

# Designing RNN for Explainability

This work is part of master thesis.

Pattarawat Chormai

Supervised by Dr. Grégoire Montavon, Prof. Klaus-Robert Müller

Technical University Berlin, Department of Machine Learning

p.chormai@campus.tu-berlin.de



## Abstract

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## Introduction

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## Sensitivity Analysis

[3], an modified version **Guided Backprop**[4]

## Deep Taylor Decomposition

[2]

## Layer-Wise Relevance Propagation

[1]

## Setting

Dataset, problem training ... procedures ...

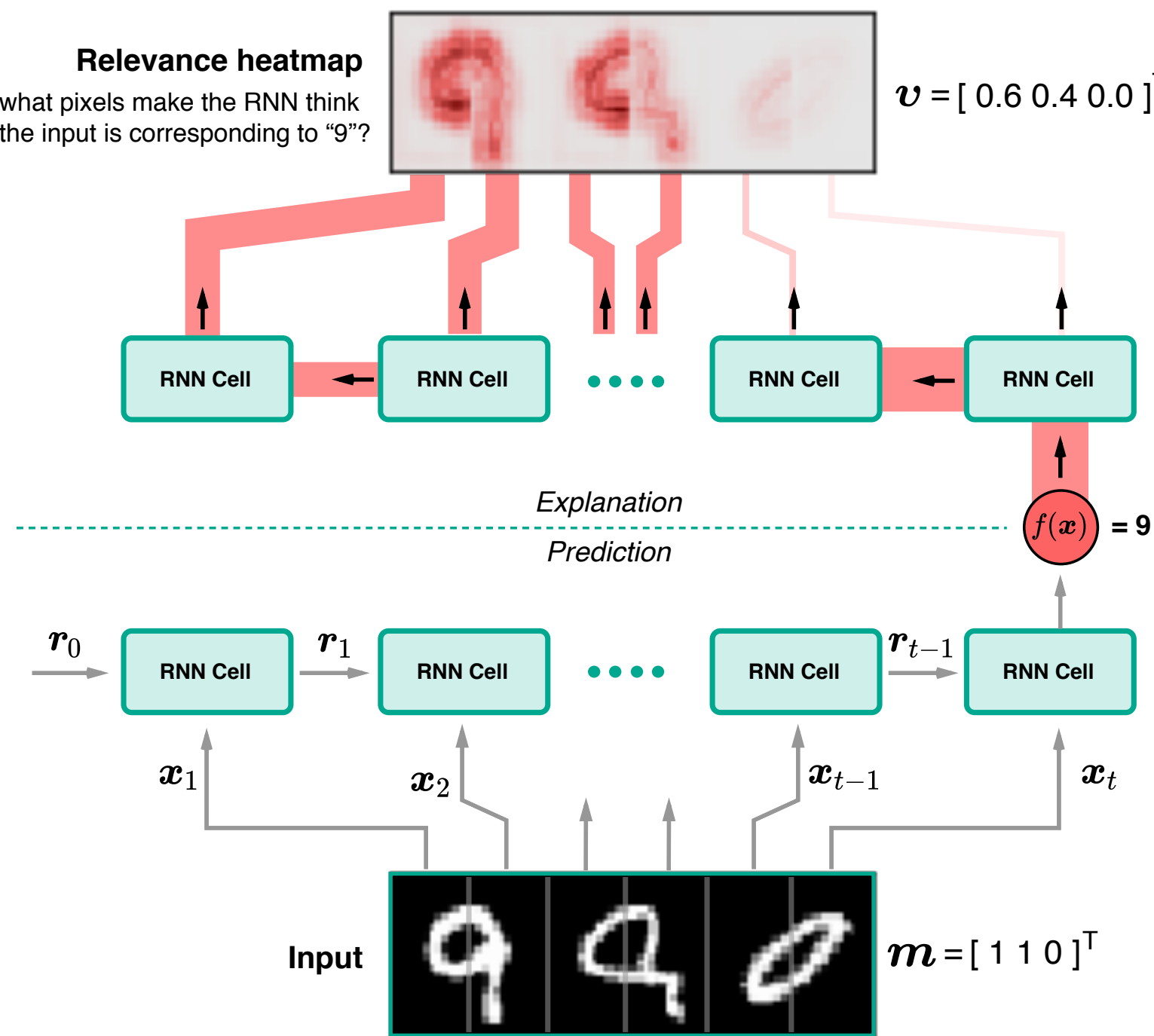


Figure 1: Figure caption

Our quantitative evaluation is based on *cosine similarity* between a binary vector  $\mathbf{m} \in \mathbb{R}^3$ , whose entry indicates whether the item belongs to the majority group, and a vector  $\mathbf{v} \in \mathbb{R}^3$  representing percentage of relevance distributed to the corresponding item.

$$\cos(\mathbf{m}, \mathbf{v}) = \frac{\mathbf{m} \cdot \mathbf{v}}{\|\mathbf{m}\| \|\mathbf{v}\|}$$

## Architectures

Figure X shows RNN architectures considered in this study.

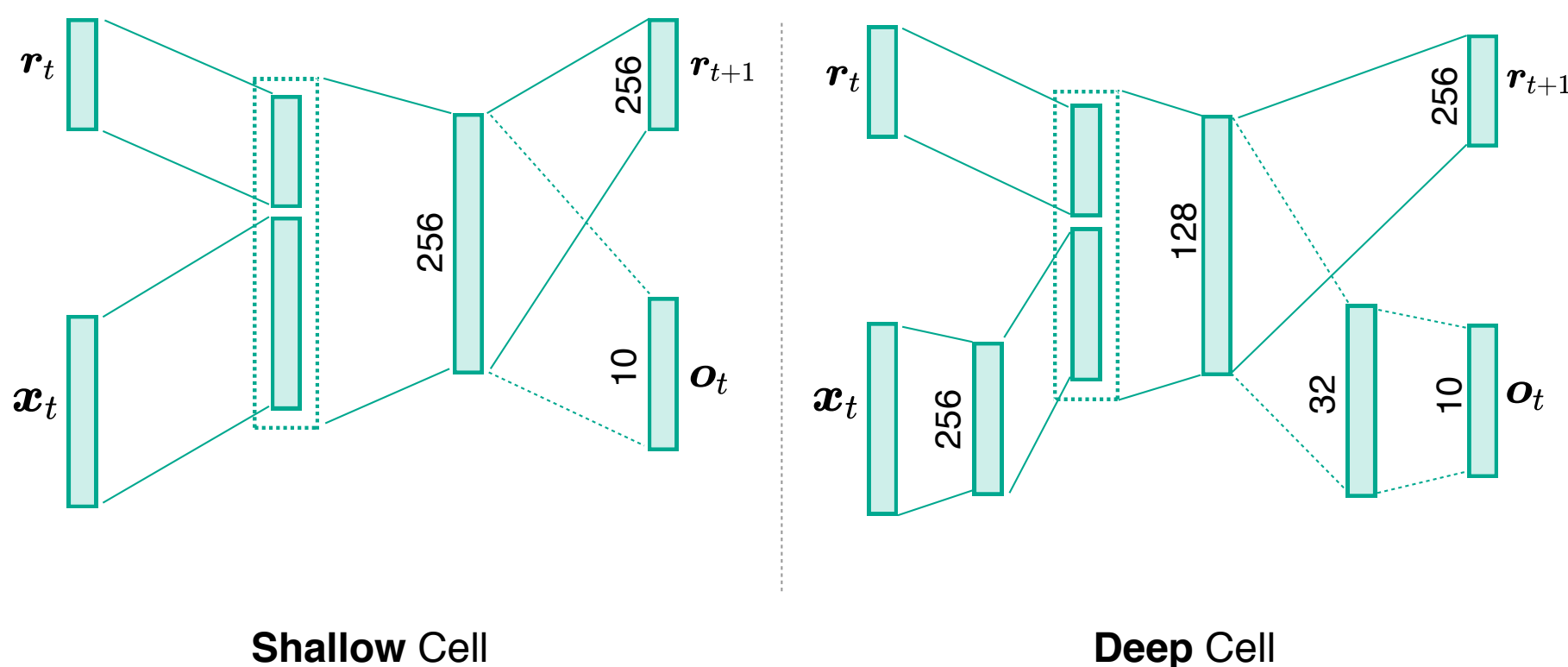


Figure 2: Figure caption

## Results

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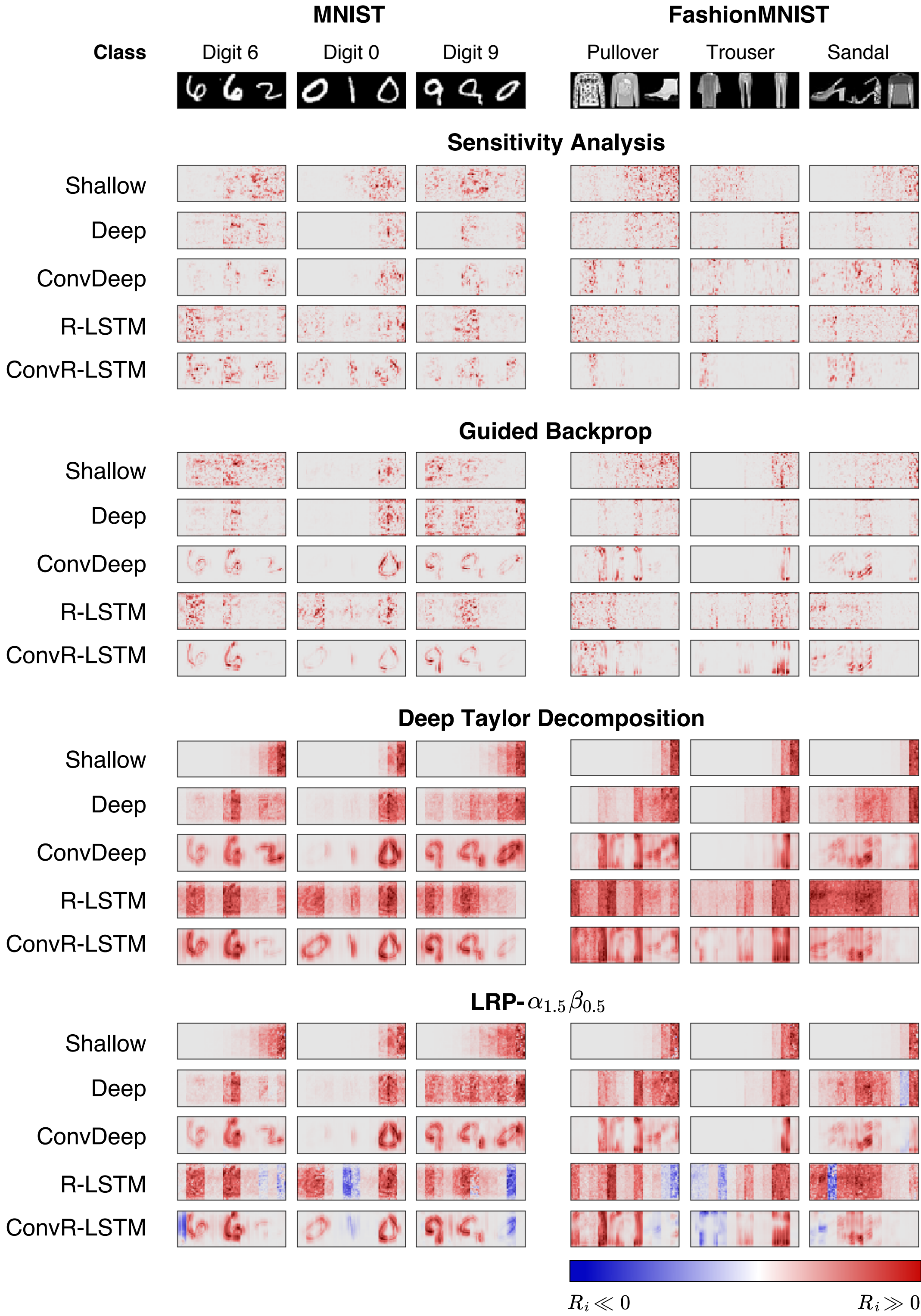


Figure 3: Figure caption

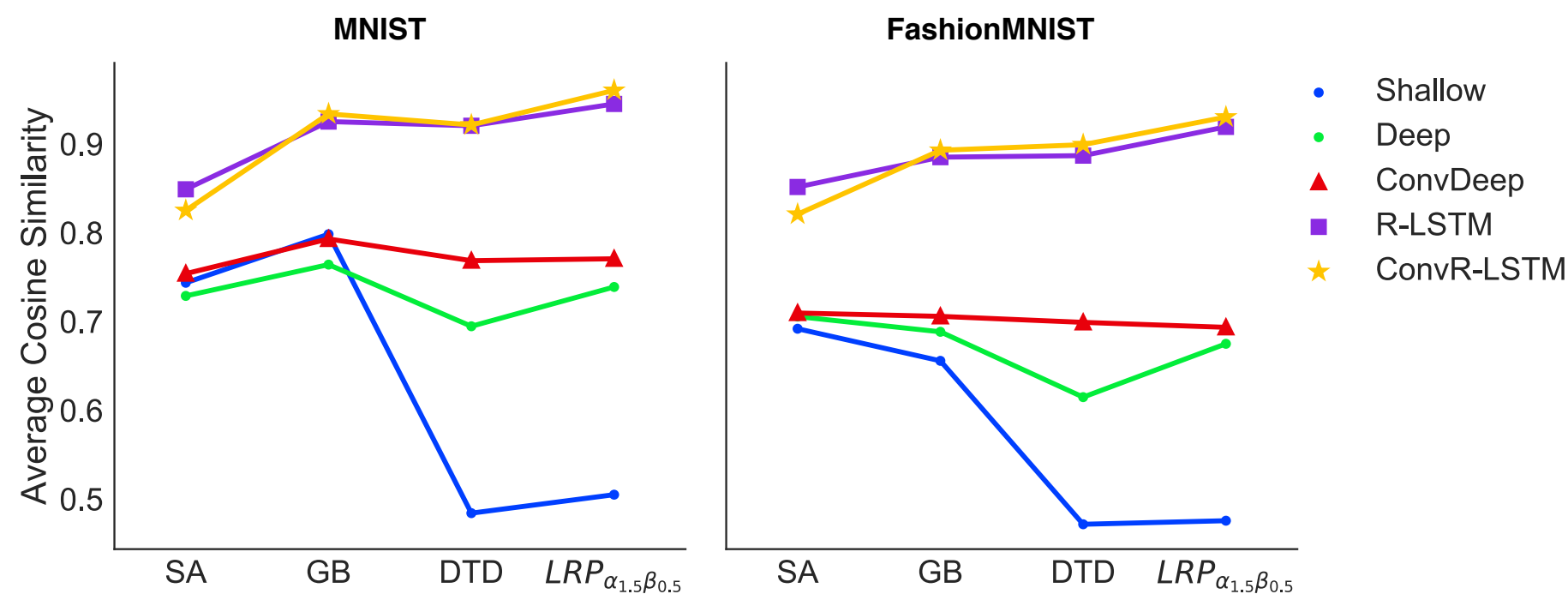


Figure 4: Figure caption

## Conclusions

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## Future Work

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## References

- [1] S. Bach, A. Binder, G. Montavon, F. Klauschen, K.-R. Müller, and W. Samek. On Pixel-Wise Explanations for Non-Linear Classifier Decisions by Layer-Wise Relevance Propagation. 10(7).
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- [4] J. Springenberg, A. Dosovitskiy, T. Brox, and M. Riedmiller. Striving for simplicity: The all convolutional net.



## Acknowledgements

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