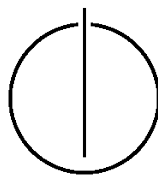# DEPARTMENT OF INFORMATICS

TECHNISCHE UNIVERSITÄT MÜNCHEN

Bachelor's Thesis in Informatics

Training a Spiking Neural Network using R-STDP to perform Autonomous Target Tracking on a Snake Car Robot

René Romen

DEPARTMENT OF INFORMATICS
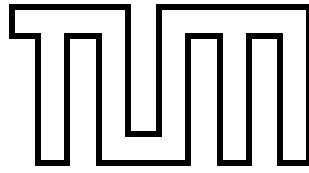
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Training a Spiking Neural Network using R-STDP to perform Autonomous Target Tracking on a Snake Car Robot

Training von Spiking Neural Networks für die Automatische Zielverfolgung auf einem Schlangen Roboter mit R-STDP

Author:	René Romen
Supervisor:	Prof. Dr.-Ing. habil. Alois Knoll
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Date:	August 6, 2018
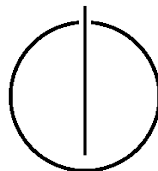
I confirm that this master's thesis is my own work and I have documented all sources and material used.

München, 6. August 2018   René Romen

Abstract

Contents

List of Abbreviations

SNN   Spiking Neural Network

1. Introduction

1.1. Background

1.2. Problem Statement

This thesis is structured as follows:

- Chapter 2 provides . . .

2. Technology Overview

3. Implementation of Direct GPU-FPGA Communication

Listing 3.1: example

```
code = example
```

4. Evaluation

5. Conclusions and Future Work

Appendix

A. Example RDMA application

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