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Linz, Oct 22nd, 2020

Supervisor Review of the Bachelor Thesis of Evren Aricanli

The Bachelor Thesis of Evren Aricanli „Reimplementation of the Connectivity Map With Accessibility Enhancements“ investigates potential improvement to the data processing and querying gene signature in the Connectivity Map database. The basis of this thesis are two publications: „The Connectivity Map: using gene-expression signatures to connect small molecules, genes, and disease“ (Lamb, 2006) and „A new summarization method for Affymetrix probe level data“ (Hochreiter, 2006).

Mr. Aricanli has preprocessed and re-analyzed the connectivity map data, concretely gene expression microarrays. He has performed a standard bioinformatics processing pipeline using a summarization algorithm for gene expression data. Notably, he has improved the accessibility of the querying mechanism by developing a graphical user interface that allows several types of annotations and signatures. In the end, he was able to demonstrate some exemplary cases, in which gene expression signature were queried. He was able to extract relevant information either directly from scientific publications or also from conversation with his supervisor. From the methodological point of view, there are a few minor problems or open question, that were not explored sufficiently enough, for example, the current state-of-the-art in the field of microarray summarization or alternative querying mechanisms. In the introductory section of the thesis, citations are notably absent. However, overall, Mr. Aricanli showed that he can cite appropriate references, write consistent lines of thoughts, and explain his approach relatively clearly. He demonstrated also his capabilities at re-implementing a bioinformatics analysis pipeline and provide access to users via a graphical user interface.

We can state that Mr. Aricanli is worthy of obtaining a Bachelor of Science title, given the work performed in this thesis.


Günter Klambauer