Monty MATLAB Group 9: Silly Walks Classifier

Technische Universität München

Lehrstuhl für Datenverarbeitung

Group Members:

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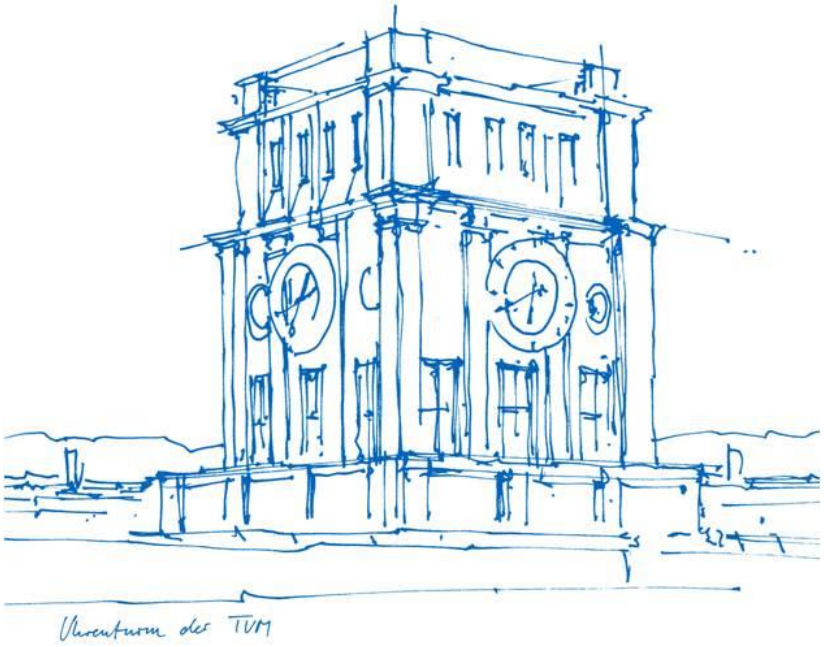
12.07.2024 Munich



Agenda

- Introduction
- Data Collection
- Data Extraction
- Model Training and Classification
- GUI

Introduction

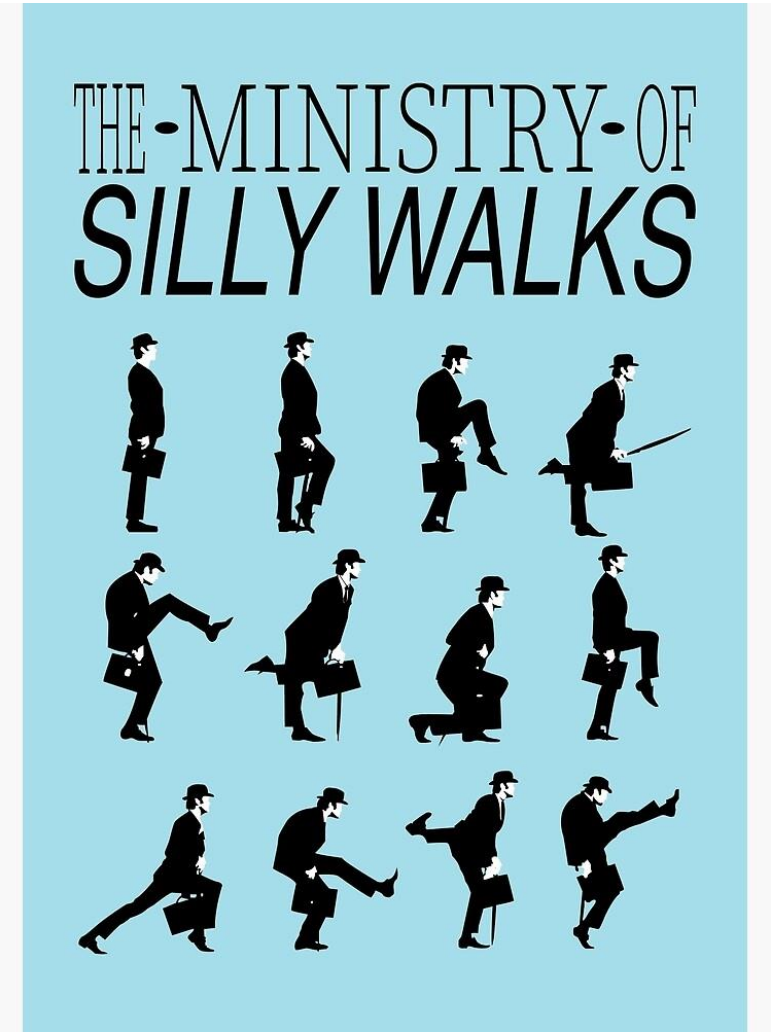
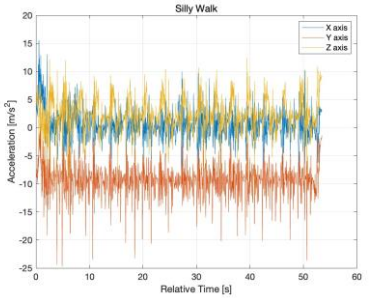
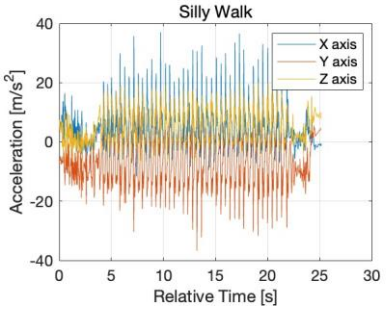


Figure 1. The ministry of silly walks[1]

Data Collection





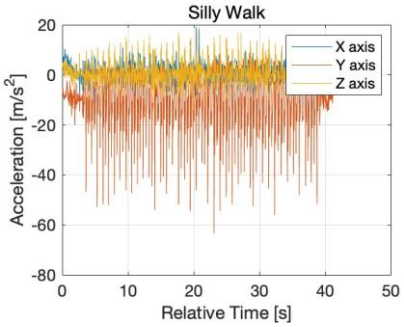


Figure 2. Three different silly walking style

Data Extraction

→ Data Loading and Resampling
→ Windowing Parameters Setup
→ Segmenting Data into Windows
→ Labeling the Windows

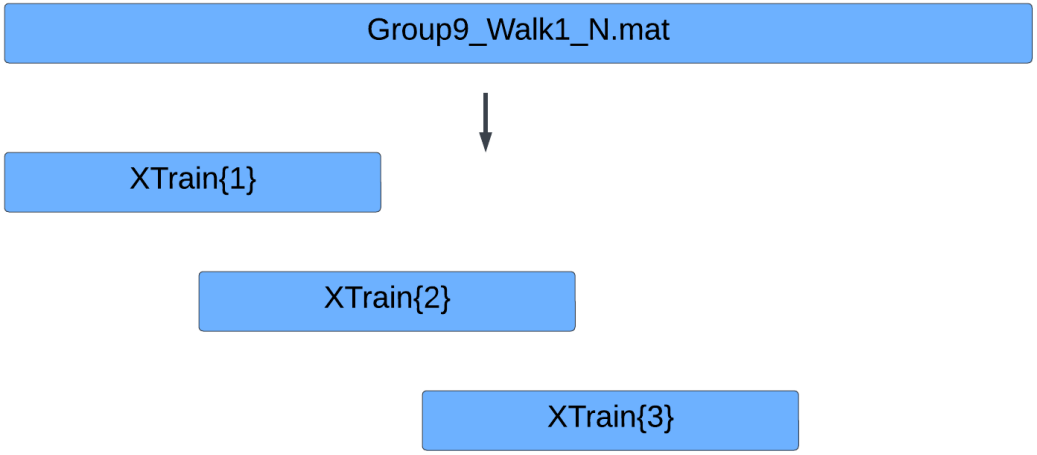


Figure 3. Windowing Setup

Model Training and Classification

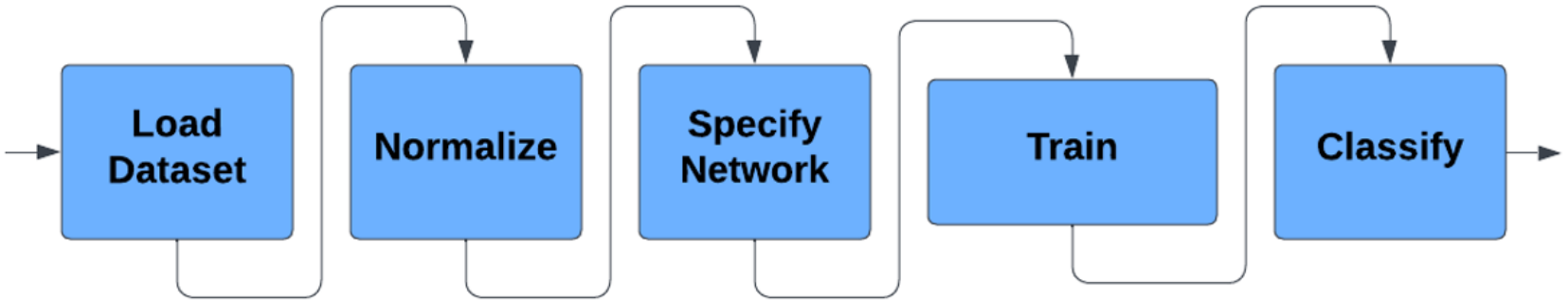


Figure 4. Train and classify procedures

Model Training and Classification

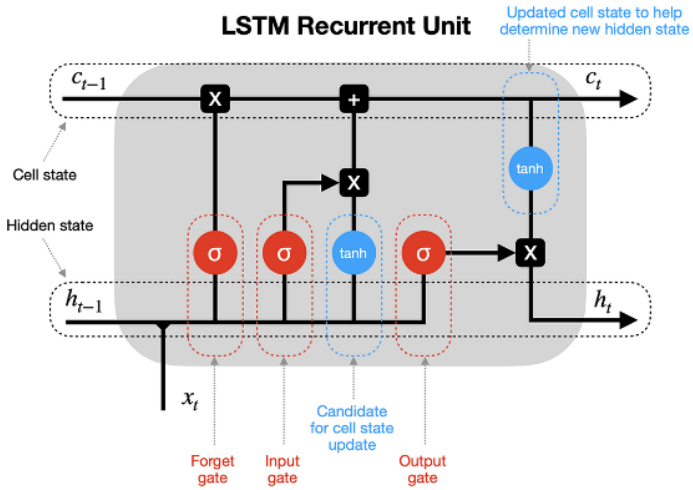


Figure 5. Long Short-Term Memory (LSTM)[2]

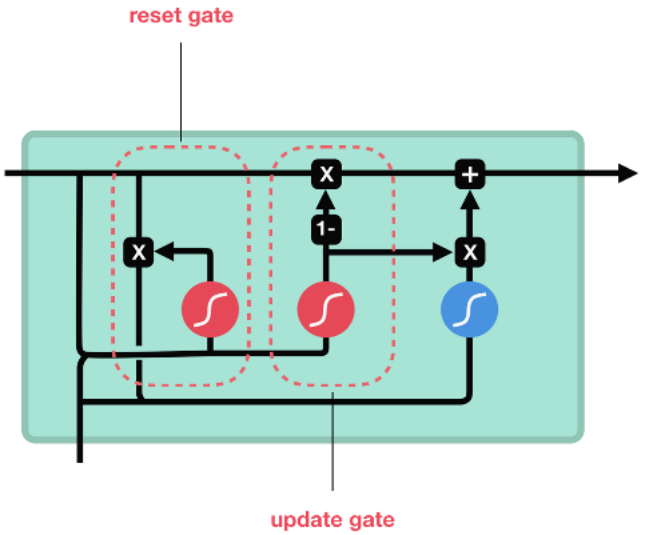
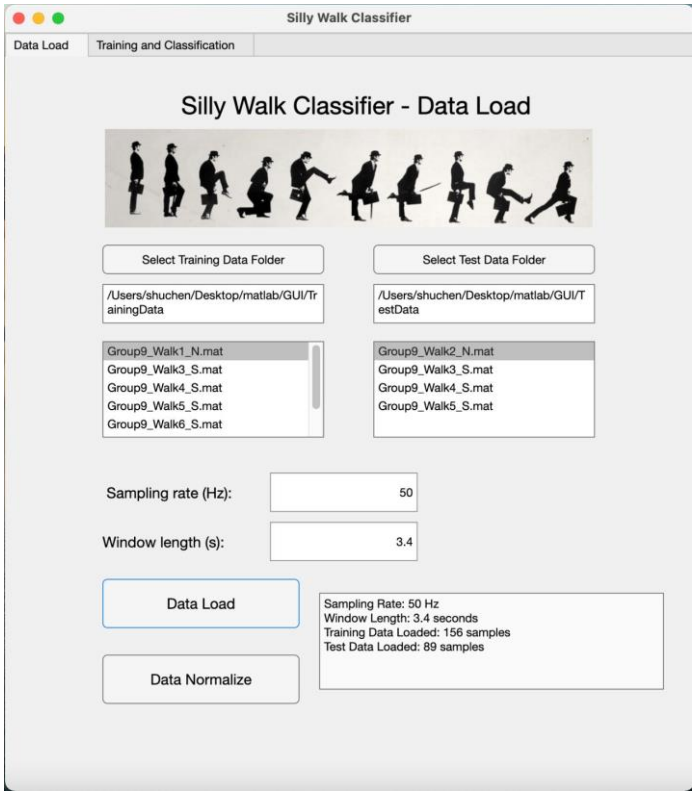


Figure 6. Gated Recurrent Unit (GRU)[3]

GUI



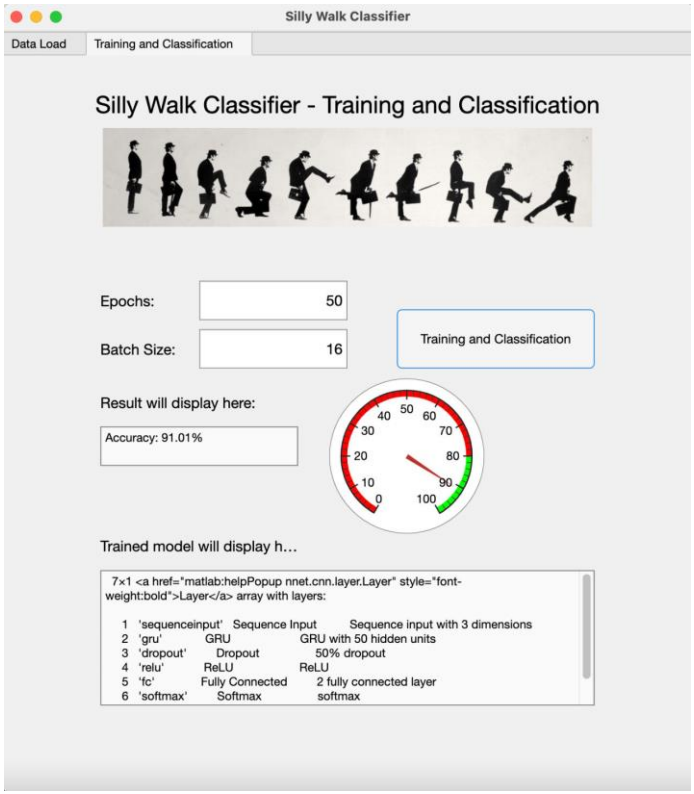


Figure 7. GUI Layout

References

[1] The ministry of silly walks:
https://www.redbubble.com/de/i/poster/Das-Ministerium-f%C3%BCr-Silly-Walks-von-SebastianAas/30047202.LVTDI

[2] LSTM
https://towardsdatascience.com/lstm-recurrent-neural-networks-how-to-teach-a-network-to-remember-the-past-55e54c2ff22e

[3] GRU
https://matthieuhernandez.github.io/StraightforwardNeuralNetwork/neural_network/Layer/gru.html