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The representation of space in biological and artificial systems

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ABSTRACT OF THE TALK

I will discuss some of the following topics:

Neural models of extrapersonal space (affine and Euclidean) for navigation.
Tolman’s cognitive map.
Place cells and grid cells.
Path integration problem. The Kalman’s framework.
Extrapersonal space in manipulation.
Remapping of motor coordination. Redundancy.
Null-space/task space decomposition.
The integrability problem in nonlinear inverse kinematics.
Temporal influences on space representations.