

Embodied intelligence in soft sensing

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Soft systems (both animals and robots) intrinsically suffer from the lack of sensor resolutions to track their own body motions. On the one hand a soft body usually has a large number of degrees of freedom, if not infinite, while there are always limited resources of sensory receptors and processes available, on the other. Starting from this basic assumption, we have been investigating how the constraints of soft sensing (i.e. sensor morphology in soft systems) can determine overall behaviours of soft systems, or more provocatively, how soft sensors shape the way robots behave. We will introduce several case studies we have been exploring in my group for discussing some conceptual design principles about embodied intelligence.