Models of Computation in Hollywood

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Background

- I was a student of Professor Lee from 1999-2001
- I worked on the SDF, DT, GR domains of Ptolemy II
- I am now a special effects engineer in Hollywood
- This talk will be about how my education and use of MOCs in Ptolemy II has better prepared me for my current work
Models of Computation in Action

- SDF / DT for motion processing
- CT for dynamic animation
- GR scene graphs for geometric hierarchy

Motion and Animation

\[ p = \{x, y, \theta_1, \theta_2, \theta_3, \ldots\} \]
SDF motion signal processing

GR domain scene graphs

presented in Ptolemy MiniConference 2001
Dancing Robot Scene Graph

CT-like dynamics
Geometry Dataflow Processing (Houdini)

Particle Systems Dataflow (Houdini)
**Mixed MOCs example**

SDF (human motion) +
GR (scene hierarchy) +
SOPs (geometry) +
POPs (water particles) +
CT (dynamics)

**Conclusion**

- Models of Computation are useful in computer graphics and special effects
- Animation Packages like Alias/Wavefront **Maya** and Side Effects **Houdini** are components-based
- Future work ...