**Forecasting Bike Usage with TransformerModel**

**Montana State University Bozeman**

Computational Project

EIND 558

Author:

Gage Halverson

Department of Mechanical & Industrial Engineering

Montana State University

Table of Contents

[Introduction 3](#_Toc121872641)

[Literature review 3](#_Toc121872642)

[Methods 3](#_Toc121872643)

[Data Cleaning 3](#_Toc121872644)

[Feature Selection 3](#_Toc121872645)

[Covariate Selection 3](#_Toc121872646)

[Testing Training Split 3](#_Toc121872647)

[Model Generation 3](#_Toc121872648)

[Results 3](#_Toc121872649)

[Discussion 3](#_Toc121872650)

[Limitations 3](#_Toc121872651)

[Future Research 4](#_Toc121872652)

# Introduction

Introduction to the project

Executive Summary

# Literature review

to machine learning and the Transformer model

Overview of time series forecasting and the challenges it presents

# Methods

## Data Cleaning

Description of the dataset you will be using, including the variables you will be using to predict rental demand

## Feature Selection

## Covariate Selection

## Testing Training Split

## Model Generation

Explanation of the methods you will use to train and evaluate the Transformer model

# Results

Results of your experiments and any findings or insights that emerged

# Discussion

Discussion of the potential applications and limitations of using a Transformer model for time series forecasting

## Limitations

## Future Research

Conclusion and future work