

☰ Cluster analysis

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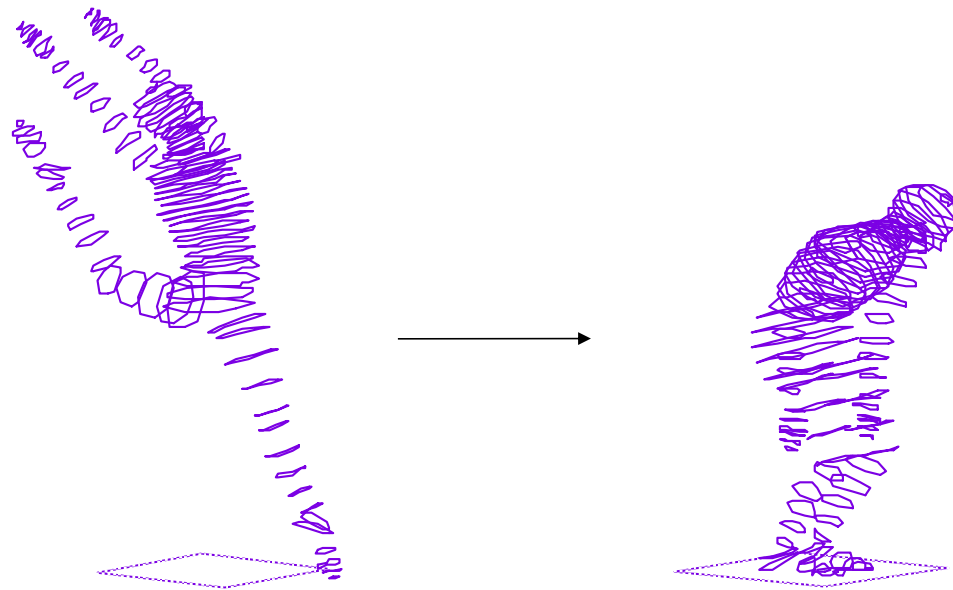
From Wikipedia, the free encyclopedia

Cluster analysis, or **clustering**, is a data analysis technique aimed at partitioning a set of objects into groups such that objects within the same group (called a **cluster**) exhibit greater [similarity](#) to one another (in some specific sense defined by the analyst) than to those in other groups (clusters). It is a main task of [exploratory data analysis](#), and a common technique for [statistical data analysis](#), used in many fields, including [pattern recognition](#), [image analysis](#), [information retrieval](#), [bioinformatics](#), [data compression](#), [computer graphics](#) and [machine learning](#).

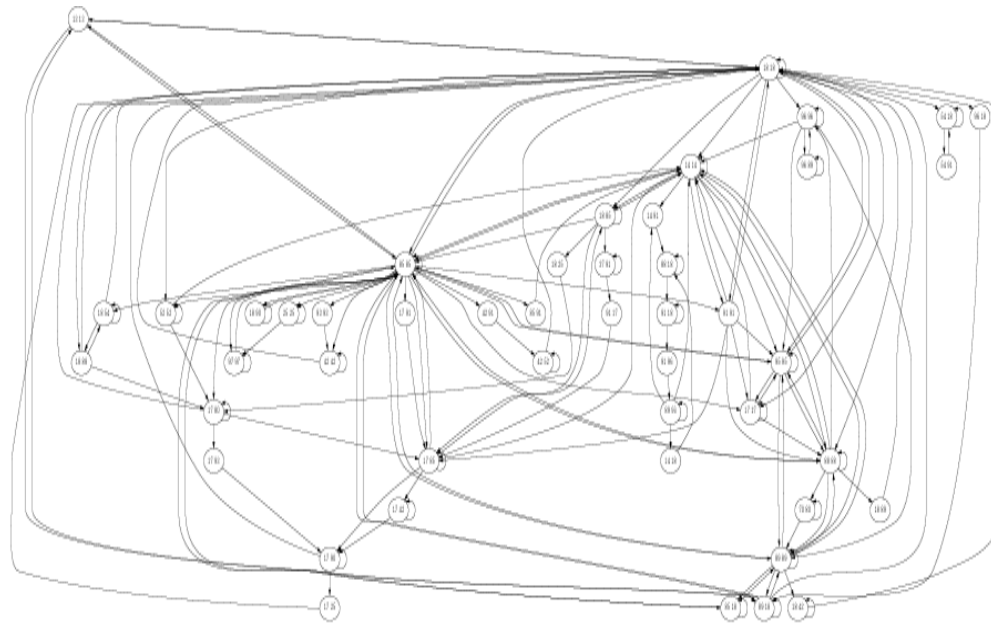
Two pieces of background:

- ❖ Interpolation (cf., CSCI 3656)
- ❖ Networks and graphs (cf., CSCI 3014 & others)

Interpolation in this context...?

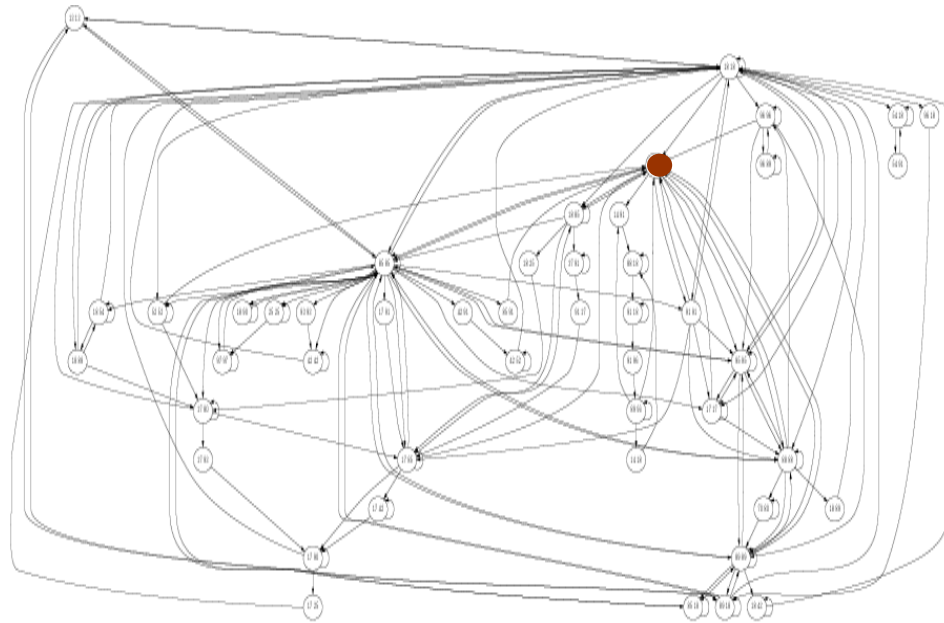
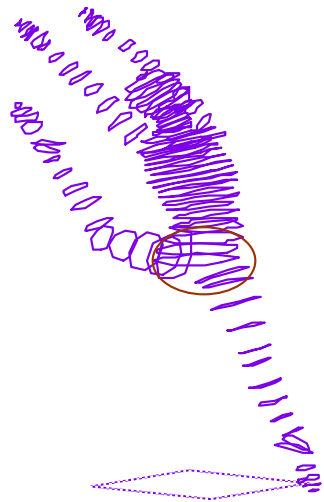


Corpus-based approach

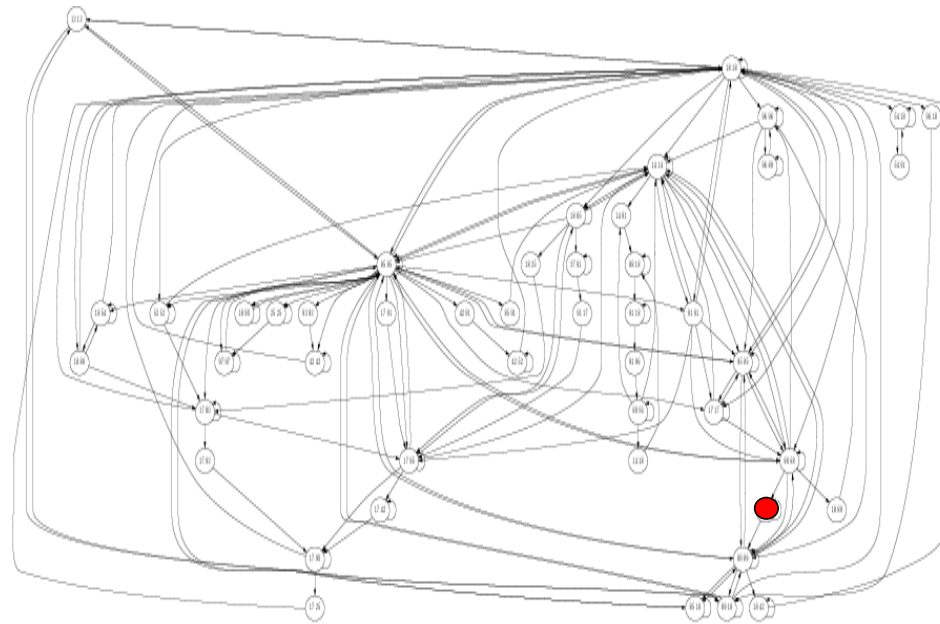
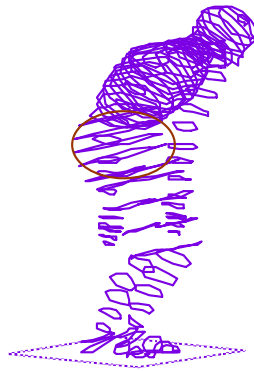


- graph captures motions of one joint
- note: specific to the genre of the corpus!

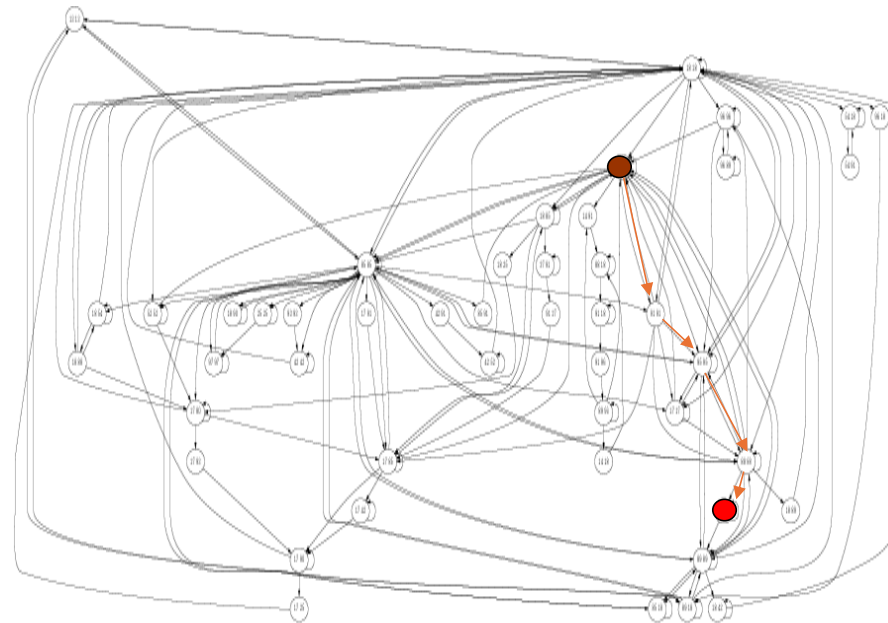
Initial state



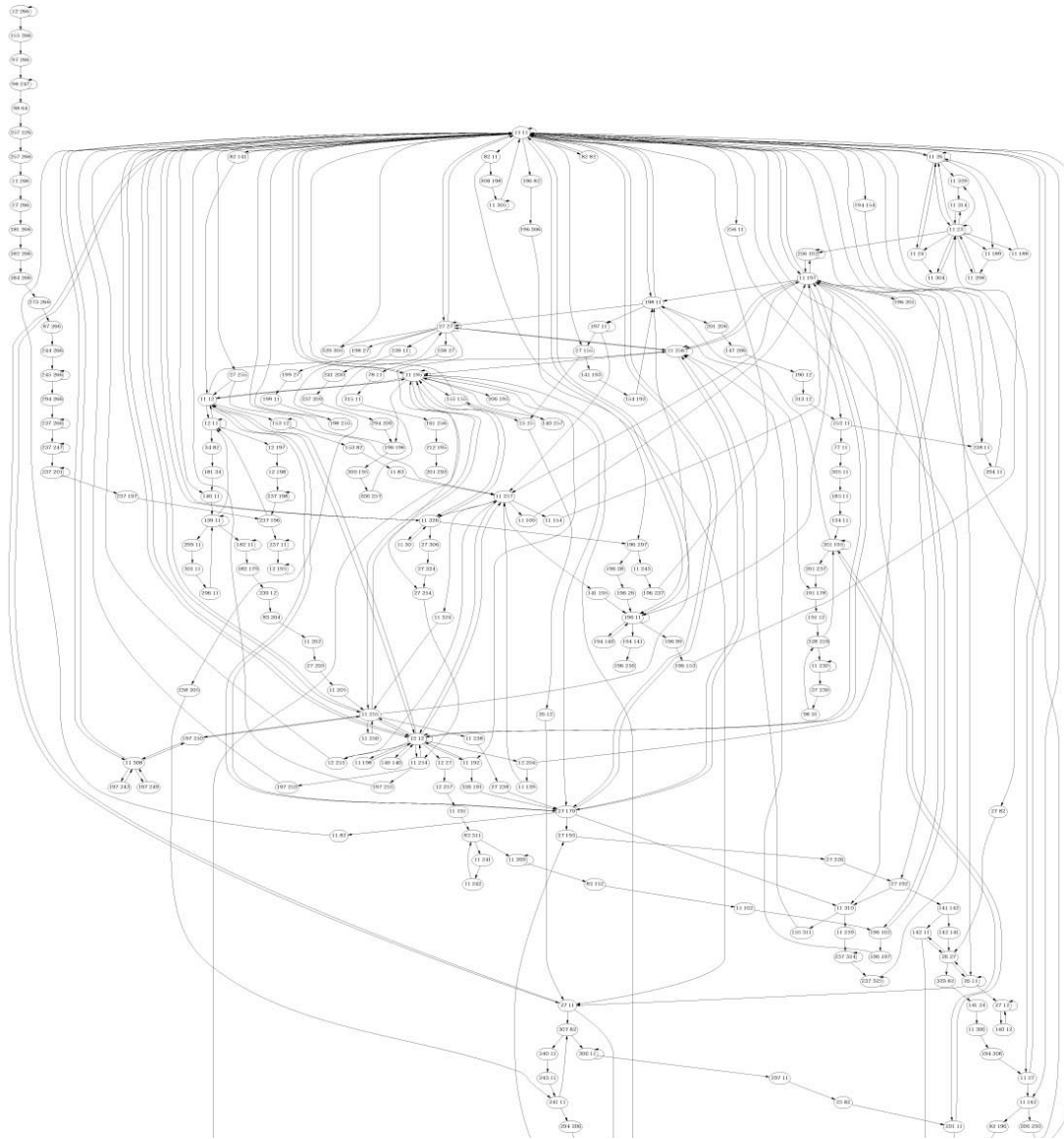
Target state



Graph search



...for 44 joints in parallel!





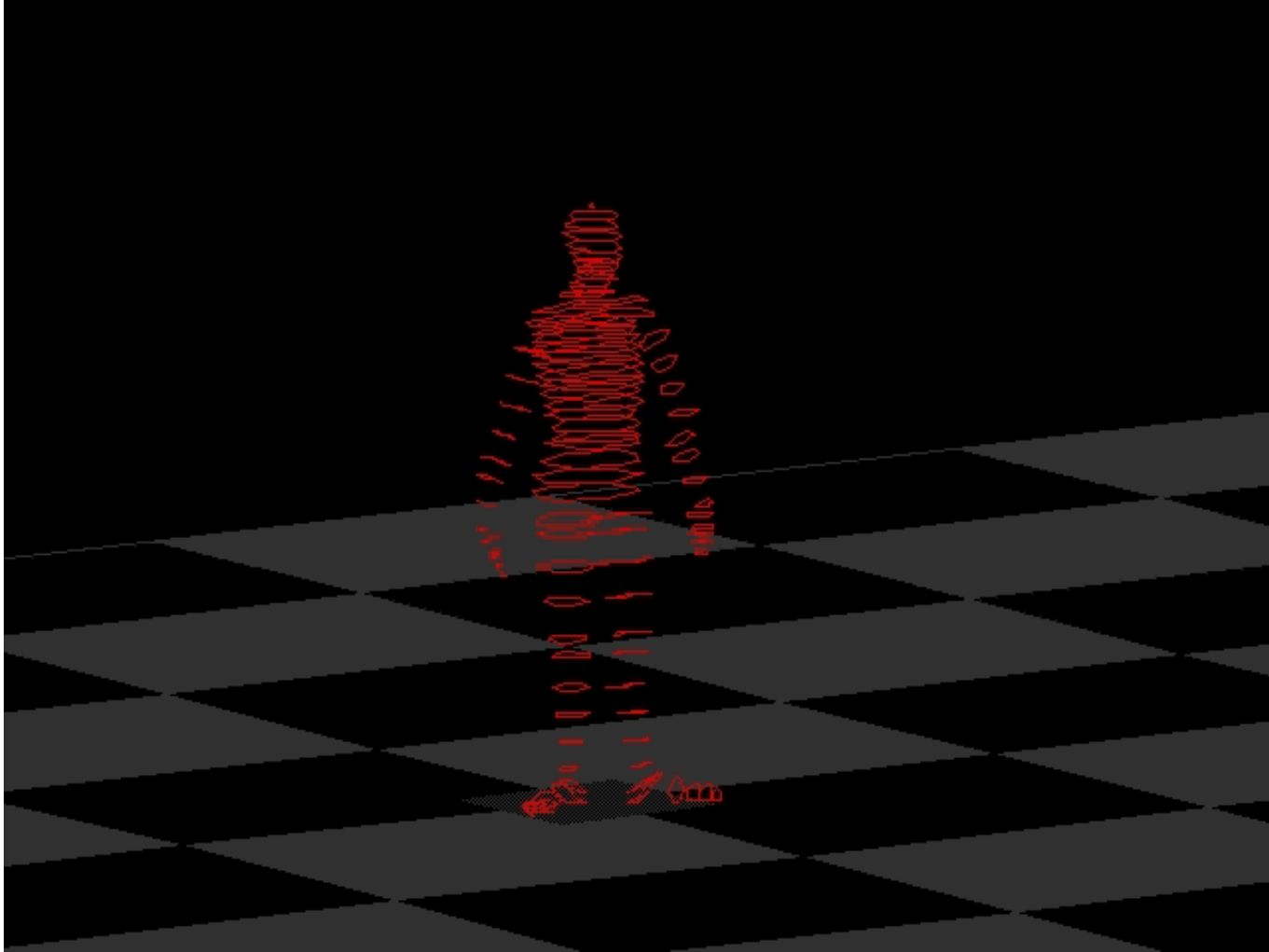
initial



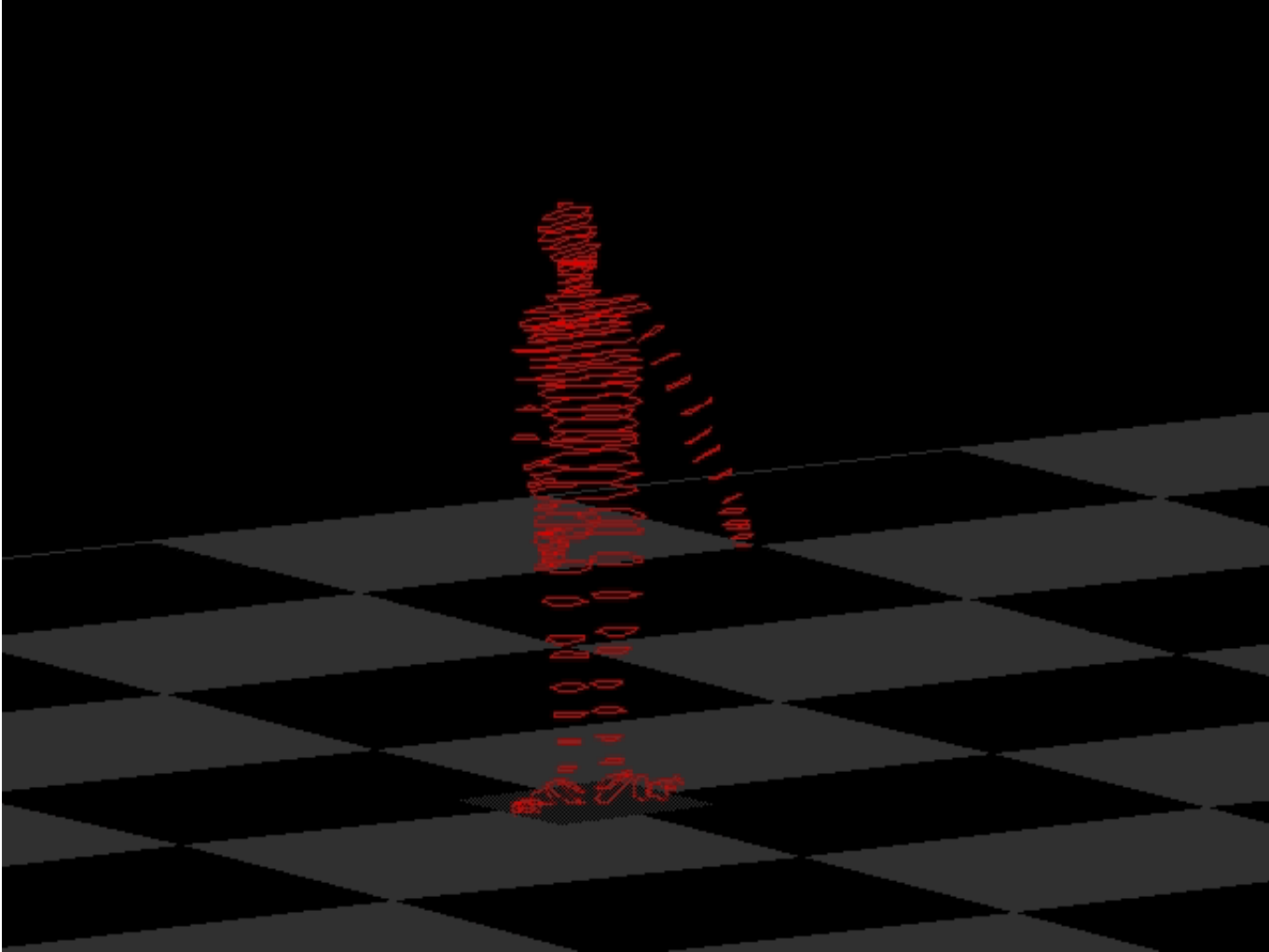
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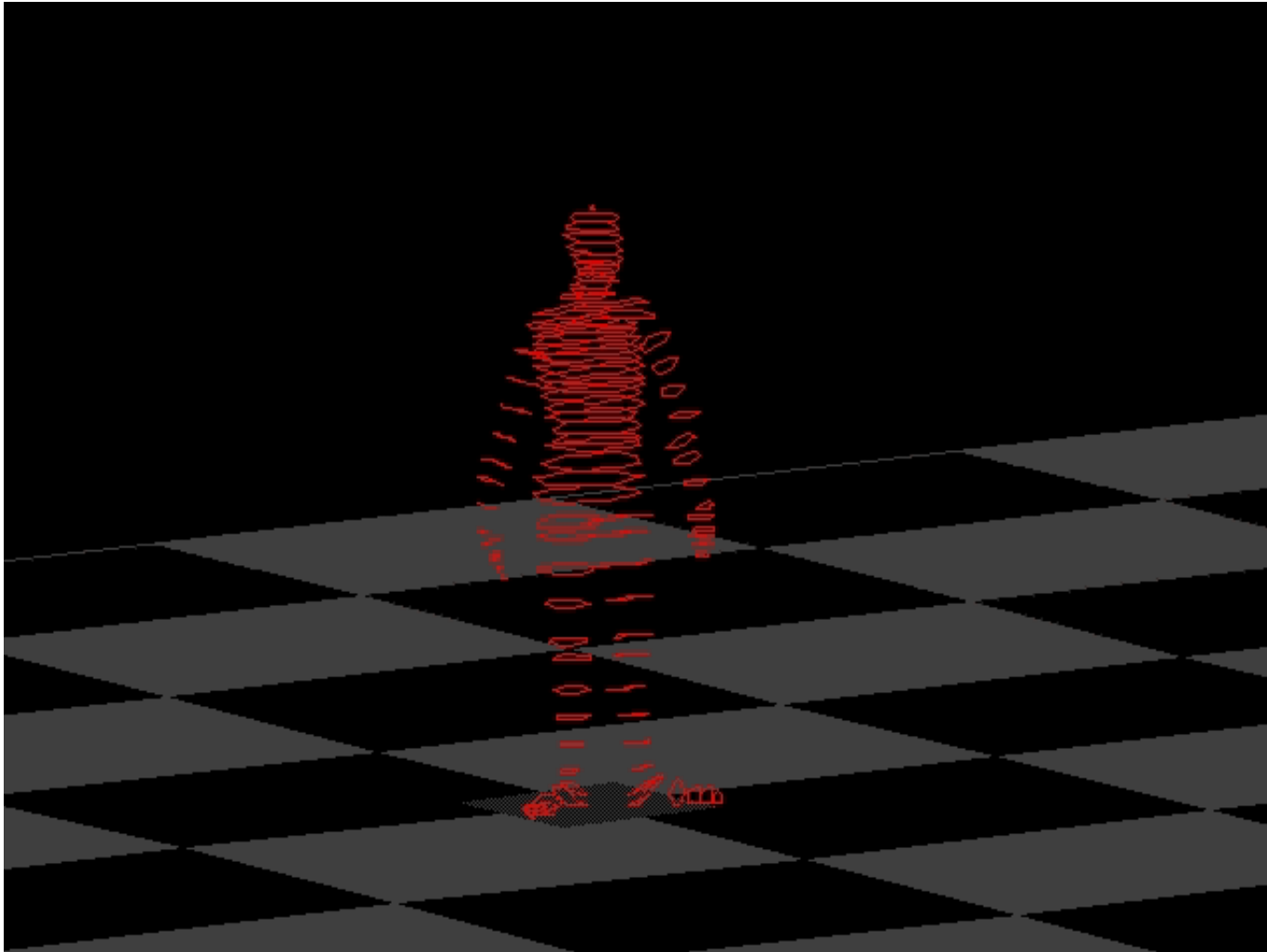
interpolation 1



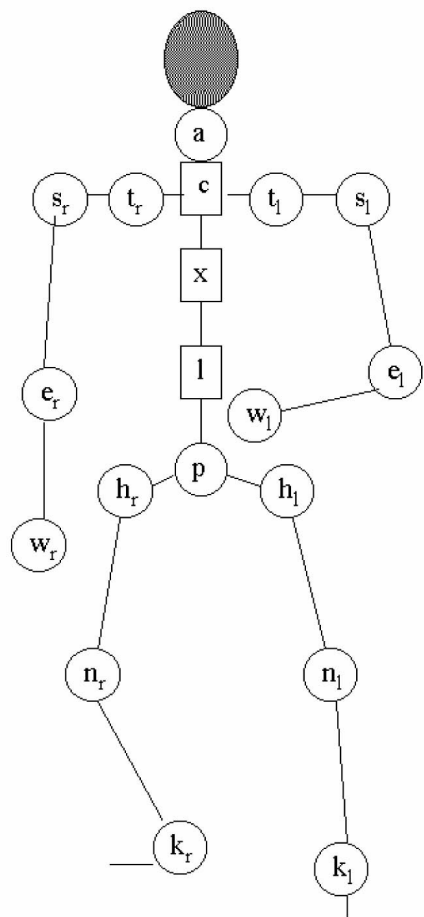
initial

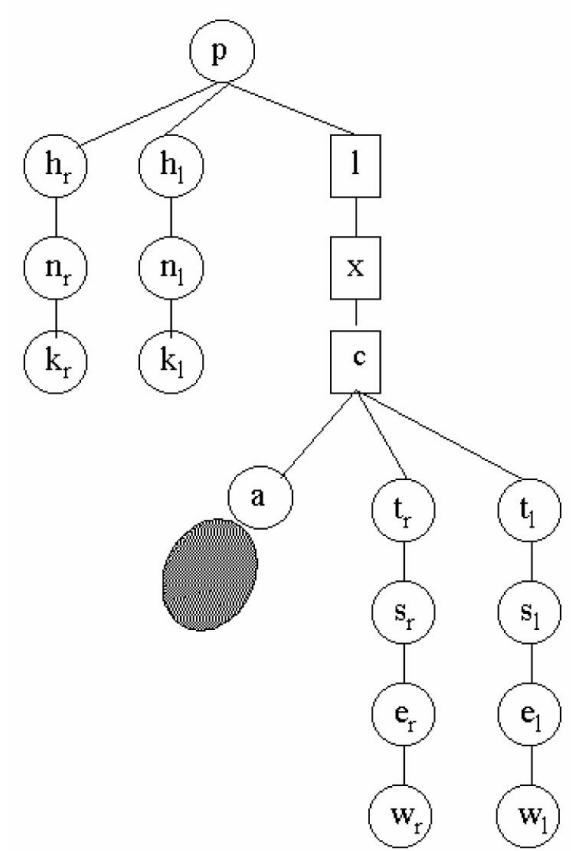
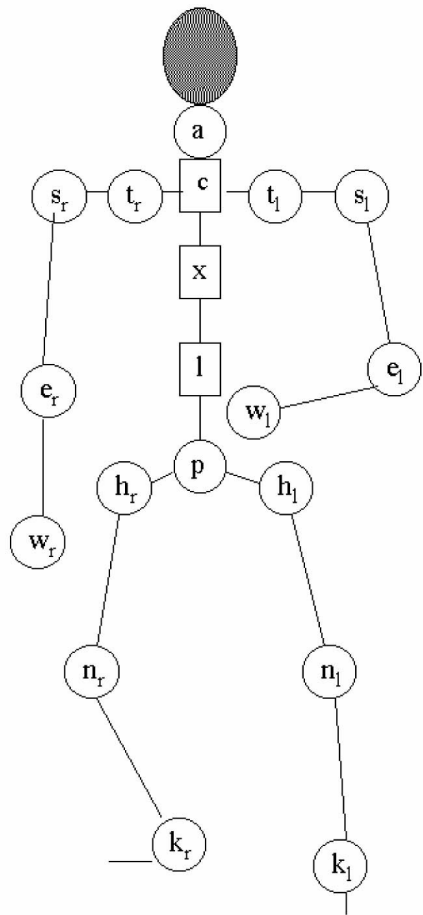


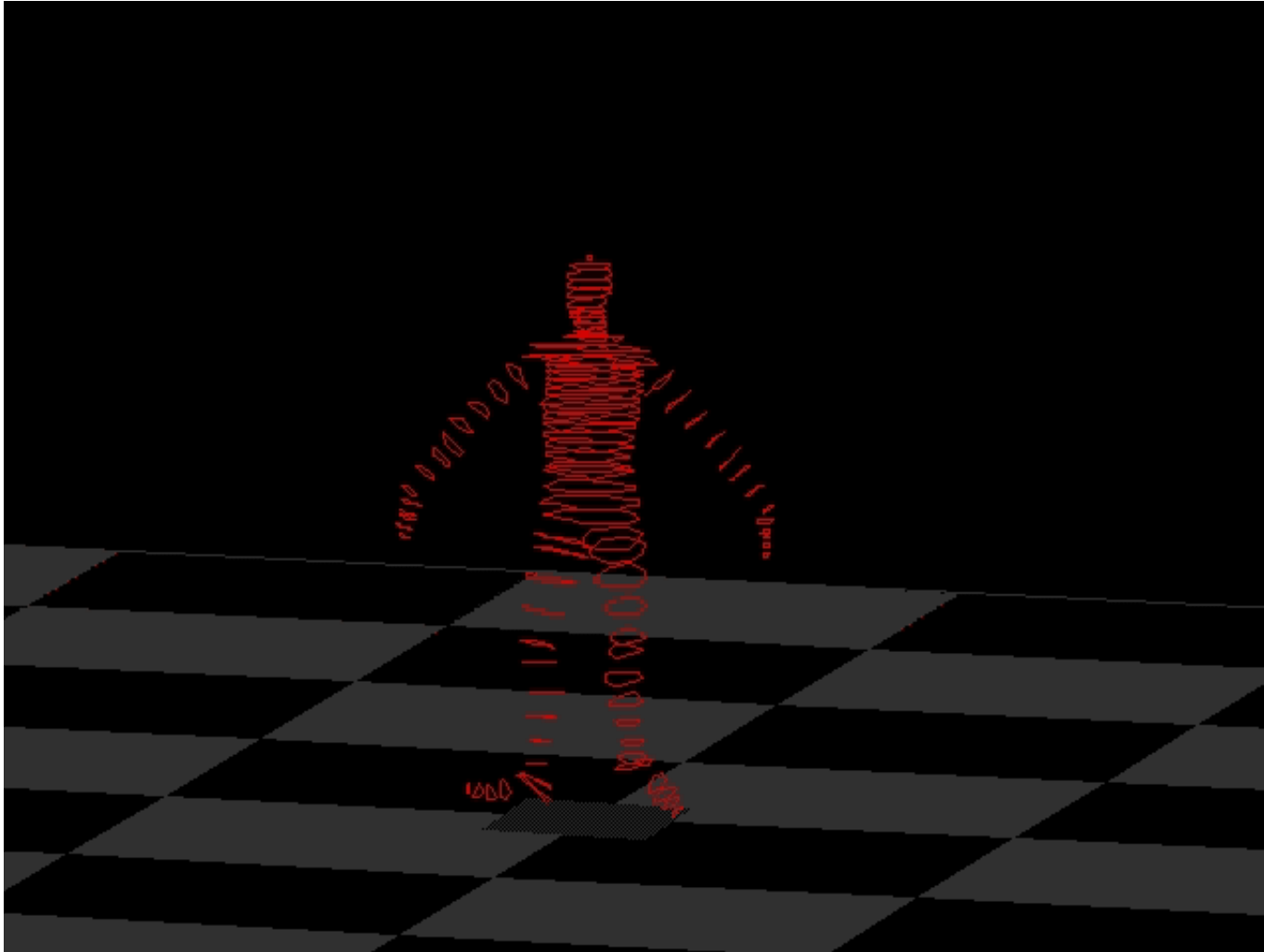
target



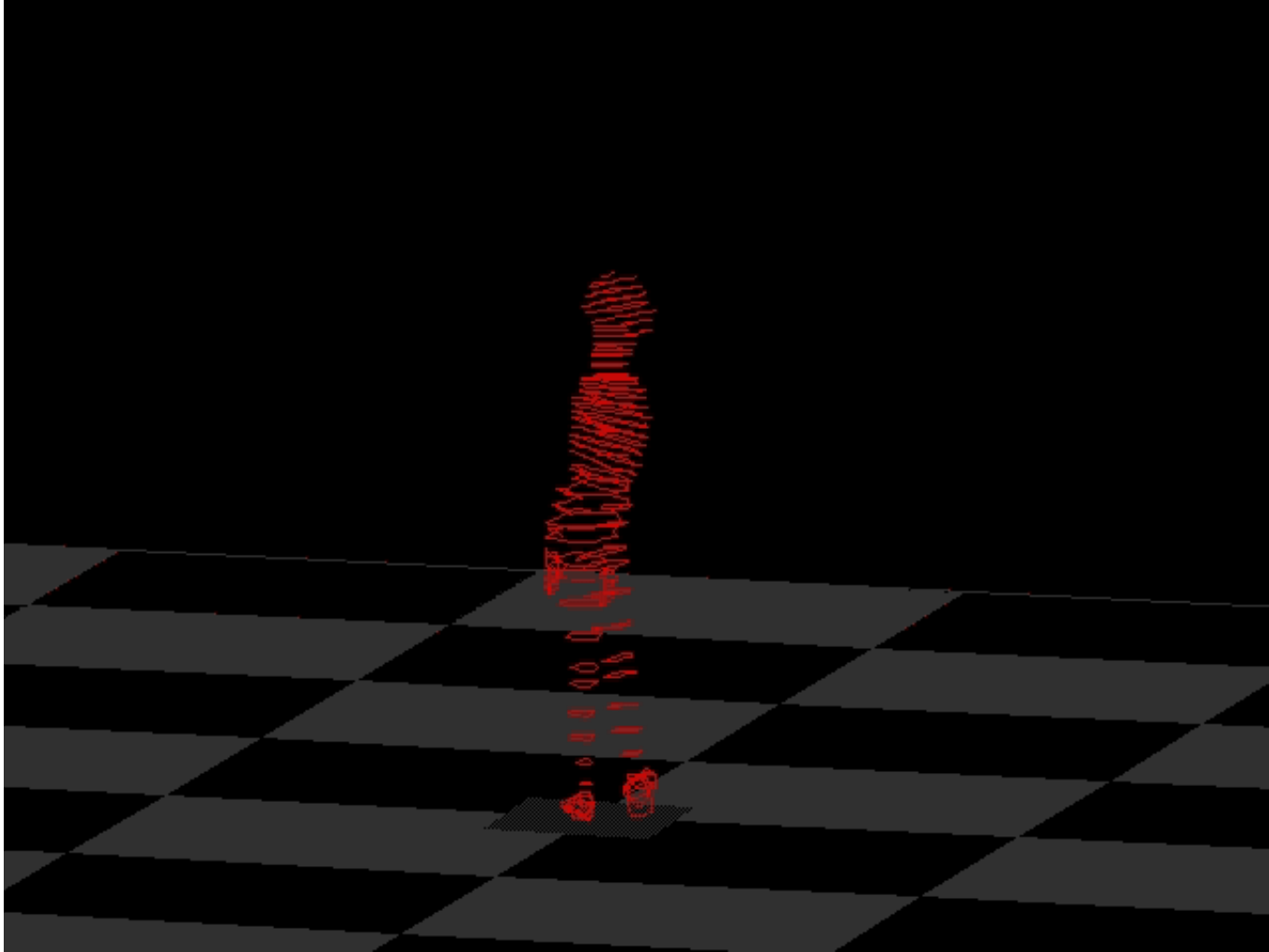
interpolation 2



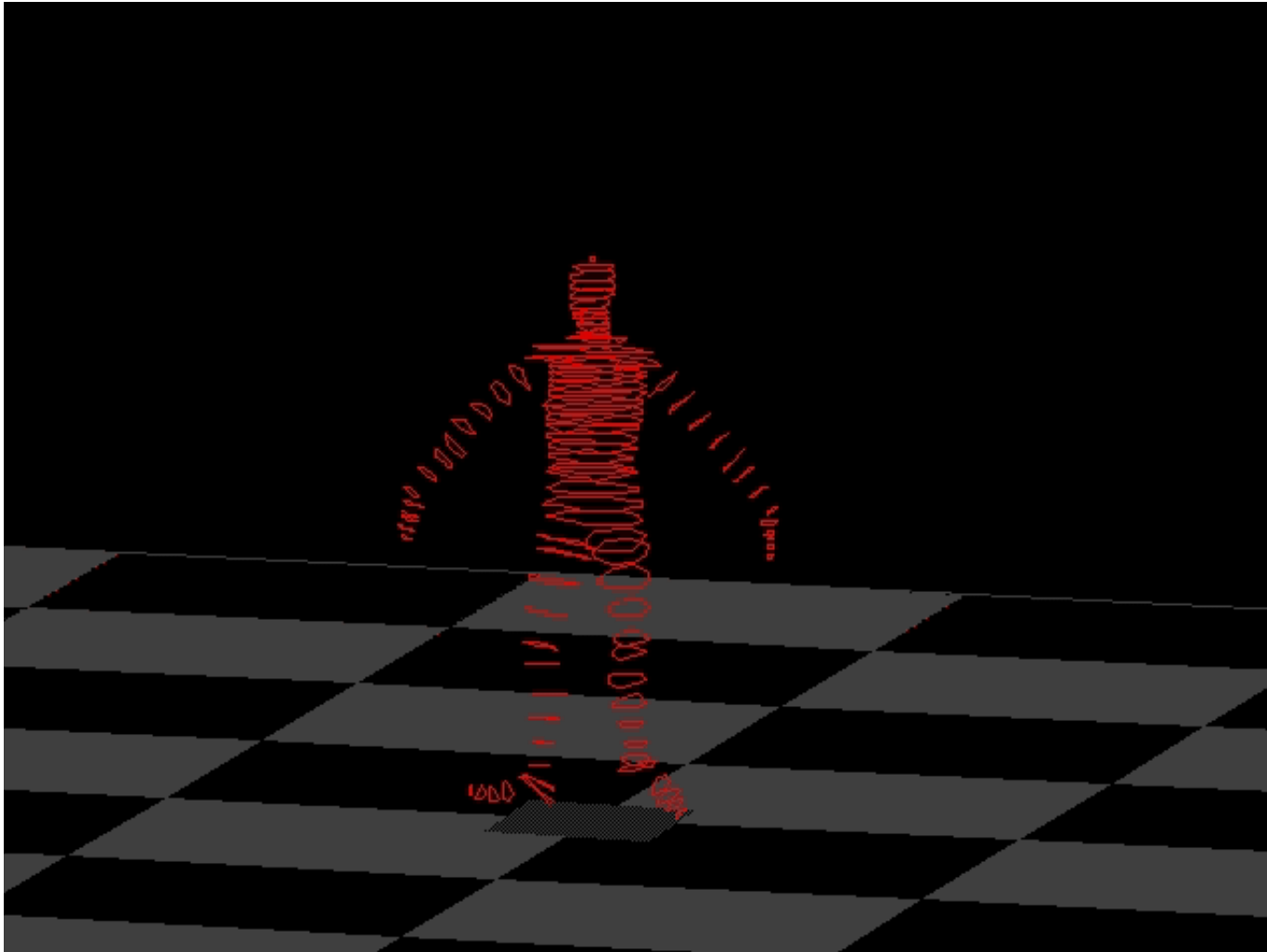




initial



target



interpolation 3