



Mercedes-Benz



Duale Hochschule Baden-Württemberg Stuttgart

## **Bachelor Thesis**

# **Development of a PoC for a PCIe based Automotive Zonal Architecture**

## **Computer Science**

### **IT-Automotive**

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# Declatation of Academic Integrity

I hereby declare that I have written the present thesis titled *Development of a PoC for a PCIe based Automotive Zonal Architecture* independently and have used no sources or aids other than those stated. Furthermore, I confirm that the submitted electronic version corresponds to the printed version.

Place, Date

Philipp Gehrig

Hiermit erkläre ich, dass ich die vorliegende Arbeit mit dem Titel *Development of a PoC for a PCIe based Automotive Zonal Architecture* selbstständig verfasst und keine anderen als die angegebenen Quellen und Hilfsmittel benutzt habe. Ich versichere zudem, dass die eingereichte elektronische Fassung mit der gedruckten Version übereinstimmt.

Ort, Datum

Philipp Gehrig

# Acknowledgement

This chapter contains the Acknowledgement

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# Acronyms

**PCIe**      Peripheral Component Interconnect Express

# Abstract



# 1 Introduction

## 1.1 Motivation

## 1.2 Problem

## 1.3 Solution Approach

## 2 State of the Art

### 2.1 PCIe

### 2.2 Zonal Automotive Architecture

## 3 Concept

### 3.1 Software Architecture

# 4 Implementation

## 4.1 Experimental Setup

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# 5 Evaluation

## 5.1 Benchmarking

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# A Appendix