

Progress Journal for CAMS Project, Team  
Radiant

Sara Haman, Kalani Stanton, Vivienne Prince

2021-11-25



# Contents

<b>Preface</b>	<b>5</b>
<b>1 Introduction</b>	<b>7</b>
<b>2 Documentation</b>	<b>9</b>
2.1 Getting Started . . . . .	9
2.2 Updates and Modifications . . . . .	9
<b>3 Model Architectures</b>	<b>11</b>
<b>4 Model Evaluation</b>	<b>13</b>
4.1 Feature set data . . . . .	13



# Preface

This project was completed in accordance with the requirements for the Practical Data Science course in the Data Science Masters program at New College of Florida.



# Chapter 1

## Introduction

This is indeed a book. Wow.





## Chapter 2

# Documentation

such an absolute book, wow.

### 2.1 Getting Started

#### 2.1.1 Adding a Model

If you would like to experiment with your own architecture variations

#### 2.1.2 Training A Model

#### 2.1.3 Directory Structure

```
|_README.md
|_train_experiment.py
|_train_LatLng.py
|
|_Data
|  |_
|_Models
```

##### 2.1.3.1 Data

##### 2.1.3.2 Results

### 2.2 Updates and Modifications



## Chapter 3

# Model Architectures

```
library(tidyverse)
```

```
featureset_df = read_csv('data/featuresets_ModelHistories.csv')

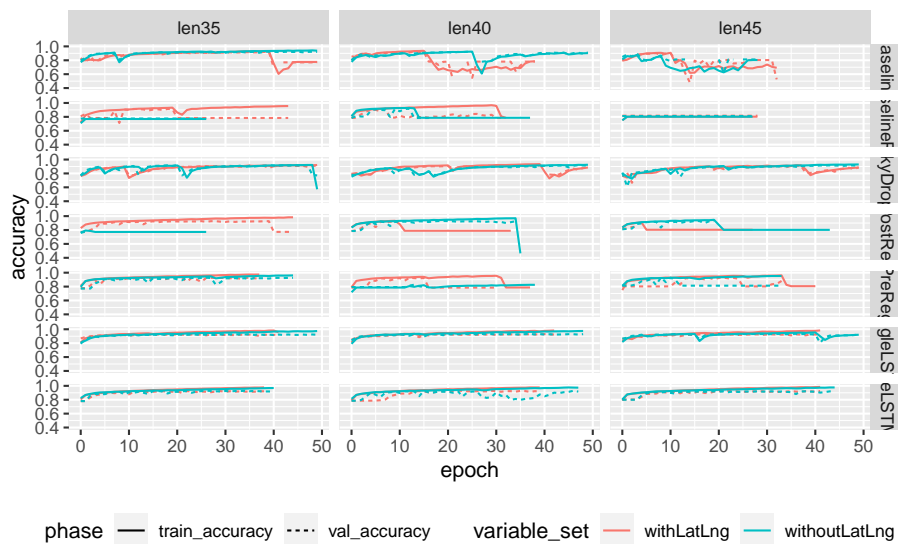
accuracy_df <- featureset_df %>%
  rename(train_loss = loss, train_accuracy = accuracy) %>%
  select(-c("val_loss", "train_loss")) %>%
  pivot_longer(cols = c(train_accuracy, val_accuracy), names_to = "phase", values_to = "accuracy")

loss_df <- featureset_df %>%
  rename(train_loss = loss, train_accuracy = accuracy) %>%
  select(-c("val_accuracy", "train_accuracy")) %>%
  pivot_longer(cols = c(train_loss, val_loss), names_to = "phase", values_to = "loss")
```

```
ggplot(accuracy_df, aes(x = epoch, y = accuracy, color = variable_set, linetype = phase)) +
  geom_line(linewidth = 10) +
  ylim(0.4, 1.0) +
  facet_grid(vars(model), vars(len_instance)) +
  ggtitle("Model Training History Comparison", subtitle = "Differences between training and test")
```

### Model Training History Comparison

Differences between training and test performance across feature sets.



## Chapter 4

# Model Evaluation

### 4.1 Feature set data

```
library(tidyverse)
```

```
featureset_df = read_csv('data/featuresets_ModelHistories.csv')
```

```
accuracy_df <- featureset_df %>%
```

```
  rename(train_loss = loss, train_accuracy = accuracy) %>%
```

```
  select(-c("val_loss", "train_loss")) %>%
```

```
  pivot_longer(cols = c(train_accuracy, val_accuracy), names_to = "phase", values_to = "accuracy")
```

```
loss_df <- featureset_df %>%
```

```
  rename(train_loss = loss, train_accuracy = accuracy) %>%
```

```
  select(-c("val_accuracy", "train_accuracy")) %>%
```

```
  pivot_longer(cols = c(train_loss, val_loss), names_to = "phase", values_to = "loss")
```

```
ggplot(accuracy_df, aes(x = epoch, y = accuracy, color = variable_set, linetype = phase)) +
```

```
  geom_line(linewidth = 10) +
```

```
  ylim(0.4, 1.0) +
```

```
  facet_grid(vars(model), vars(len_instance)) +
```

```
  ggtitle("Model Training History Comparison", subtitle = "Differences between training and test")
```

### Model Training History Comparison

Differences between training and test performance across feature sets.

