

Innovative Tools With Open-Source Lecture Capture

Stuart Phillipson

stuart.phillipson@manchester.ac.uk

James Perrin

James.S.Perrin@manchester.ac.uk

Andy Wilson

andrew.wilson-2@manchester.ac.uk

Lecture Capture at the University of Manchester

Scale has been key

- 30,000 hours of lectures recorded per year
- > One million downloads in 2013/14.
- 143 rooms currently, expanding to >350 in 2015.
- Currently only recording the projector output.
- Running an 'opt-out' model.

Open-source Lends itself to Innovation

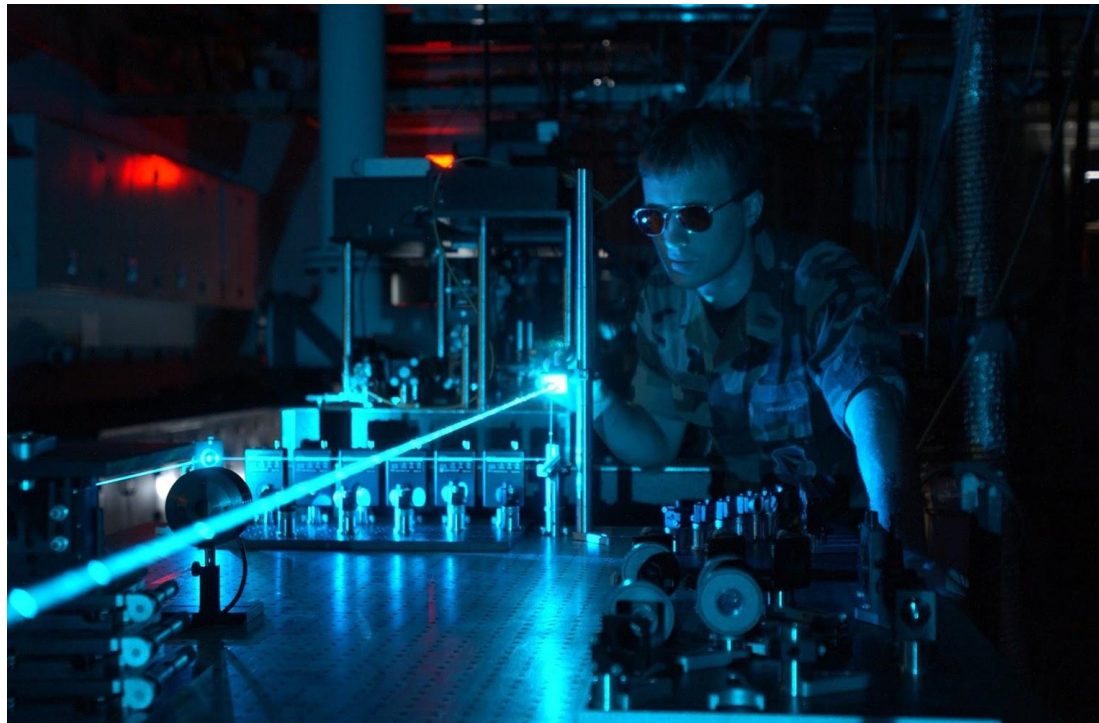
Problem 1

“I want video editing but don’t have the time / skills”

“I know in advance I won’t need this section”

Open-source Lends itself to Innovation

Problem 1





QR Codes

- Established technology
- It's just an image (says pause)
- Lectures are familiar with adding images to presentations
- Templates dictate scale and border

Capture Agents

Small and low cost

- Micro ATX commodity PCs + capture card
- Teltek's Galicaster Capture Agent software
 - Open source
 - Uses Gstreamer for audio/video handling
 - Extensible by plugins

QR Code Plugin

- Uses ZBar (GStreamer element)
 - Open Source Bar/QR code scanner
 - Works on video feeds
- Plugin is ~100 lines of code
- Pauses recording within a couple of frames
- Recording resumes ~1s after QR Code is removed
- The specific content is never recorded or stored
- [QR Code Demo](#)



QR Code Editing

Really popular!

- Exploits users' existing skills.
- Very easy to use.
- Requires no training.
- Used every day.
 - Trim start and end of recordings
- Built on the shoulder of other open-source technology.

Open-source Lends itself to Innovation

Problem 2



Automated Tracking Cameras

Lecturesight

- Utilizing computer vision Techniques
- Using motion detection against a still background
- [Lecturesight Demo](#)



Automated Tracking Cameras

Lecturesight

- Collaboration between University of Osnabrück, ETH Zurich and UoM - Open source
- Off-the-shelf components - low cost & complexity
- Requires No change in users Behavior



Open-source in HE

Sharing in HE pushes us forwards



Questions