A U S H A N G

FREIE UNIVERSITÄT BERLIN

Fachbereich Mathematik und Informatik

Promotionsbüro, Arnimallee 14, 14195 Berlin

D I S P U T A T I O N

Montag, 16. Dezember 2019, 11:00 Uhr

Ort: Seminarraum T02 (1.4.03)

(Fachbereich Physik, Arnimallee 14, 14195 Berlin)

Disputation über die Doktorarbeit von

Herrn Tobias Pascal Loka

Thema der Dissertation:

Advanced Strategies for Alignment-based Real-time Analysis and Data Protection in Next-Generation Sequencing

Thema der Disputation:

MinHash, Sketches, Minimizers, Winnowing – Modern methods for DNA long read mapping used by the MashMap algorithm

Die Arbeit wurde unter der Betreuung von **Prof. Dr. B. Renard** durchgeführt.

Abstract:
Current DNA long read sequencing technologies such as Pacific Biosciences SMRT sequencing and Oxford Nanopore Technologies produce long reads with error rates of up to 15%. Methods for short read alignment are therefore not appropriate to efficiently map such reads to large reference databases. Recently, approximation approaches such as MinHash and winnowing have successfully been applied to the mapping of long erroneous reads. One example is the MashMap algorithm that combines several modern techniques making it highly accurate and several magnitudes faster when compared to alignment-based methods.

Jain C., Dilthey A., Koren S., Aluru S., Phillippy A. M. A Fast Approximate Algorithm for Mapping Long Reads to Large Reference Databases. Journal of Computational Biology 25(7), 2018. doi: 10.1089/cmb.2018.0036

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. B. Renard