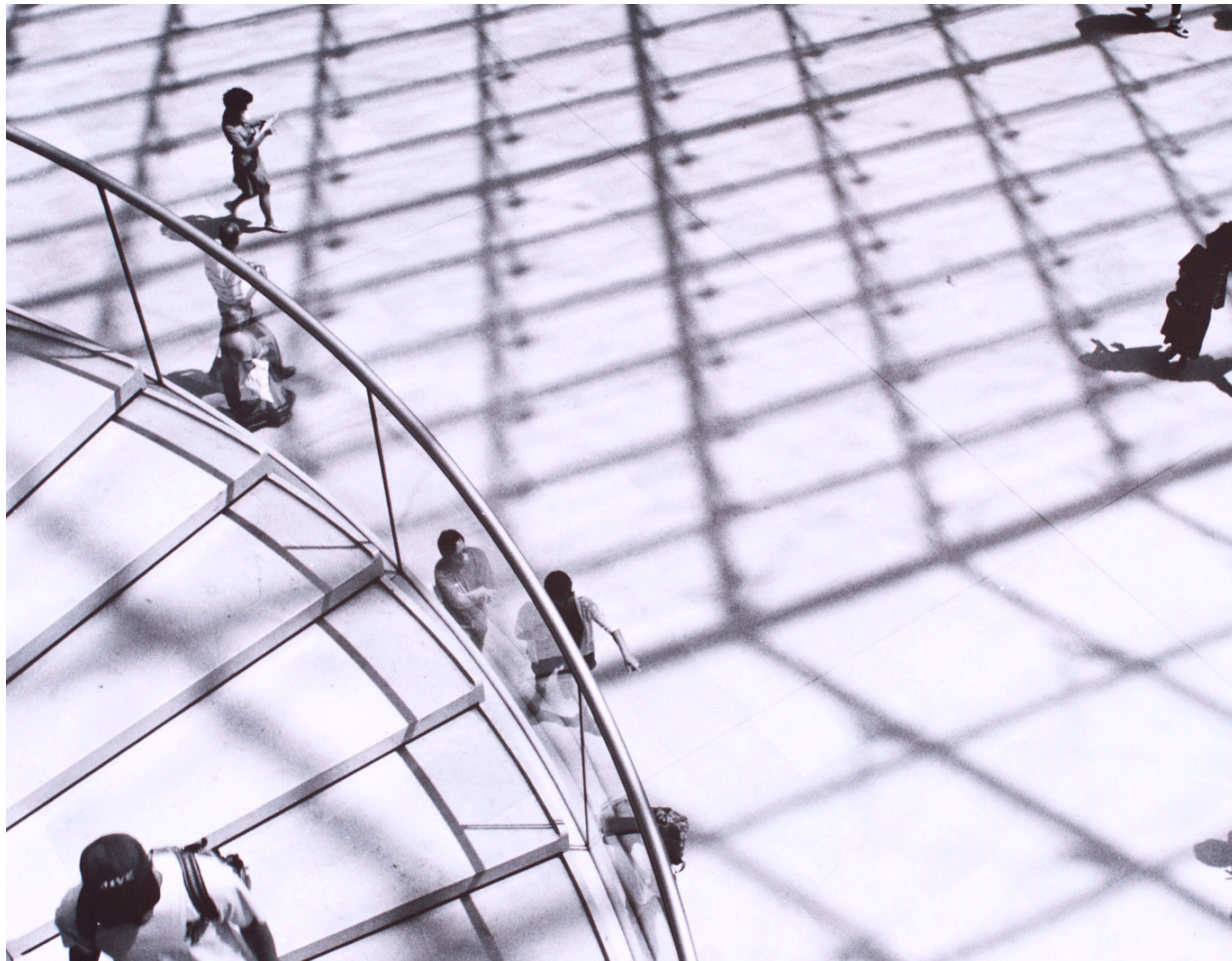




SURF
NET

Towards building augmented
reality web applications

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About me and my talk

Me:

- Employee of SURFnet, Dutch NREN organisation
- Author of PorPOISe, open source server for Layar

My talk:

- Introduction to AR applications
- Analysis of an AR application
- Thoughts on local device access in web apps
- Security
- Summary
- Questions



AR applications



2009 has seen a slew of AR applications:

- Layar, Wikitude, Bionic Eye, Ray-Ban Virtual Mirror, Flash-based marketing gimmicks



All are delivered via WWW tech

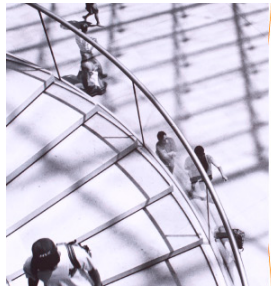
Some of these use web technologies internally such as

- HTTP (Layar, Wikitude, Flash)
- JSON (Layar)
- XML (Wikitude)

but all of them use something proprietary



This should change!



Dissecting Virtual Mirror



<http://www.youtube.com/watch?v=Ag7H4YScqZs>



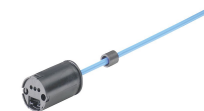
What we need

- Access to audio and video feeds
 - Think beyond webcam and microphone, any stream would be great
- Tracking algorithm
 - Built-in saves resources...
 - ...but requires vendors to implement it
- Everything else is (almost) available
 - HTTP for data transport
 - HTML/CSS for interface markup
 - JavaScript for control
 - WebGL for 3D rendering



We want more...

- Mobile AR applications such as reality browsers cleverly combine multiple inputs
 - Camera
 - Location
 - Direction
 - Device position
- We want access to that information too (some is already available in HTML5)
- We want access to other stuff too
 - Gyroscope
 - Thermometer?
 - Altimeter? Air quality? Humidity? You-name-it?
- **Do we need a generic device interface?**





Don't forget about security!



- Allowing access to local devices is a security/privacy risk
 - Access to personal audio/video recordings
 - Access to local storage
 - Access to security devices
- Some users don't care (shows Chatroulette)
- Others may decide against using the technology at all
- How can we design our device API's so that they inspire trust?



Summary



- Augmented reality is all about context
 - Experience is based on input taken from context
 - Output is shown in context, i.e. reality
- Web technologies traditionally lack interface to local resources
- Diversity of local resources is growing, use for applications is obvious
- Security is a very important issue
- Time to design some new features!



Questions?



Any questions or remarks?

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