheres. From left to right, they are light green, light blue, light red, and light yellow. The spheres are partially cut off by the top edge of the slide.

Frontiers in Computer Vision Workshop, MIT, August 2011

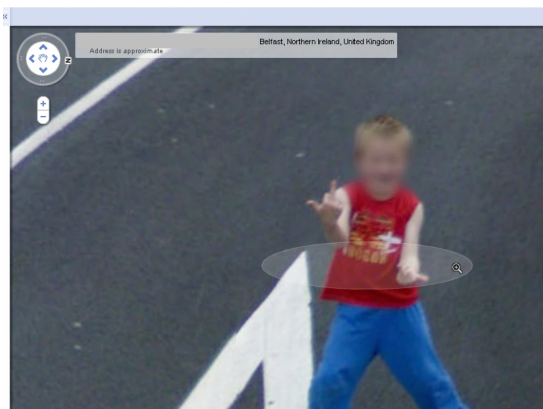
Relations between academia and industry

David Martin

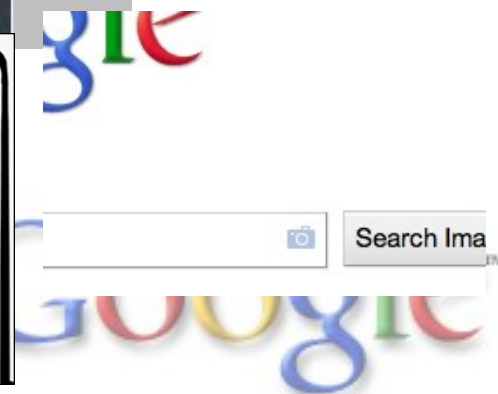
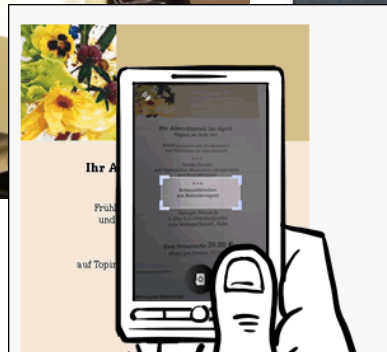
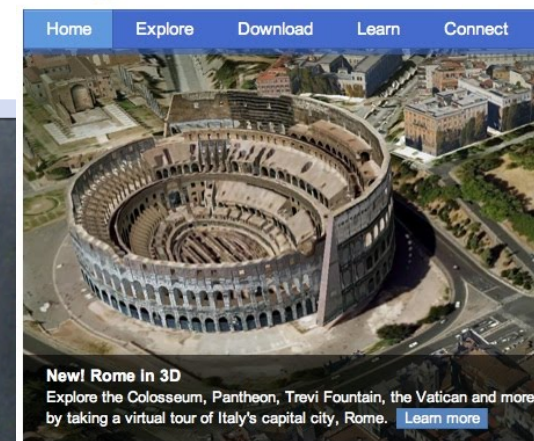


Computer Vision at Google

- Streetview / Earth: Faces, OCR, SFM, 3D models
- Self Driving Cars [[video1](#), [video2](#)]
- Youtube video stabilization [[web](#), [video1](#), [video2](#)]
- Search: By image [[video](#)], Goggles [[video](#)]
- Book scanning: OCR, structure, languages
- Picasa: Face movie [[video](#)]



Google earth



Computer Vision Trends

1. Mobile [Android, iOS]
2. Real-time [Mobile, GPUs, Services]
3. Systems [Search, Maps, Books, Cars, Games, AR]
+ context
4. Impact [SIFT, OpenCV]



A Proposal for Impactful CV

- ATLAS := Automatically Tuned Linear Algebra Software (BLAS + LAPACK, C + FORTRAN): [home](#), [papers](#)
"All of the routines in ATLAS tend to be competitive with the machine-specific versions for most known architectures. However, ATLAS is not just about working well on known architectures, but also tries to be optimal for unknown machines." [faq]
- Long story: IEEE FP, interfaces, math, introspection.
- Funding: Mostly NSF, also DoD.
- Open source, BSD license.
- Not just performance...
 - For ATLAS: Accuracy, stability.
 - For CV: + sensors, uncertainty, environment.
 - None of these are independent!
- Automatically Tuned OpenCV?

