## MotionVis

Donovan Parks

Introduction

- Large motion capture DB's widely used in the film and video game industries

- This has created a desire to be able to search these databases for similar motions

- Bases of automated methods for synthesizing new motions from MoCap data


Project Goal

- Numerous similarity metrics have been proposed:
  - Which of these should be preferred?
  - What are their respective strengths and weaknesses?
  - How can a given metric be improved?

- Develop an environment for analyzing the structure of a motion capture DB under a given similarity metric

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Project Overview

MoCap DB → Similarity Metric → Dissimilarity Matrix → MDS → Scatterplot View

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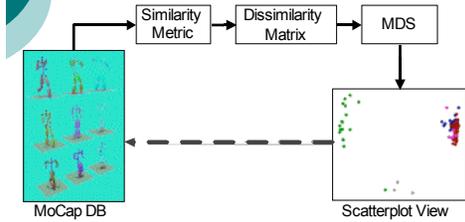
Proposed Solution

- Couple scatterplot view with a "details-on-demand" view
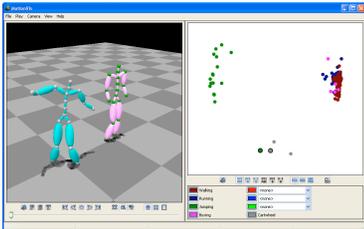
Remaining Work

- Tighter coupling between views:
  - Clicking a skeleton should highlight associated point in scatterplot
  - Hovering over a point should highlight associated row and column in dissimilarity matrix

- Select "good" colours for skeletons

- Plus the other 10 items on my to-do list

Literature

- Implemented similarity metric:
  - Chuanjun Li and B. Prabhakaran. *Indexing of motion capture data for efficient and fast similarity search*, 2006.

- Other similarity metrics:
  - Lucas Kovar and Michael Gleicher. *Automated extraction and parameterization of motions in large data sets*. ACM Trans. Graph., 23(3):559568, 2004.
  - Meinard Müller, Tido Röder, and Michael Clausen. *Efficient content-based retrieval of motion capture data*. ACM Trans. Graph., 24(3):677685, 2005.

- Related InfoVis papers:
  - Chris Roussin Rich DeJordy, Stephen P. Borgatti and Daniel S. Halgin. *Visualizing proximity data*, 2007.
  - Jonathan C. Roberts. *State of the art: coordinated and multiple views in exploratory visualization*. Proc. Conference on Coordinated and Multiple Views in Exploratory Visualization, 2007.