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Latency, energy, and schedulability of real-time embedded systems

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Citation

Liu, D. (2017, September 6). *Latency, energy, and schedulability of real-time embedded systems*. Retrieved from <https://hdl.handle.net/1887/54951>

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Author: Liu, D.

Title: Latency, energy, and schedulability of real-time embedded systems

Issue Date: 2017-09-06

Latency, Energy, and Schedulability of Real-Time Embedded Systems

Di Liu

Latency, Energy, and Schedulability of Real-Time Embedded Systems

PROEFSCHRIFT

ter verkrijging van
de graad van Doctor aan de Universiteit Leiden,
op gezag van Rector Magnificus Prof.mr. C.J.J.M. Stolker,
volgens besluit van het College voor Promoties
te verdedigen op woensdag 6 september 2017 klokke 13:45 uur

door

Di Liu
geboren te Lijiang, China
in 1984

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Latency, Energy, and Schedulability of Real-Time Embedded Systems

Di Liu. -

Dissertation Universiteit Leiden. - With ref. - With summary in Dutch.

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This dissertation was typeset using L^AT_EX in Linux and version controlled using Git.

ISBN: 978-94-6299-658-8

Printed by: Ridderprint, the Netherlands.

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List of Abbreviations

Proposed Algorithms

ASHM Allocation and Split on Heterogeneous Multicore

DM Density Minimization

FDM Frequency Driven Mapping

Data-Flow Models

CSDF Cyclo-Static Data-Flow

SDF Synchronous Data-Flow

Mixed-Criticality Systems

AMC Adaptive Mixed-Criticality

CA Certification Authority

EDF-VD Earliest Deadline First with Virtual Deadline

IMC Imprecise Mixed-Criticality

MC Mixed-Criticality

Others

ASIP Application Specific Instruction Processor

EE Energy-Efficient

ICP Integer Convex Programming

ILP Integer Linear Programming

MPSoC Multi-Processor System-on-Chip

PE Performance-Efficient

UAV Unmanned Aerial Vehicle

VFS Voltage and Frequency Scaling

Real-Time Systems

BF Best-Fit

DBF Demand Bound Function

EDF Earliest Deadline First

FF First-Fit

FFD First-Fit-Decreasing

HRT Hard-Real-Time

LLF Least Laxity First

QPA Quick convergency Processor-demand Analysis

WCET Worst-Case Execution Time

WF Worst-Fit

WFD Worst-Fit-Decreasing