apl. Prof. Dr. Thomas Noll

Seminar Topics *Quantum Compilation*
(Summer 2024)

First name: _____

Surname: _____

Matriculation no.: _____

Study programme: ☐ BSc Informatik   ☐ MSc Informatik   ☐ MSc SSE   ☐ Other

Please choose your three preferred topics from the following list (1st/2nd/3rd choice):

No.	Title	1.	2.	3.
Overview Topics				
1	Programming languages and compiler design for realistic quantum hardware			
2	Full-stack quantum computing systems in the NISQ era			
The Routing Problem in General				
3	On the Qubit Routing Problem			
4	Tackling the Qubit Mapping Problem for NISQ-Era Quantum Devices			
Compilation for Neutral-Atom Quantum Computers				
5	Comput. Capab. and Compiler Developm. for Neutral Atom Quantum Processors			
Compilation for Trapped-Ion Quantum Computers				
6	Quantum Circuit Compiler for a Shuttling-Based Trapped-Ion Quantum Computer			
7	Efficient Qubit Routing for a Globally Connected Trapped Ion Quantum Computer			
Compilation for Spin Quantum Computers				
8	SpinQ: Compilation strategies for scalable spin-qubit architectures			
Software Frameworks				
9	Qiskit			
10	t|ket⟩			
11	ProjectQ			
12	ScaffCC			

Language for report/talk:

	German
	English