

Relationships Between Probabilistic Inference and Decision Processes

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Work in areas of probabilistic inference and statistical estimation and work in decision processes, planning and control have often been seen as distinct endeavours. In this talk I will draw out some of the relationships between these fields. I will show how solving decision processes can be cast as a learning and inference problem, and how learning and inference can be recast as a multi-agent decision problem. I will discuss and demonstrate the benefits of these reformulations in terms of the tools that become available as a results.

I will discuss joint work with Marc Toussaint and Stefan Harmeling, along with work with Jono Millin, Jinli Hu and Zhanxing Zhu.