# Automatic Image Tracking in OS X

- The Quest: project video on a dancer as she moves across the stage.

# Project Requirements

- (Automatically) ensure that the center of a projected image always lands on a specific section of a dancer.

- Program and adjust in the field

- Budget ~ $0

# Subsystems

- Video Capture

- Image recognition

- Motion Control

- Feedback

# Video Capture

- Originally wanted to start from scratch & learn Carbon, but learning curve was steep.

- Nothing fairly similar for Mac on market

- Found videoscript.com

# VideoScript

- Free(!) program used to manipulate live and recorded video

- Captures live video via FireWire

- Supports AppleScript
  Solution - VideoScript to control motion
  VideoScript Demo Programs

# Introduction to Motion Control

- Stepper Motor Control - 1.8 deg/ 200 steps/revolution.

- 'Little-Step-U' controller $50 on eBay.

- Controlled by simple serial commands

# Talking to the outside world

- VideoScript can't directly control computer's I/O.

- Solution: KeySpan USB->Serial converter ($40)

- Solution: AppleScriptable terminal program

# VideoScript Code

- Code example here:

# Demonstration of L/R Panning

- Controller is crude & jumpy

- Tracks brightest object

- Solution: IR pass and IR block filters

# Resources

- www.videoscript.com

- http://kulesh-software.com/Software/PortTerm/

- http://tla.co.nz/lit_step.html

- eBay: Rotary Table

- eBay: 'Z-Axis'