Master's Thesis 2026

Title

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Title

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Title

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Abstract

bla bla

Keywords: *Physics Informed Neural Network, ..., ...*

Acknowledgements

List of Acronyms

EV electric vehicle. 1

PINN physics-informed neural network. 1

RMSE root-mean-squared error. 3

Contents

1 Introduction

1.1 Background

physics-informed neural network (PINN), electric vehicle (EV)

1.2 Aim and Scope

Continuing the introduction with a cite [ ]

2
Theory

2.1 Overview of Batteries

- A battery's parts, anode, cathode, electrolyte. Cell vs. module.
- The general working principle: charging and discharging. Potential negative effects that need to be considered. Heat developement, or other factors affecting performance of the cell.
- What equations are governing? (Thermodynamics, Mechanics, electric, chemical)

2.2 Neural Networks

- General overview of neural networks. Explain neurons, weights, bias, loss function, different types of NNs. RNN??
- How to make NNs PINNs?
-

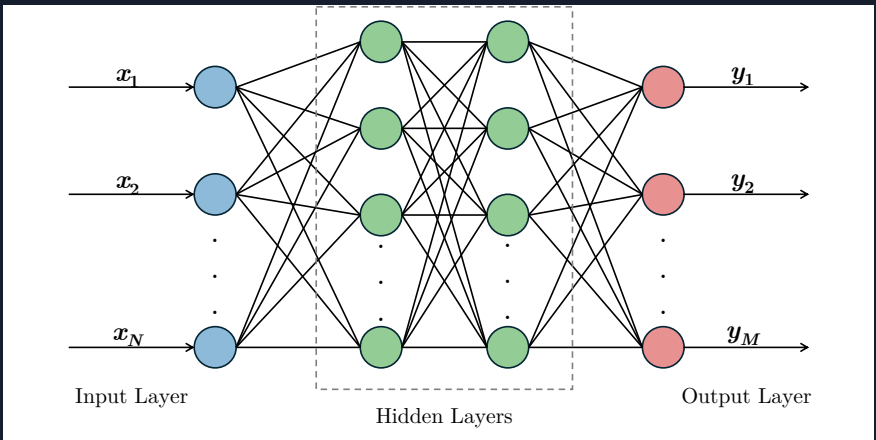

FIG 2.1: Schematic view of a neural network where each circle represents a single neuron. An input signal $\boldsymbol{X} = \{\boldsymbol{x}_i\}_{i=0}^{N}$ enters the model in the input layer, proceeds through the hidden layers, and exits from the output layer. This process produces an output $\boldsymbol{Y} = \{\boldsymbol{y}_i\}_{i=0}^{M}$, which can be interpreted as a prediction based on the input data.

Loss function, such as root-mean-squared error (RMSE).

3
Method

Here's the method

4
Results and Discussion

Here are the results

5
Conclusion

Here's the conclusion

Bibliography

[1] J. Haraldsson, “Msc thesis,” *Chalmers*, vol. 1, no. 1, 2026.

A
Appendix A: Extra Stuff

In Fig. A.1, ...

Fig A.1: hej