

# Automated Online Exam Proctoring

### Introduction

- More than 7.1 million students are taking, at least one online course in 2013 in America.
- ✤ 70% of universities believe that online education is a critical component of their long-term strategy.
- Problem:
  - About 29% of the students admitted to cheating in online exams in 2013.
  - $\succ$  74% of students in 2013 indicated that it would be somewhat easy to cheat in online exams
  - No convenient way to provide human proctors in online exams

### **Proposed Approach**

✤ A computer vision system to perform automatic and continuous online exam proctoring.



### Hardware Components

Wearcam

Webcam

Microphone



Hardware

Example





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- Face detection  $\rightarrow$  Viola-Jones.

- segment features from STFT.

- Tracking 3D points on face.

- Constraints on object size to

















