Invitation to the Oral Examination – Department CS

For the occasion of his examination for a Doctoral Degree,

Mr. Florian Hölzlwimmer

will present her dissertation titled

**Aberrant gene expression prediction from sequence and implications
in health and disease**

on Tuesday, November 5, 2024, at 10:00 (CEST)

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 in **hybrid** form.

In person in Room **00.10.011 (CIT Sitzungsraum 1), CIT-Building, Boltzmannstraße 3,
Campus Garching**

And online via Zoom:

https://tum-conf.zoom-x.de/j/62634121994?pwd=YjlfaTqVxZdVbflSCAa2XAaO0Xg57I.1

Meeting ID: 626 3412 1994

Passcode: 698779

Examination committee:

Vorsitz der Prüfungskommission: Prof. Dr. Nassir Navab

Erstprüfer:in: Prof. Dr. Julien Gagneur

Zweitprüfer:in: Prof. Bertram Müller-Myhsok

Munich, **the 18 of October 2024**

Mailing list:

Members of the examination committee
Doctoral candidate

Abstract:

Identifying high-impact variants is essential for deciphering the genetic basis of diseases. Here I created the first benchmark for expression outlier prediction in human tissues. I further developed AbExp, a method to predict aberrantly underexpressed genes from DNA sequence. Despite modest predictive ability from existing scores like CADD and LOFTEE, AbExp outperformed these 6-18 fold. Finally, I used AbExp to improve rare variant

association studies and phenotype prediction in the UK Biobank.