Novel Foreground and Background Separation Based Multi-level Coding Framework for Indoor Surveillance Video

Yiang Meng[*], Haibin Yin[*+], Hongkui Wang[*+], Xiaofeng Huang[*] and Yu Lu[*]

[*]Hangzhou Dianzi University
No.1158, NO.2 Street
Hangzhou, 310018, China
212080153@hdu.edu.cn

[+]Lishui Research Institute
of Hangzhou Dianzi University
Lishui, 32300, China
yhb@hdu.edu.cn

Summary

Motivation

The background of indoor surveillance video is static and the foregrounds especially human bodies change drastically.

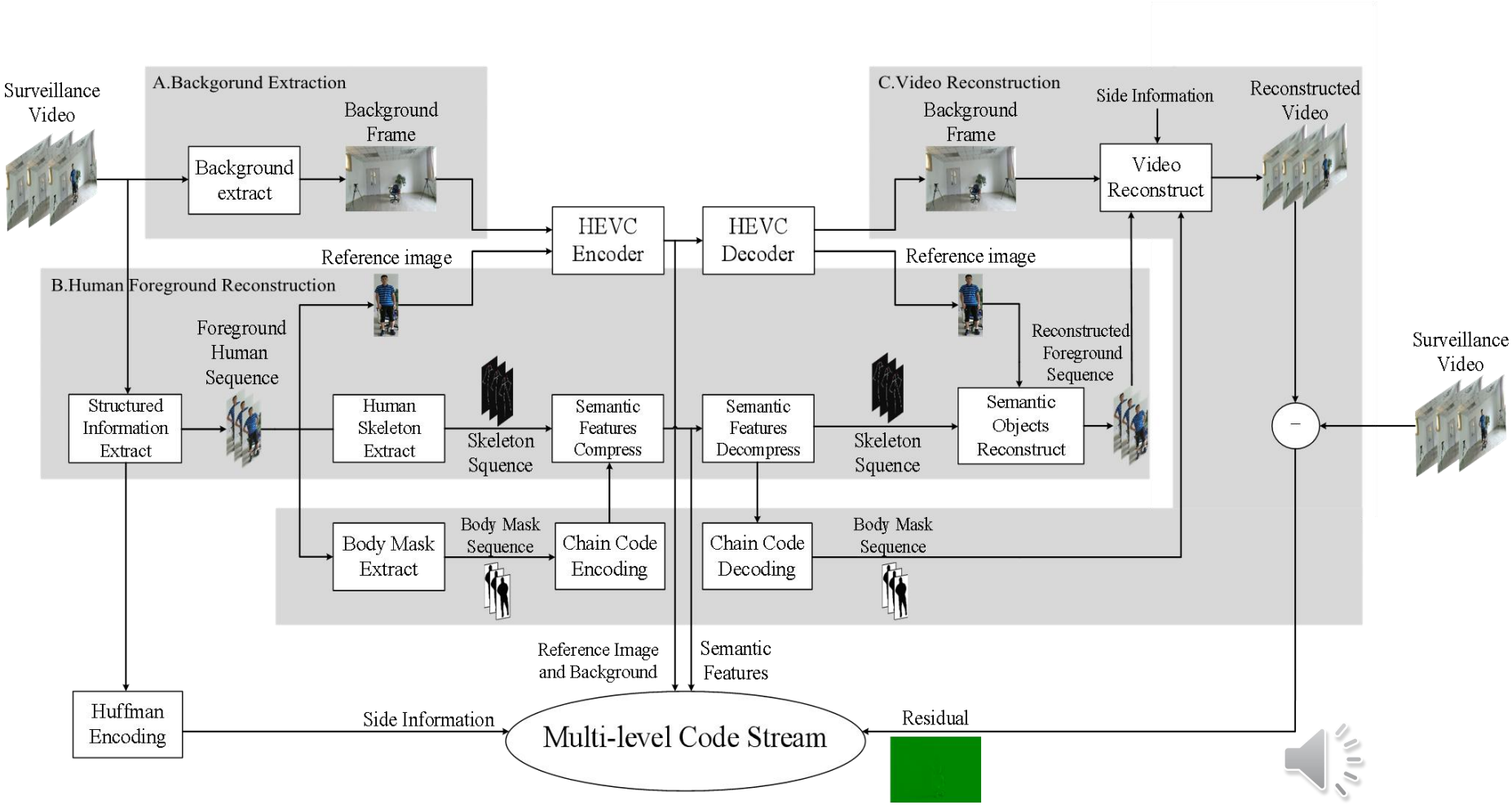
Designing a corresponding video compression algorithm may bring more considerable compression efficiency.

Proposed Method

In our framework, the background is extracted and shared between frames. The foreground humans are extracted and represented with compact features, which are used to reconstruct the foreground humans using a conditional generation network.

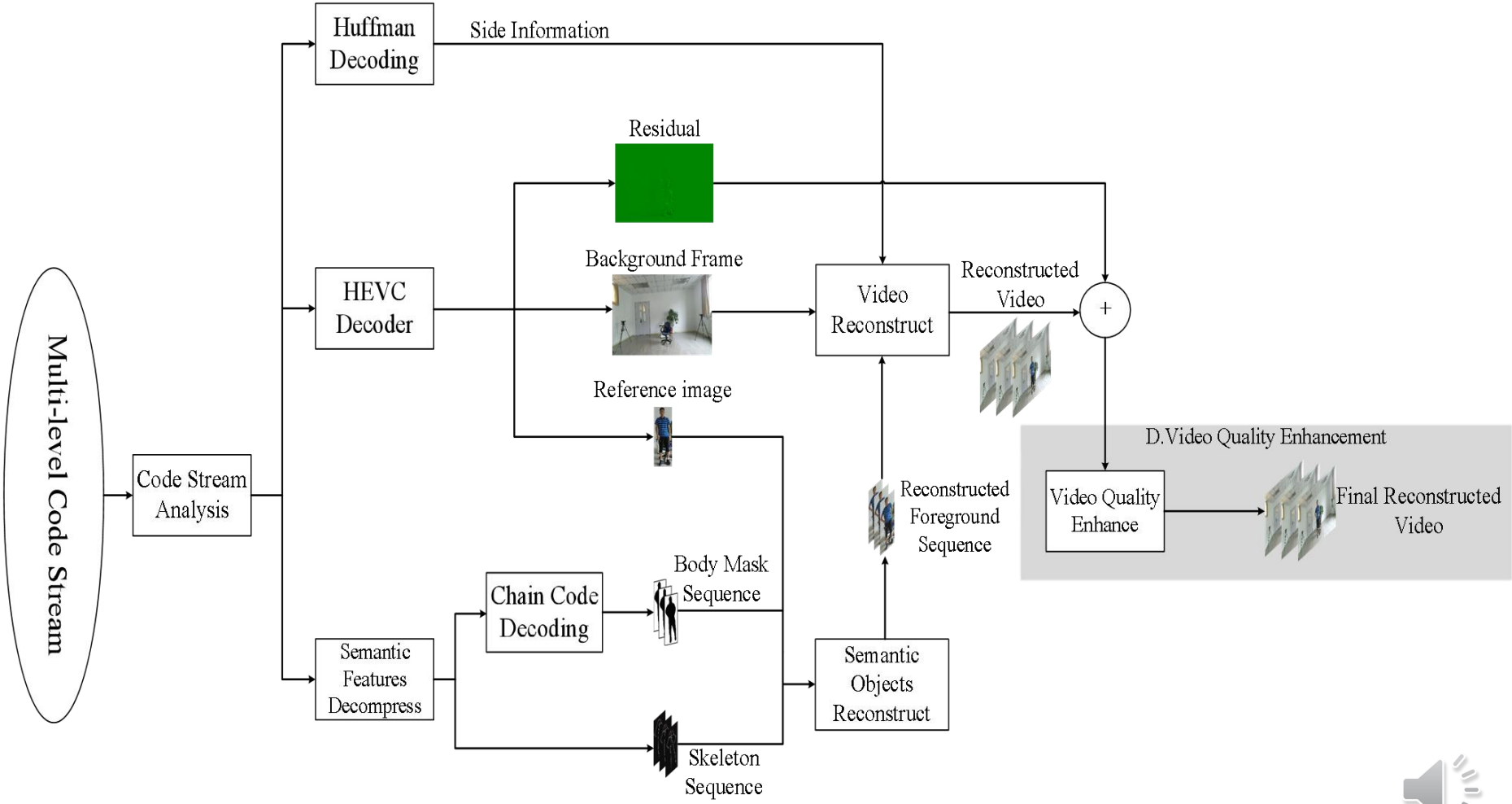
Proposed Method

Encoder



Proposed Method

Decoder



Experiment

Anchor: HM16.20

Experiment Settings for anchor:

1. Using code rate control for comparsion

2. low-delay coding structure

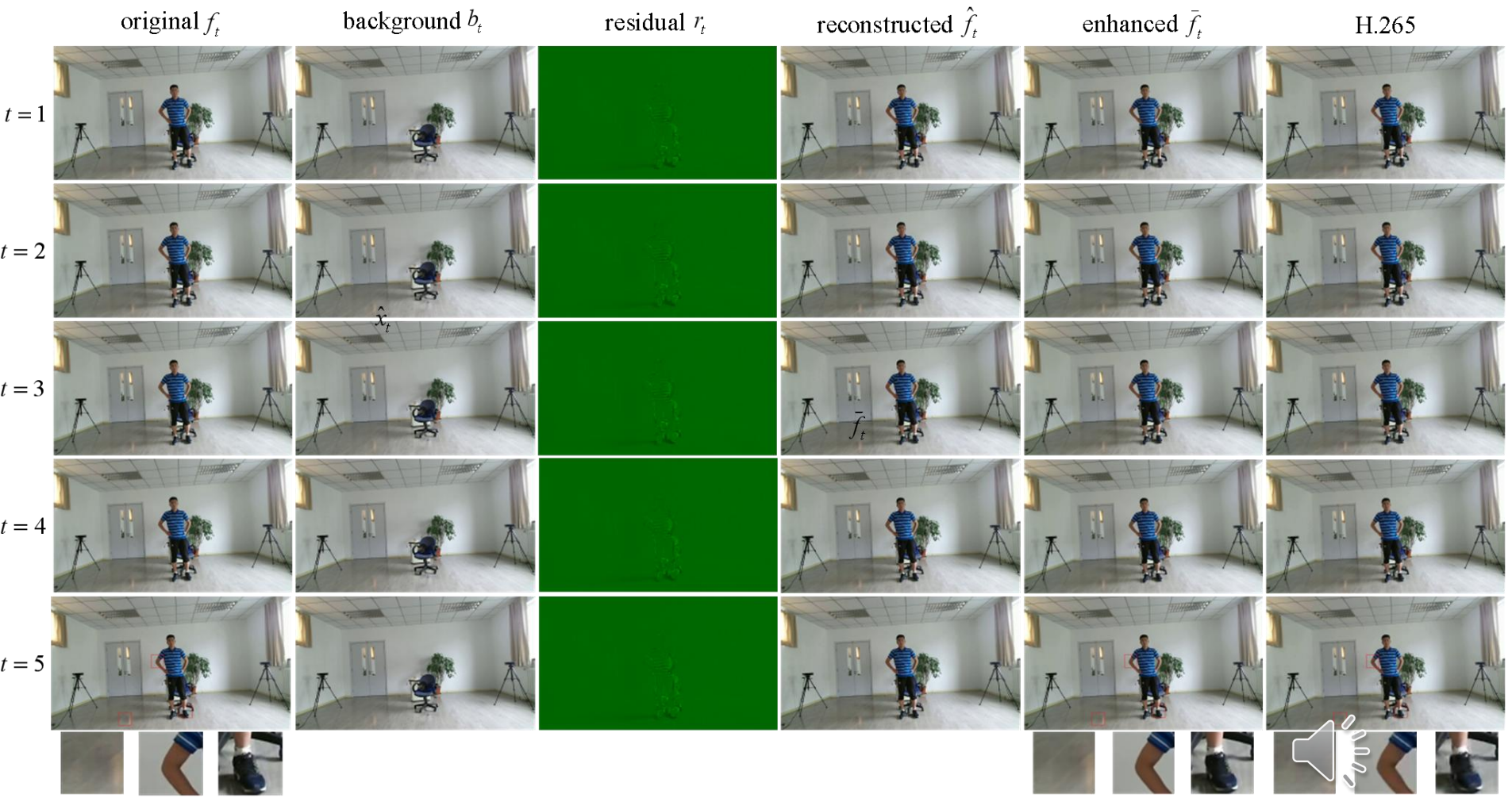
Experiment Settings for our framework:

1. QP for residual are 32, 30, 28, 26, 24, 22

2. HM encoder uses low-delay coding structure

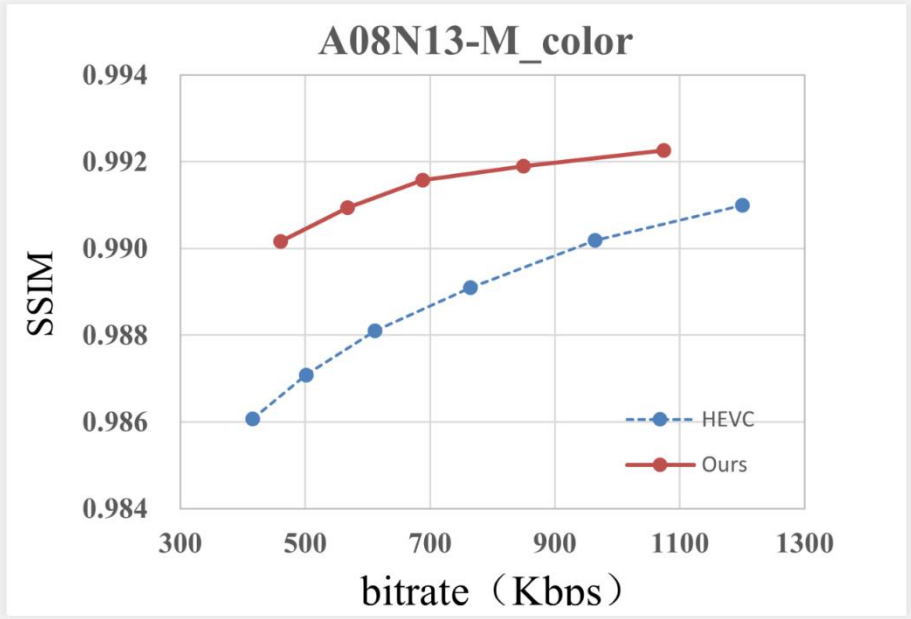
Experiment

Qualitatively Results



Experiment

Quantitatively Results



Thanks !