UNIVERSITY OF SOUTH FLORIDA

Defense of a Master's Thesis

Analyzing Decision-making in Robot Soccer for Attacking Behaviors

by

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For the MSCS degree in Computer Science

Decision-making in Robotics soccer plays a fundamental role in the performance of a team's Software System. The University of South Florida's Robobulls SSL team implements behavior for the robots utilizing classical approaches such as using analytical geometry to path plan and determine if an action should be taken. Machine Learning and Reinforcement Learning techniques have been used in recent works to calculate the probability of success for a pass or goal and even train models for executing low level skills such as traveling towards a ball and shooting it towards the goal. Open-Source frameworks have been created for training Reinforcement Learning models to expand the research and further applications to robot soccer. This thesis seeks to utilize these frameworks to add to the existing publicly available resources as well as analyze whether implementing trained Neural-Network models can improve the performance or quality of the existing Robobulls software system.

Thursday, March 10th, 2022

10:00AM

Online (MS Teams)

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THE PUBLIC IS INVITED

Examining Committee

Alfredo Weitzenfeld, Ph.D., Major Professor

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Robert Bishop, Ph.D.
Dean, College of Engineering

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