Review of Dissertation thesis

Novelty detection via linear adaptive filters by Matouš Cejnek

Anomaly and novelty detection is an interesting and actual topic. There are many methods described in the state of the art analysis. Personally, I miss very efficient and popular approaches extending KNN approach - Local outlier factor based methods. Also modern methods based on generative adversarial networks should have been mentioned.

I am a big fan of simple efficient methods therefore I like the proposed algorithm very much. The experimental part validating the proposed method on toy problems is detailed and very well written. It would be great to compare the method also with very different approaches such as neural based or LoF based - including comparison of time and memory demands. Can you also be more specific in defining for which particular use cases your method outperforms other methods? For example are there any novelty detection tasks where a complex non-linear novelty detector would be significantly better?

Overall, the thesis is well written and the publication activity of the candidate is excellent.

Therefore I recommend the thesis to be accepted by the evaluation committee,

Prague, June 7th, 2020   doc. Ing. Pavel Kordík, Ph.D.