Interlaboratory Grant Report:

Place: ETH Zurich
Group: Ruedi Aebersold Group
Duration: 14.10.2019-16.10.2019

The visit to Ruedi Aebersold’s group took place during 3 days under the supervision of Dr. Chen Li. I presented my PhD project during the lab meeting on Tuesday 15.10.2019 for ~35 minutes followed by a discussion and feedback from the audience.

During the visit, the following topics were covered:

1. Debug and troubleshoot EPIC software to test its performance: the software was debugged and is running now. We tested datasets from the lab on it to benchmark its performance.
2. Benchmark the reproducibility of the current models of the software of Andrea Fossati: we built machine-learning models, such as Random Forest, Logistic Regression, SVM and Naive Bayesian classifier, to evaluate and compare the prediction performance, using Python and scikit-learn.
3. The applicability of statistical enrichment tools to evaluate the text-mining algorithm predictions of Varun Sharma. This point will take more time to achieve and we will continue to work together on this task.

In total, the 3-days visit was valuable on the level of academic sharing of knowledge. My aim was to go back to the machine learning world and test this on a real science problem. With the knowledge and guidance of Dr. Chen Li, we were able to achieve this task and at the same time evaluate the performance of their software which is an important step in any software production. Dr. Li generously offered a co-authorship on their actual paper which is a nice compensation to my contribution.

I was able to share my knowledge on statistical enrichment with Varun Sharma who is now working on this problem while at the same time, I got introduced to his text-mining approach on scientific papers. Future meetings will be necessary to finish what we discussed on this topic.

The feedbacks on my presentation were also constructive and challenging sometimes. I will try to address some of these points that were discussed upon my return to my lab. Moreover, I attended the PhD biweekly meeting where 2 PhD students presented their progress reports and an active discussion with the audience was insightful. It was also a nice opportunity to get introduced to the lab members and meet interesting people from different fields. I evaluate this visit as fruitful for both sides and I wish that it would have been longer.