

**CRUNCH Seminars at Brown, Division of Applied Mathematics**

**Friday - June 19, 2020**

**Physics Informed Reinforcement Learning (PIRL): Possibilities and Promises**

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How can the underlying Physical laws be approximated and utilized for enhancing the efficiency of Reinforcement Learning (RL) algorithms? An attempt to address this question is made in this talk. In the first part, some existing algorithms for RL in Non-Markovian settings will be surveyed. The possibility of using Gaussian processes in such scenarios will also be discussed. Second part of the talk deals with the concept of Semantic Information content, i.e. the information content that is 'meaningful' for a given system, and its possible use in enhancing the efficiency of RL algorithms. The talk concludes with the discussion of promises that PIRL holds in enhancing our understanding about Non-Linear Dynamical systems.