CS5245 Vision and Graphics for Special Effects

Project Proposal

Title
Super Star

Group Members
Tan Kok Chuen, Roger
Li Hao
Song Zhiyuan

The Story Summary
In this story, a badminton player duplicate himself into two halves and played together to compete with other players.

Special Effect
Dynamic object replacement in a continuous dynamic scene.

Input
A video sequence taken in the Multi Purpose Sports Hall. The camera is fixed at the back corner of the badminton field, and two players (Roger and Song Zhiyuan) are playing badminton against another guy (Dong Feng).

Another video sequence of Roger playing badminton. He tries to imitate the action of Song Zhiyuan's in the first video sequence.

Output
A composed video that Song Zhiyuan in the first video sequence is replaced by Roger in the second video sequence.

Method
1. The motion of the replaced person in the first video sequence is tracked and replaced with the corresponding background.
2. The person in the second video sequence is tracked and distilled from the frames.

3. The position of the racquet is tracked in both video frames so that the person in step two can be put into the right position in the video from step one.

4. The moving badminton ball is tracked and replaced in some frames to guarantee that the whole scene seems seamless.

Story Board

(see Appendix 1)

Roger is a badminton player in Team NUS. But one day he meet with a competitor named Dong Feng.

Dong Feng is so strong that Roger seems to have no chance to win.

Roger got angry. He duplicates himself into two.

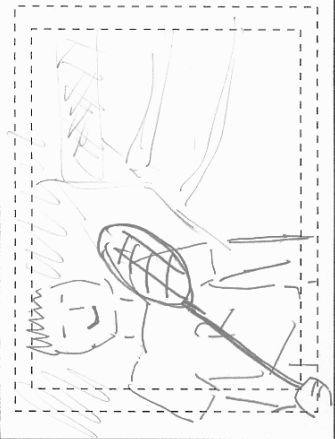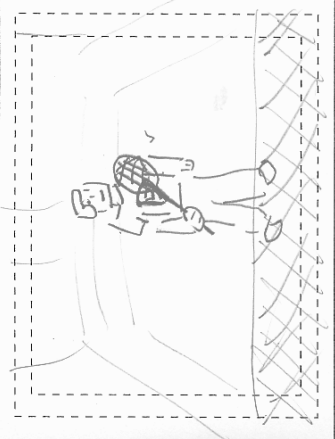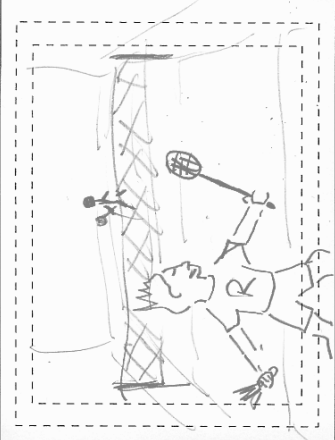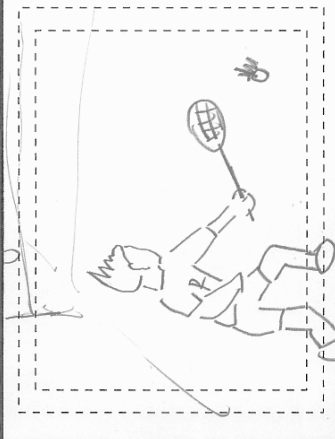Dong Feng cannot defeat two Rogers. Roger wins finally.
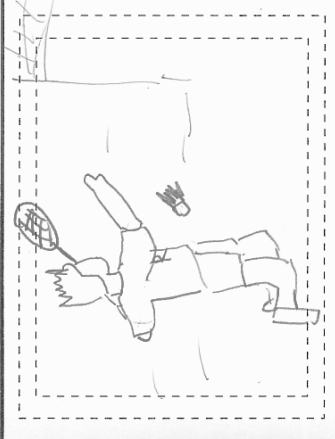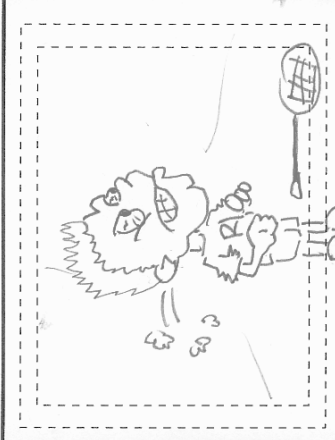
Task Breakdown

|	Tan Kok Chuen, Roger	Li Hao	Song Zhiyuan
Directing			√
Shooting video		√	
Acting	√		√
Video editing	√		
Motion tracking	√	√	√
Computer graphics	√	√	√
Image registration	√	√	√
Digital composition	√	√	√

Schedule

| Februray 10	Finalize the story board, shooting scenes, special effect and related techniques. Finish proposal.
February 15	Finish shooting the video.
February 28	Finish segmenting the required object in all video sequences.
March 8	Project progress report.
March 27	The demo version of output video.
March 29	Submit Project progress update.
April 3	Increasing the quality of output video.
April 5	Finalized Version of video out.
April 12	Project presentation

Appendix 1

Scene: # 1   Panel: 1 : Intro   Transition type:

Roger enters with swirk smile. Camera pans to the other side of the net through the court.

Scene: # 1   Panel: 2   Transition type:

Dong feng enters with a friendly smile.

Scene: # 1   Panel: 3   Transition type:

Camera flys back to behind Roger. Speed ↑ to 3X. Roger makes arrogant stances before hitting ball.

Scene: # 2 : Roger Loses   Panel: 1   Transition type:

Roger loses & fails to get the ball.

Scene: # 2   Panel: 2   Transition type:

Camera Scene cuts to just quick shots of Roger hitting but ball zooming past him.

Scene: # ?   Panel: 3   Transition type:

Roger becomes angry at losing.
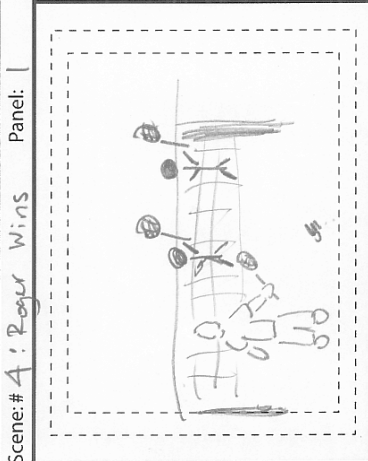
Scene:# 3: Duplication Panel: 1
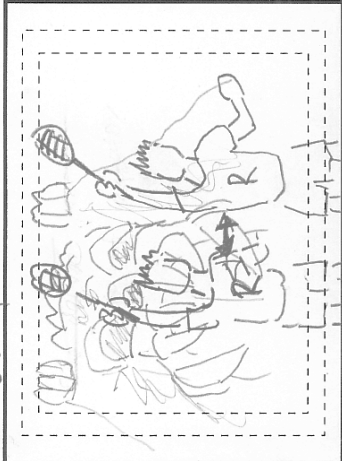
By the Power of Greyskull! Roger has the Power 9 & he duplicates himself into 2.

Scene:# 3 Panel: 2
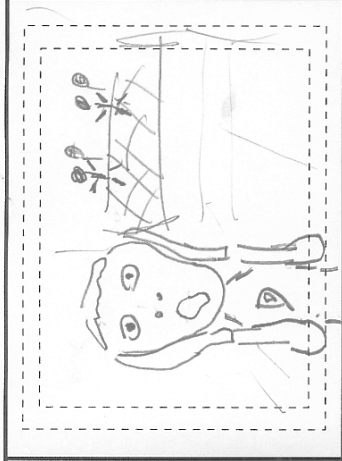
Dong Feng shock at the two Rogers but the match carries on!

Scene:# 3 Panel: 3

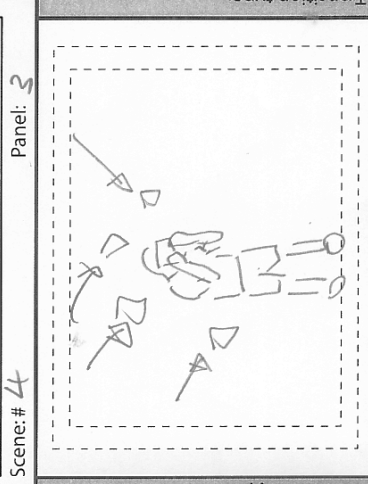Dong Feng starts to lose.

Scene:# 4: Roger Wins Panel: 1
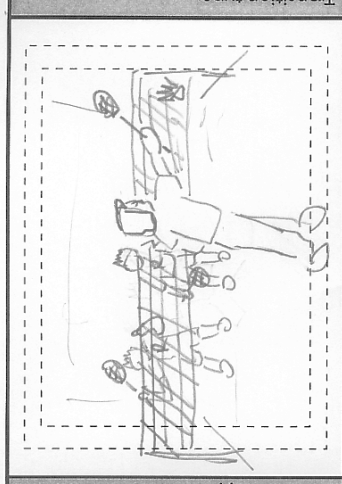
Computer arcade like presentation of the match showing Dong Feng keeps losing

Scene:# 4 Panel: 2
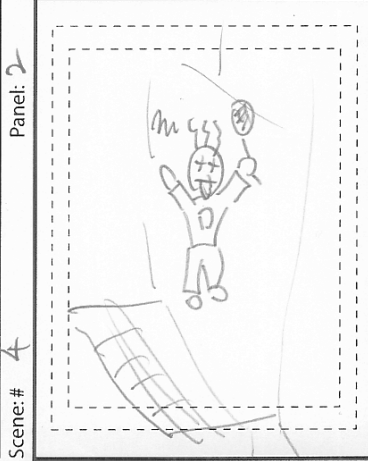
Dong Feng loses & collapses onto the ground, worn out by Roger

Scene:# 4 Panel: 3

Roger wins but gets boo off stage