

A U S H A N G

FREIE UNIVERSITÄT BERLIN

Fachbereich Mathematik und Informatik

Promotionsbüro, Arnimallee 14, 14195 Berlin

DISPUTATION

Freitag, 13. Dezember 2024, 10:00 Uhr

Ort: [WebEx](#)

Disputation über die Doktorarbeit von

Chenxu Pan

Thema der Dissertation:

High-performance algorithms and applications of long-read mapping and SV detection

Thema der Disputation:

Studies of minimizer for sequence analysis - Population-scale long-read mapping

Die Arbeit wurde unter der Betreuung von **Prof. Dr. K. Reinert** durchgeführt.

Abstract: Advances in sequencing technology have facilitated population-scale long-read analysis, in which one of the main challenges is developing high-performance computational pipelines. This presentation is to introduce several studies on fundamental algorithms and applications within this field.

The first topic will focus on research of minimizers - a sequencing sketching technique widely applied to sequence analysis such as read alignment and de novo assembly.

The presentation will discuss the background on minimizers and introduce recent innovations that improve their performance in sequence analysis applications.

The second topic will present a long-read mapping pipeline, which is designed to better capture signals of structural variants compared to conventional pipelines to improve the performance of long-read analysis. It will discuss the proposed solution to address limitations in current pipelines, as well as assessments on large-scale datasets.

Die Disputation besteht aus dem o. g. Vortrag, danach der Vorstellung der Dissertation einschließlich jeweils anschließenden Aussprachen.

Interessierte werden hiermit herzlich eingeladen

Der Vorsitzende der Promotionskommission
Prof. Dr. K. Reinert