

USAGE OF PCA FOR PARAMETERIZATION IN VERTEBRAL COLUMN DYNAMIC EXAMINATIONS

Abstract

The main purpose of this thesis is to describe a method for a parametric analysis of human walk. Measurement data were taken with stereovision methods. To obtain the data, position of markers located on human body was registered. Parameterization was achieved through eigenvector and covariance matrix of position, speed and acceleration trajectory calculation for every of those markers. Prepared software allows signal filtration, trajectory visualization and necessary calculation performance. Fourier models of patients' movement were also used in the research. Evaluations, preprocessing and reconstructions 3D were executed on numerous students of the University of Valencia and results were elaborated at Warsaw University of Technology.

Key words: *stereovision, vertebral column, dynamic, eigenvalues, eigenvectors*
