Progressive Chalkboard Recorder

Chalkboard class material capturing & providing application

TEAM Thevelopers
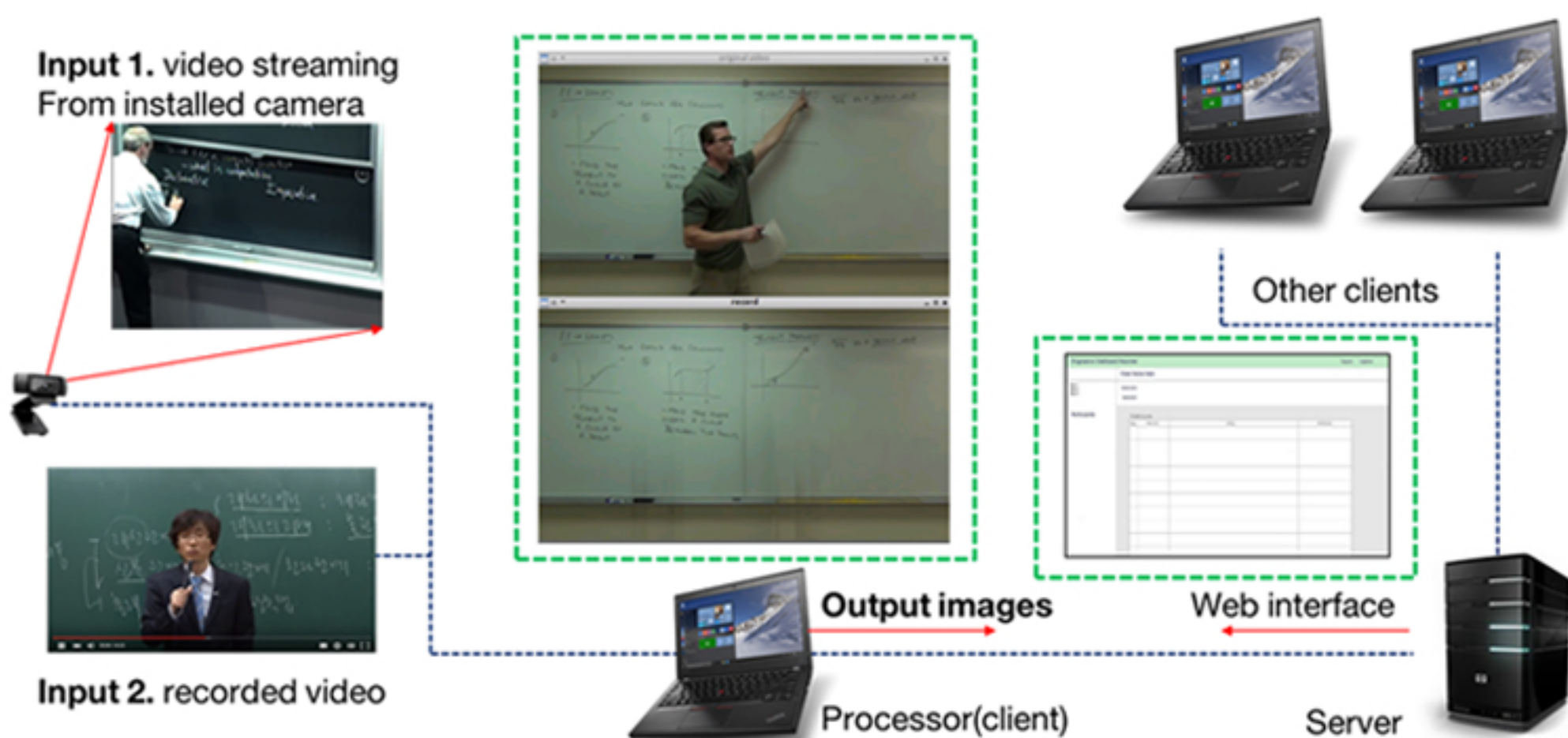Minkyu Kim, Onesphore, Yihan Kim, Byeonggyu Bak

Overview

- Provide an automatically note taking service, which is accessible through web
- How?
  Capture the chalkboard during real-time class and provide it through web UI
- Lot of students suffering from concentrating both writing and listening to the lesson will be helped by this application
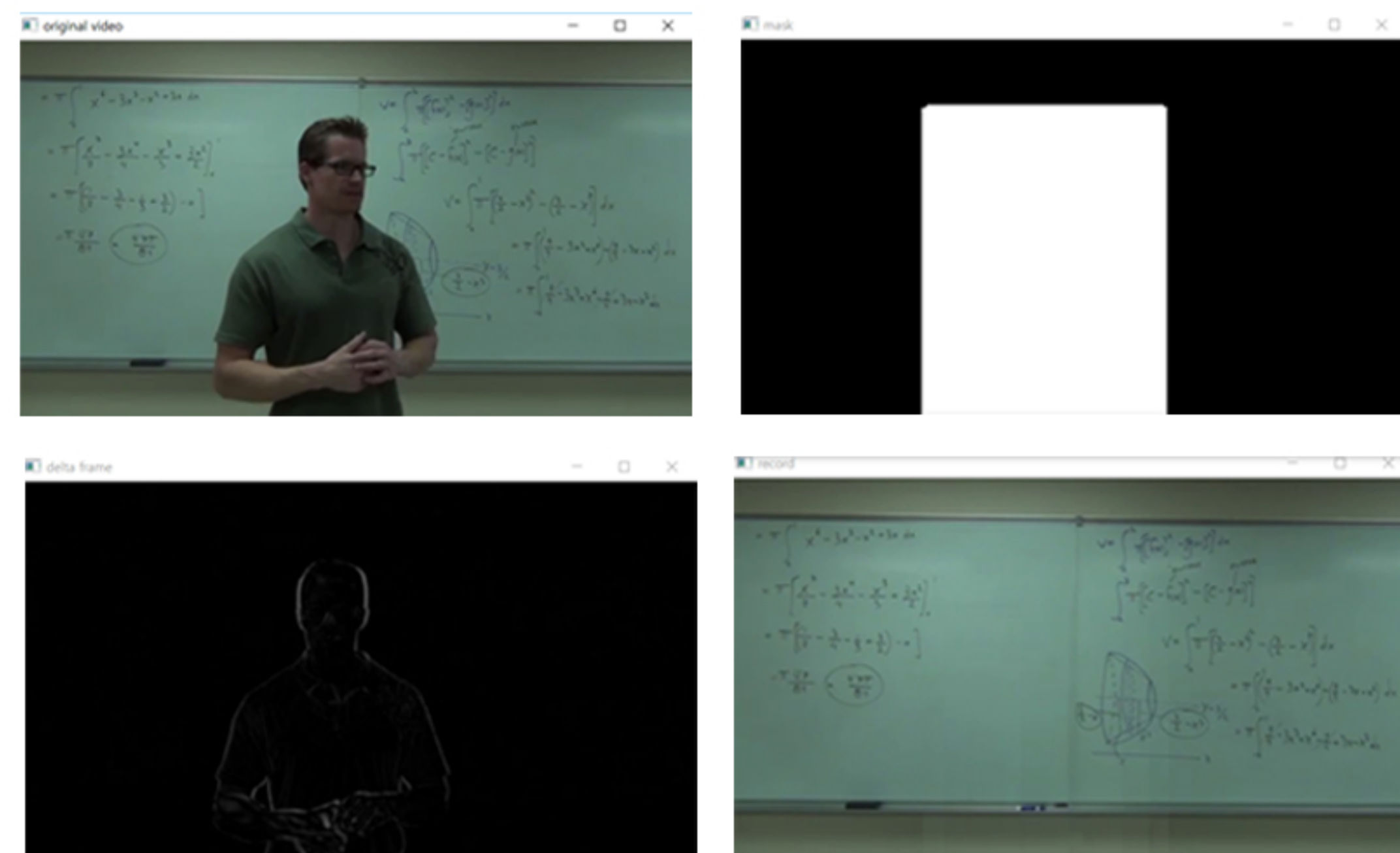
Technical Challenges

- Extract intact writings on chalkboard without instructor

- Background color elimination

- Key features detection & selection -> Find appropriate amount of text on chalkboard then capture

Problem Statement

- Most of compulsary education classes use chalkboard
- Students are sometimes distracted when they are copying what's written on
- Instructors are also distracted because they have to wait for some students who takes notes of the chalkboard

Solution Overview

Usefulness

- Focused on educational comfort for both students and Instructors
- Instructor can use more time to courses
- Students who take notes during class will instead use their time to understand the lecture better
- Useful in where? => highschool, college, and academies etc.
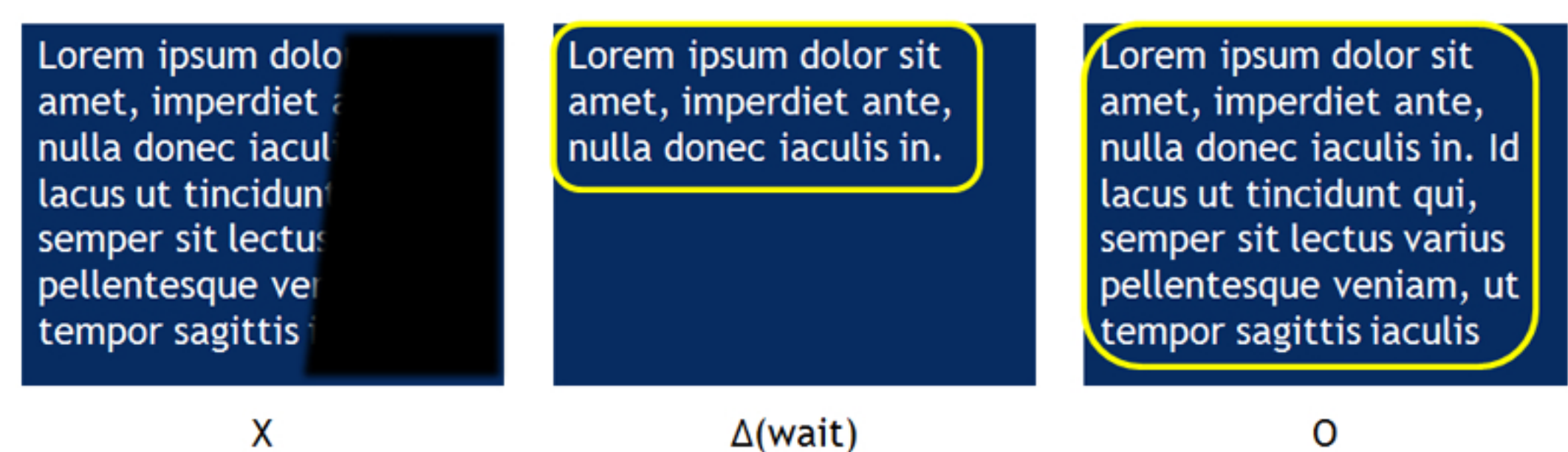
Key Functions

1. Background Extraction

Detect the instructor in each frame. Then extract only the background without instructor, by collecting nearby frames

2. Capturing Trigger

Capture the frame if only there're enough texts on chalkboard -> Local maximum algorithm

| X | Δ(wait) | O |

3. Export lecture note

PCR provides frames not only through web UI, but also as lecture note (in file).