Invitation to the Oral Examination – Department CS

For the occasion of his/her examination for a Doctoral Degree,

Jeeta Ann Chacko

will present her dissertation entitled

Holistic Approaches to Performance Optimization in Decentralized Systems:

A Study of Hyperledger Fabric

on **29th of November 2024** at **15:00 h**

Attendance to the presentation is open to the public. The presentation will be in English.

The candidate, all members of the Examination Committee, and authorized examiners of the TUM School of CIT are invited to the presentation and subsequent oral examination.

The presentation and subsequent examination will take place hybrid via Zoom:

TUM School of CIT, Boltzmannstr. 3, 85748 Garching in room **00.12.019**.

Zoom

https://tum-conf.zoom.us/j/2176944321?pwd=bDhURGJDVFdHMDhtdC9vMk1HWEZYdz09

Meeting ID: 217-694-4321

Password: 738086

Examination committee:

Chair: **Prof. Michael Gerndt**

First Examiner: **Prof. Hans-Arno Jacobsen**

Second Examiner: **Prof. Florian Matthes**

Third Examiner: **Prof. Bettina Kemme**

Garching, the **19th** of **November 2024**

Mailing list:

Members of the examination committee

Doctoral candidate

Abstract:

This work explores holistic approaches to optimize the performance of decentralized systems using Hyperledger Fabric, a popular permissioned blockchain system, as a demonstrative example. We address transaction failures in Fabric by experimentally analyzing various system configurations and providing performance optimization guidelines. Further, we develop a multi-level performance optimization recommendation tool that derives nine recommendations aimed at enhancing the system's performance. We also propose a self-driving blockchain framework for real-time performance optimization.