Using Machine Learning to Enhance Win Ratio for College Ice Hockey Teams

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Abstract : Collegiate ice hockey (NCAA) sports analytics is different from the national level hockey (NHL). We apply and compare multiple machine learning models such as Linear Regression, Random Forest, and Neural Networks to predict the win ratio for a team based on their statistics. Data exploration helps determine which statistics are most useful in increasing the win ratio, which would be beneficial to coaches and team managers. We ran experiments to select the best model and chose Random Forest as the best performing. We conclude with how to bridge the gap between the college and national levels of sports analytics and the use of machine learning to enhance team performance despite not having a lot of metrics or budget for automatic tracking.