The Magic Cup

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Outline

- Storyline
- Main effect
- How we did it
- The Making Of
  - Difficulties involved
  - Methods explored
  - Methods used
- Bells and Whistles

Storyline

- The main character goes into the pantry and wishes to get himself a cup of coffee. However, he couldn’t find a cup
- So, he took out his magic pen to trace an invisible cup.
- The main character pours the coffee into the invisible cup, and upon finishing his coffee, he untraces the cup.

Main Effect

- Creating an invisible cup containing liquid
- The main character interacts with the invisible cup

How we did it?

- Took real footages of liquid poured into a transparent container
- Took real footages of a person interacting with a transparent container
- Remove the container

The Making Of…

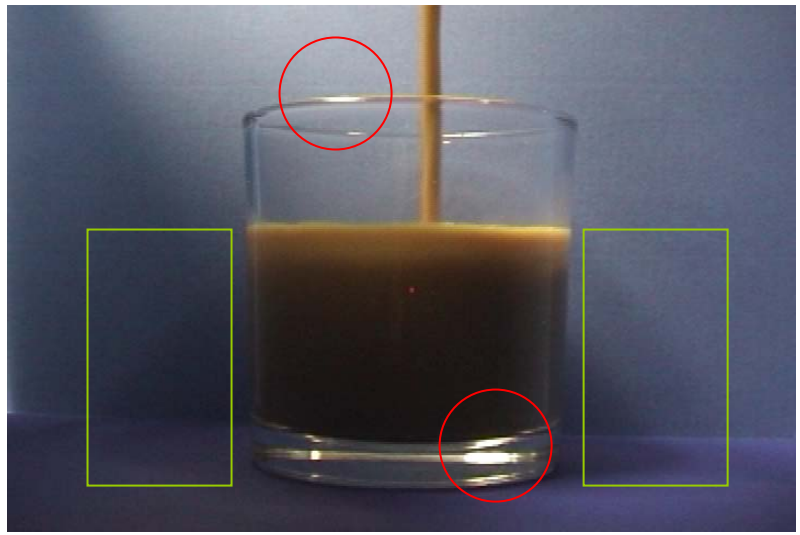
So how did we go about removing the container to achieve the desired effect?

Making of “Pouring Scene”

- Original Coffee Pouring Scene with glass cup

Problems

- Cup is highly reflective and refractive
- Causes specular highlights on rim and base of cup
- Cup's shadow on blue screen
- Lost of coffee color. Coffee appears darker



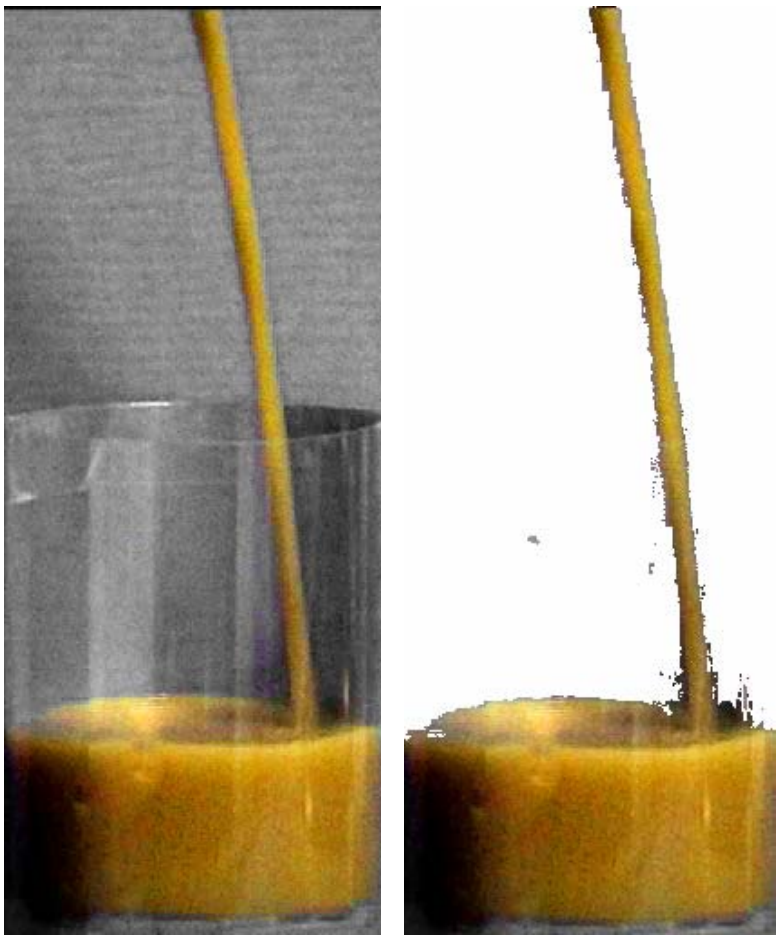
Implications

- Cannot use simple chroma keying to remove blue screen
  - Specular highlights will remain
  - Certain parts of coffee (darker areas) will become transparent
- Coffee color unrealisitc

Our New Cup

- Purpose: reduce spectral to enable easier blue screen removal
- Plastic soft drink bottle
- Taped on the back with blue paper
- Filled with blue plasticine at base
- Less refractive and reflective

Background removal with algorithm



- Noise
- Jagged edges
- Still had to do manual refining
- Rejected

Color Transfer

- Took original coffee color and transferred to the coffee pouring sequence to recover coffee color
- Lost shading, made coffee looked unrealistic
- Rejected

Keyframing + Morphing

- In the end, we manually removed the background, and reduced the specular highlights in photoshop instead
- To reduce manual work, we only perform the above on selected keyframes from the sequence
- The keyframes are morphed from one keyframe to the next in FantaMorph to produce the final sequence

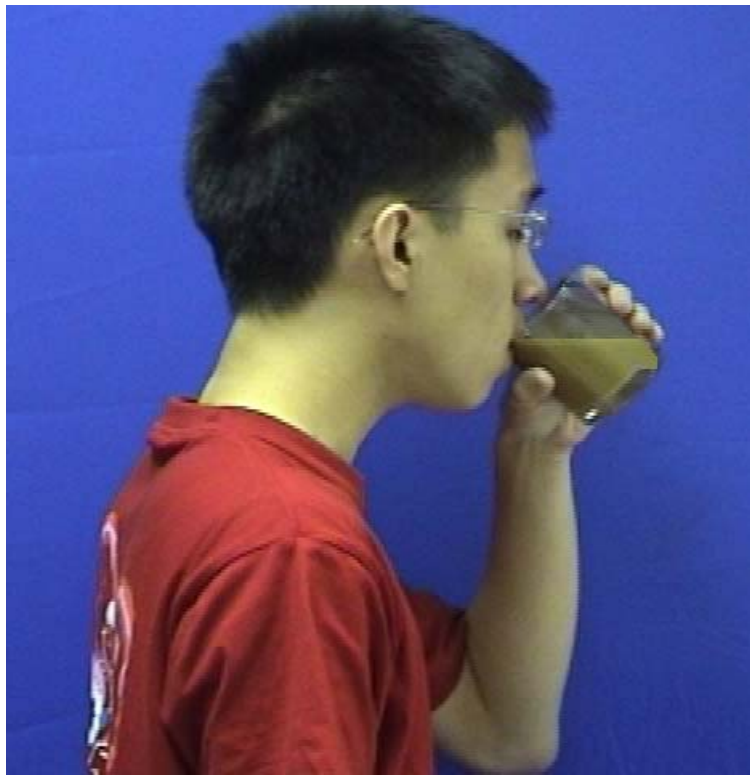
Making of “Drinking Scene”

- Taken in front of blue screen

Problems

- Specular highlight stripe
- Palm occluded by cup, need to recover palm

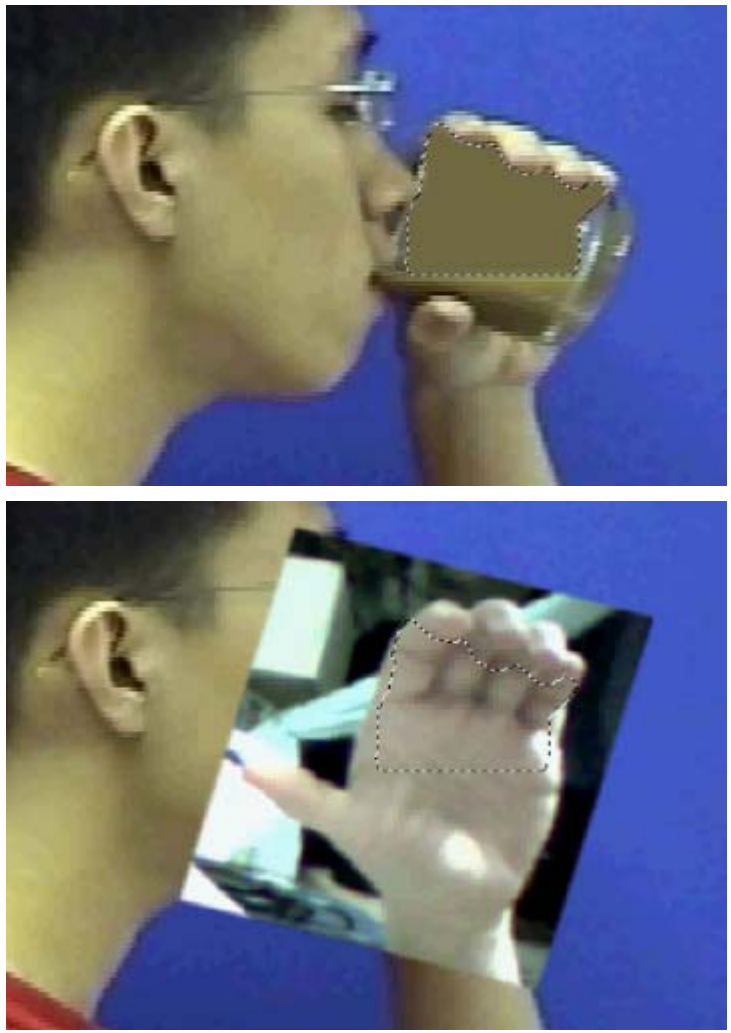
Remove Specular Highlights



- Used an algorithm to remove specular highlight stripe, and interpolate with coffee color

Recovering the palm

- Mark out the region of interest
- From an image of the palm, we cut out the desired area
- Paste it over the occluded palm



Recovering the palm

Bells and Whistles

- Creating the tracing and untracing of the cup with particle effect

How it was done

- Area occluded by cup is replaced with the clean plate of the background
- Particle effect added in using Macromedia Flash

Thank you for your attention!

Q & A