# Master's Thesis Presentation

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## "Realized Volatility Forecasting with Machine Learning"

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## Abstract

Realized volatility (RV) represents a nonparametric ex-post estimate of the return variation. Real-time estimates and forecasts of realized volatility play a crucial role in option pricing, trading, and risk management. This paper investigates the predictive power of machine learning models for forecasting future realized volatility in the equity market. By leveraging high-frequency intraday prices and implied volatilities (IV) derived from equity options, our empirical results within the S&P 500 universe reveal that shallow neural networks deliver superior out-of-sample predictive performance compared to existing OLS-based regression models. Furthermore, our findings are robust and scalable, extending to a much broader U.S. stock universe encompassing 10,000 stocks spanning from 1996 to 2023.

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