

RWTH AACHEN UNIVERSITY
Chair of Computer Science 2
Software Modeling and Verification

Master Thesis Proposal

Title tbd

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1 Introduction

- Short intro into QC
 - What is QC
 - Why is it important
 - What can it be used for

2 Motivation

- Classical controlflow [ACR*10] vs quantum control flow [YYF12]

3 Concept

Bibliography

- [ACR*10] A. Ambainis, A. M. Childs, B. W. Reichardt, R. Špalek, and S. Zhang. Any and-or formula of size n can be evaluated in time $n^{1/2+o(1)}$ on a quantum computer. *SIAM Journal on Computing*, 39(6):2513–2530, 2010.
- [YYF12] Mingsheng Ying, Nengkun Yu, and Yuan Feng. Defining quantum control flow.