DEEP LEARNING APPLIED TO PUBLIC COMPANY VALUATION FOR VALUE INVESTING

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The Supervisory Committee certifies that this ***disquisition*** complies with North Dakota State University's regulations and meets the accepted standards for the degree of

NAME OF DEGREE

Master of Science in Computer Science and Statistics

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ABSTRACT

Value investing is an investing approach that seeks to discover and take advantage of price discrepancies between the market price and the actual value of a company (intrinsic value). The purpose of this work is to measure the intrinsic value of companies using an approach that has had success in the broad field of Artificial Intelligence, Deep Learning. Finding patterns in large amounts of data is what Deep Learning can be used for. Typically for value investing an investor will seek to find conservative estimates on the current value of a company by analyzing fundamental data. Our method attempts to perform these estimates in a data driven manor using Deep Learning to estimate the intrinsic value of a company with the overall goal of aiding the Investor in uncovering undervalued companies.

DEDICATION

To my wife who has helped me endlessly during my master's program and is there for me in every step of my life.

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LIST OF ABBREVIATIONS

ANN .....Artificial Neural Network

AI .....Artificial Intelligence

CNN .....Convolutional Neural Network

DCF .....Discount Cash Flow

EPS.....Earnings Per Share

FFN .....Feed Forward Neural Network

MSE .....Mean Squared Error

PE Ratio .....Price to earnings ratio

RNN .....Recurrent Neural Network

S&P .....Standard and Poor Index