Cheat me not: automated proctoring of digital exams on Bring-Your-Own-Device

Migut, G.; Koelma, D.; Snoek, C.G.M.; Brouwer, N.

DOI
10.1145/3197091.3205813

Publication date
2018

Document Version
Final published version

Published in
ITiCSE’18

Citation for published version (APA):
https://doi.org/10.1145/3197091.3205813

General rights
It is not permitted to download or to forward/distribute the text or part of it without the consent of the author(s) and/or copyright holder(s), other than for strictly personal, individual use, unless the work is under an open content license (like Creative Commons).

Disclaimer/Complaints regulations
If you believe that digital publication of certain material infringes any of your rights or (privacy) interests, please let the Library know, stating your reasons. In case of a legitimate complaint, the Library will make the material inaccessible and/or remove it from the website. Please Ask the Library: https://uba.uva.nl/en/contact, or a letter to: Library of the University of Amsterdam, Secretariat, Singel 425, 1012 WP Amsterdam, The Netherlands. You will be contacted as soon as possible.
Cheat Me Not: Automated Proctoring of Digital Exams on Bring-Your-Own-Device

Gosia Migut
University of Amsterdam
The Netherlands
mmigut@gmail.com

Dennis Koelma
University of Amsterdam
The Netherlands
koelma@uva.nl

Cees G. M. Snoek
University of Amsterdam
The Netherlands
cgmsnoek@uva.nl

Natasa Brouwer
University of Amsterdam
The Netherlands
natasa.brouwer@uva.nl

ABSTRACT
Detecting fraud in digital assessment is currently done by human proctor, that observes recordings of the exam. This is costly, tedious and time consuming process. In this paper we present preliminary results on automated video proctoring, which has the potential to significantly reduce manual effort and scale-up digital assessment, while retaining good fraud detection.

CCS CONCEPTS
• Social and professional topics → Student assessment;

KEYWORDS
digital assessment, automated proctoring, higher education

ACM Reference Format:

1 INTRODUCTION
Our society is increasingly becoming digital. Educating students for such a digital world entails that assessing their skills should be firmly embedded inside this digital world [3]. In digital assessment a student is tested on a computer. This closely resembles the natural problem solving environment where students learn and practice.

The University of Amsterdam has recently proposed a digital bring-your-own-device (BYOD) assessment taken either at a university location or at home. To prevent cheating, the student laptop screen is video recorded during the exam and afterwards the video content is inspected by a proctor who signals and flags unauthorized actions. Online remote proctoring enables (1) more authentic exams by allowing open resources, (2) use of BYOD in a regular lecture room, (3) off-campus online exams as a part of an online program, for example, at home anywhere in the world [1]. Currently, the proctoring is done by hand, by observing the computer screen recordings of the students. To save time and resources, and also to make this form of proctoring more accessible to larger group of users, there is a strong need to automate the proctoring process.

...