B4BPROJ6: Report

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Outline

Work proposal

Goals

- Familiarization with the subject of anomaly detection using neural networks
- Proposing domain-tailored method
- Designing and performing experiments
- Writing a conference paper

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Motivation

- Boosting performance of standard object detecting methods
- Implicit context modeling
- Robotic exploration
- Dataset correction
- General anomaly detection

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Initial resources

- Chong, Yong Shean, and Yong Haur Tay. "Abnormal event detection in videos using spatiotemporal autoencoder." International Symposium on Neural Networks. Springer, Cham, 2017.
- Redmon, Joseph, and Ali Farhadi. "Yolov3: An incremental improvement." arXiv preprint arXiv:1804.02767 (2018).

Achievements

Method-wise

- Successfully proposed a method for non-standard context-based anomaly detection (AD)
- Designed two experiments
  1. evaluating AD capabilities of proposed method,
  2. testing the applicability of anomaly detection to boosting object detection using our AD method.
- Implemented aforementioned experiments and showing the proposed method performs well and is thus suitable for further development

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Report-wise

- Prepared a conference paper almost ready for publication with a view for publishing it in near future.

Conclusion

- Expectations fulfilled, all goals achieved with a paper almost publication-ready.
- Possibility to continue research and develop further the proposed method for anomaly detection as well as preparing more interesting applications.