

Examining and Invigilating Distance & Online Courses using QuestionMark and Remote Online Invigilation

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- **Online exams & invigilation - what Informatics does**
- **Other online & invigilation assessment options**
- **Cheating?**

DSTI Programme

3 years experience using QuestionMark and ProctorU

Online Exams - What Informatics Does

- 2018/19: 5 courses, 55 students
- Exams via QuestionMark: University supported web service, times overlap with on-campus exams, same exam content, EASE access
- Invigilation via ProctorU external service: c. 20 GBP/student/hour, video and biometric monitoring, reports, support for online difficulties, online exam access preparation
- Marking from printouts: downloaded word document

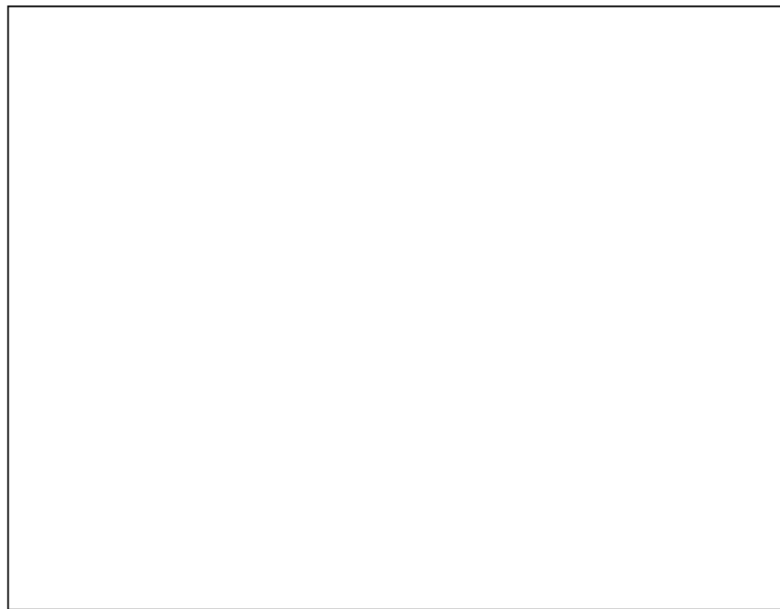
Sample Exam View

4128455392287883

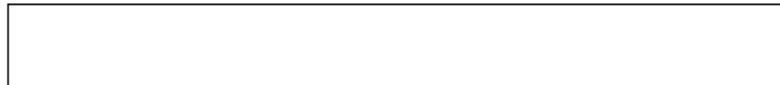
AV Sample Exam

Robert Fisher

5. **Q1d:** Why does using normalised RGB data help compensate for illumination variations? When would using normalised RGB make the problem harder?



6. **Q1e:** Think of the ball tracking example in the lecture. If you were only watching the ball fall, without observing any bounce or stopping, you would only need a simple state model. Is there any advantage to using the Condensation Tracking in this scenario? Why or why not?



Sample Student Exam

Coaching Report			
Participant ID		Assessment outcome label	Feedback
Assessment name	AV Exam 1 2018-19		
Questions			
1 Q1a			
Question wording	Q1a. Give five examples of representations (or outputs) that a deep net can compute when applied to one or more images, as discussed in the course.		
Answer given	<p>A deep net can perform multi-class classification, in which case it outputs a vector of probabilities for an image, one for each class, and the probabilities sum to 1.</p> <p>It can also output a real number, such as the height of a person in the image.</p> <p>It can output the optical flow at each pixel of the image.</p> <p>It can output a label for each pixel for image segmentation. The label would correspond to a class for each pixel from a fixed set of classes, such as grass, pavement, sky etc in an outdoor scene.</p> <p>It could output the image depth at each pixel.</p>		
2 Q1b			
Question wording	Q1b. Suppose you are building an inspection system for T shaped biscuits that are coming down a conveyor belt. You want to make sure that the edges of the biscuits are correctly formed (e.g. no		

Other Question Types in QuestionMark

- Multiple choice: single or multiple answers
- Box fill in
- Click on answer
- Likert scale: strongly agree ... strongly disagree
- Ordering possible answers
- Graphical drag and drop

Some Other Online Assessment Options

- **Learn:** Multiple choice, true/false, fill in blank, free text, and more
- **Turnitin:** PDF text input, review for plagiarism, some markup tools, fill in the box grading forms with score accumulation

Online Invigilation: ProctorU

- Browser based, access QuestionMark at UoE by URL
- Browser & PC lockdown
- Video & audio monitoring
- Keyboard biometrics
- Webcam: initial room scan, face monitoring
- Screen monitoring
- Session recorded
- Passport ID verification
- 20 GBP/student/hour

ProctorU Monitoring Screen

The screenshot displays the ProctorU monitoring interface. At the top, there is a navigation bar with the ProctorU logo and a user profile for Bob Fisher. Below this is a breadcrumb trail: Home / All Institutions / University of Edinburgh / All Exams / INFR11151 - Advanced Vision (Distance Learning). The main content area is titled 'Session' and includes several sections:

- User Information:** A card showing the user's name, institution (University of Edinburgh), time zone (America/Sao_Paulo), and status (Active). A video feed of the user is shown with a white redaction box over their face.
- Session Details:** A list of session attributes including Type (Live+), Exam Term (Spring 2019), Session Status (Fulfilled), Appointment ID (215833ad), Exam Start (Wed 05/01/19 11:20 AM BST), Actual Start (Wed 05/01/19 11:18 AM BST), Actual End (Wed 05/01/19 1:35 PM BST), Exam Duration (120 minutes), Appointment ID (215833ad), and Session ID (eaf60147). The reviewer is Nikki (LO) Penafloida.
- Office Contact:** Exam Contact Name: Bob Fisher, Email: rbf@inf.ed.ac.uk, Phone: 441316513441, Notes: Wednesday 1 May 2019, 0900 - 1330 (BST).
- Authentication Methods:** A table listing the user's authentication history.
- Timeline:** A summary card showing 120 minutes, 1 comment, and 2 incidents.
- Live Stream:** A video player showing the user's video feed and a screenshot of their computer screen displaying a 'ColorCheck' test.
- Activity:** A bottom navigation bar with tabs for Exam general, Pre-checks, Browser, Scores, and a plus sign for more options.

Name	Created	Score
Keystroke Enrollment	11:18am BST on May 1, 2019	100

Issues Encountered

- ProctorU or QuestionMark exam window timeout :
use generous time windows
- Time zones and unsociable exam hours
- IS exam support (Saturday exams - IS is great so far)
- Dropout of internet connection (Board of Examiners)
- Text only (no formula editor or sketch input)

How to cheat (see YouTube guides)

- Inspect HTML for answer
- Text sharing
- Notes on wall/hand
- Speak to others
- Substitute sitter
- Screen share
- Video glasses and ear speaker

ProctorU methods should catch these

Other Online Invigilation Services

- ProctorExam - software product, needs service partner
- Oracle/Pearson VUE - online service
- Examity - online service
- Talview - online service
- Pearson VUE - big scale exams (1000s of students), at exam centres

Questions?

More on Online Exams and Invigilation

- Online Proctoring is Trending: Here is All You Should Know About It; Joe, 2019, <https://blog.talview.com/a-complete-guide-to-online-remote-proctoring>
- Online cheating and countermeasures; Reena Ghosh, 2015, <http://certmag.com/online-certification-testing-growing-popularity/>
- A TEST OF INTEGRITY: REMOTE PROCTORING IN AN ONLINE CLASS; Cochran, Troboy, Cole (2010) https://www.atu.edu/jbao/fall2010/ACTEB_Articles/CochranATestOfIntegrityJBA0Fall2010.pdf