

NetBot: A Hockey Driven intelligent agent

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1 Introduction

We introduce an intelligent agent capable of imitating the skillset of a human expert in the sport of ice hockey, particularly the goaltender.

Having an autonomous agent capable of imitating a human expert in the game of ice hockey, or football (soccer), is a challenging task. A wide range of possible solutions exist, one of the main ones is using a CNN that takes images from the keepers POV to determine the action that the keeper should take. E.g., given a frame in a video sequence, the CNN $C(x)$ has a possible output x' such that $x' \in O$ where O is a set of possible actions, i.e. Top Left, Top Right, Bottom Right, Bottom Left, Dive Right, Dive Left, Jump, Stand. This is a possible approach. The ultimate endgoal is to not utilize sensors for estimating where a keeper should move as it produces unrealistic movements like that of a human expert. Rather, we are trying to develop an agent with human expert thinking capabilities in which its decision choice falls in the same range as the human expert.

2 Data Collection