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Machine Learning in Momentum Strategies

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Abstract : The study applies machine learning models to construct momentum strategies and utilizes the information coefficient as an indicator for selecting stocks with strong and weak momentum characteristics. Through this approach, the study has built investment portfolios capable of generating superior returns and conducted a thorough analysis. Compared to existing research on momentum strategies, machine learning is incorporated to capture non-linear interactions. This approach enhances the conventional stock selection process, which is often impeded by difficulties associated with timeliness, accuracy, and efficiency due to market risk factors. The study finds that implementing bidirectional momentum strategies outperforms unidirectional ones, and momentum factors with longer observation periods exhibit stronger correlations with returns. Optimizing the number of stocks in the portfolio while staying within a certain threshold leads to the highest level of excess returns. The study presents a novel framework for momentum strategies that enhances and improves the operational aspects of asset management. By introducing innovative financial technology applications to traditional investment strategies, this paper can demonstrate significant effectiveness.

Keywords : information coefficient, machine learning, momentum, portfolio, return prediction
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