Progressive Chalkboard Recorder

Chalkboard class material capturing & providing application

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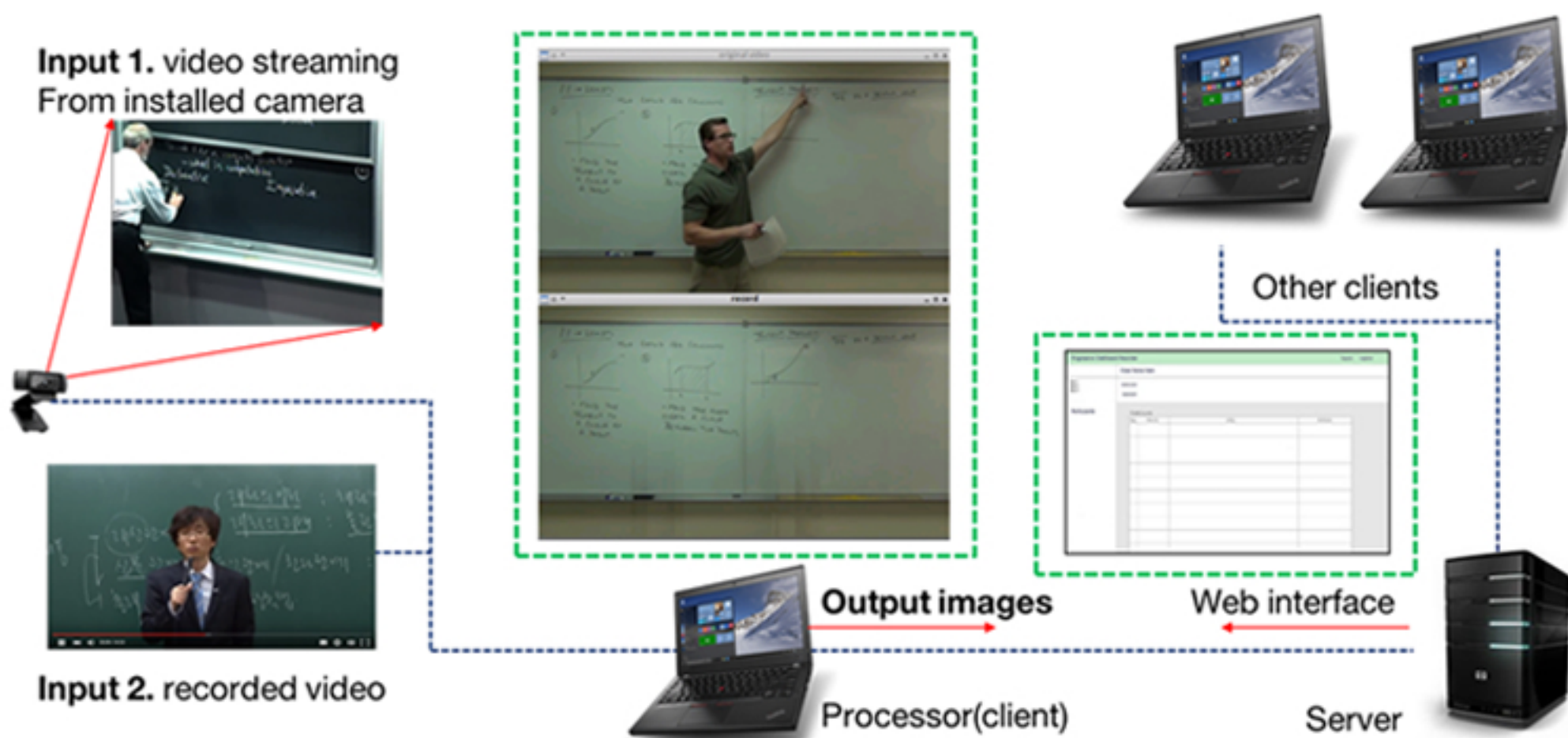Minkyu Kim, Onesphore, Yihan Kim, Byeonggyu Bak

Problem Statement

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

Solution Overview

Input 1. video streaming From installed camera

Input 2. recorded video

Other clients

Output images

Web interface

Processor(client)

Server

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
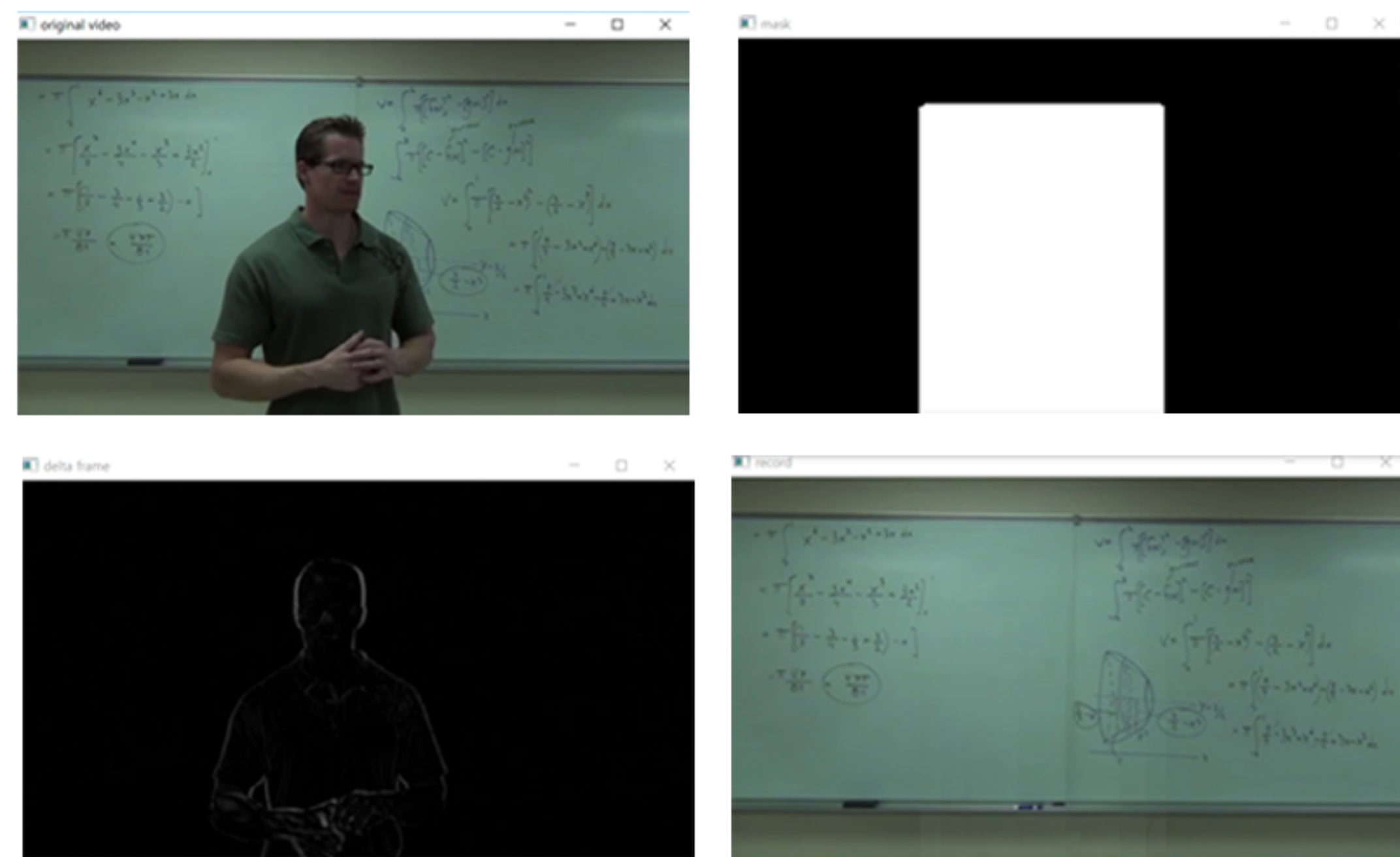
Usefulness

- Focused on educational purpose, especially comfortness
- Instructor can use more time to courses
- Students who take notes during class will instead use their time to listen and understand the lecture better
- Useful in where? -> highschool, college, and academies etc.
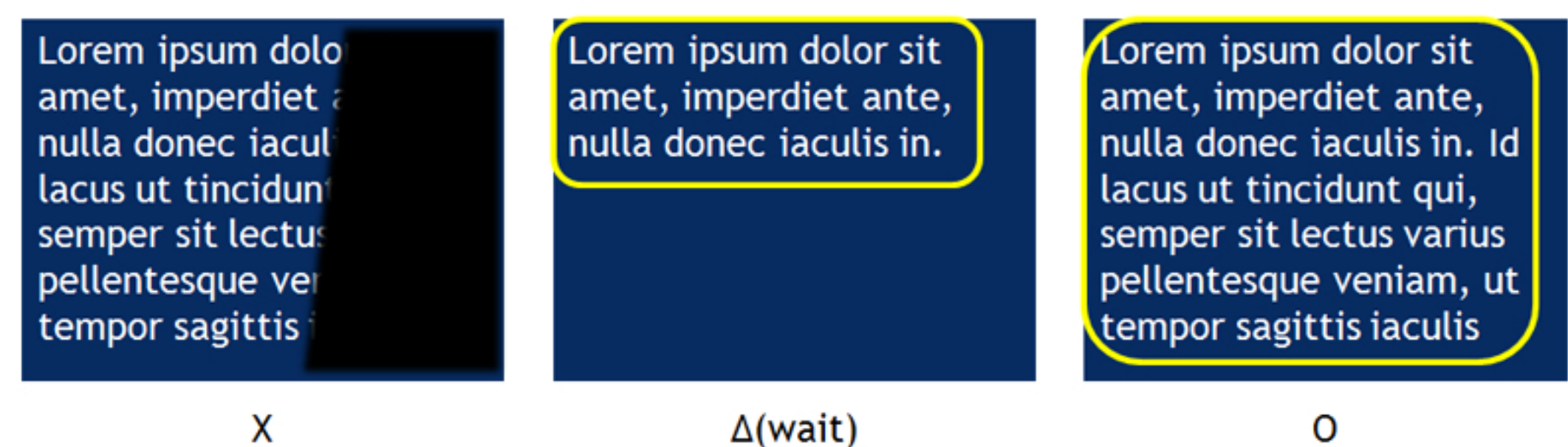
Key Functions

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).