Berliner Colloquium für wissenschaftliche Visualisierung

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How much information do we need to find correspondence between non-rigid shapes?

Prof. Michael Bronstein

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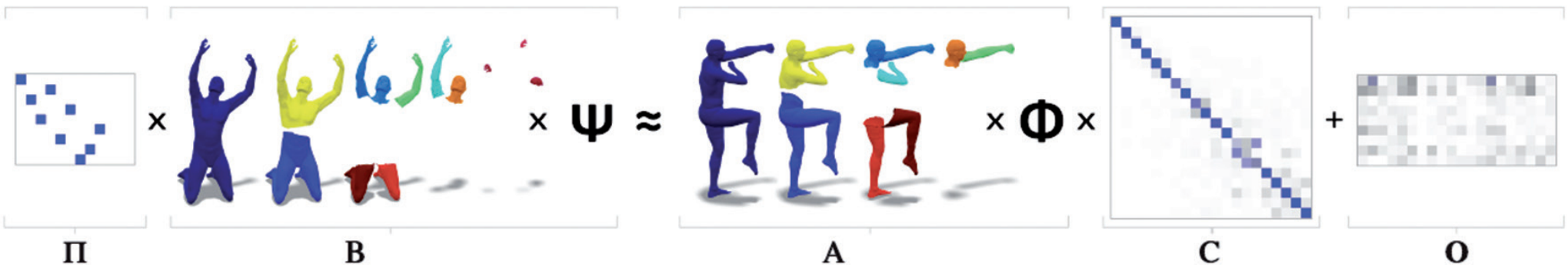
Montag, 6. Mai 2013 um 17:15 Uhr
Zuse-Institut Berlin (ZIB), Takustraße 7, 14195 Berlin
Hörsaal (Rundbau, Erdgeschoss)



In the first part of the talk, I will present a novel sparse modeling approach to non-rigid shape matching using only the ability to detect repeatable regions. As the input to our algorithm, we are given only two sets of regions in two shapes; no descriptors are provided so the correspondence between the regions is not known, nor do we know how many regions correspond in the two shapes. I will show that even with such scarce information, it is possible to establish very accurate correspondence between the shapes by posing it as a problem of permuted sparse coding, being this, the first non-trivial use of sparse models in shape correspondence.

In the second part of the talk, I will show how to extend the method to the setting of non-isometric shapes using quasi-harmonic bases constructed by joint approximate diagonalization of Laplacian matrices.