Project Title: Anomaly detection using self-supervised point clouds

1. Summary and contributions. Briefly summarize the project.

This project tests a novel hypothesis in self-supervised anomaly detection field: is it possible to detect anomalies by analyzing the structure of the point clouds obtained from embeddings of augmented data? The main contributions of the work are providing the pipeline for training SSL models, comparing the observed point clouds and suggesting metrics for cloud comparison.

2. Strengths. Describe all the strengths of the project in enough depth.

1. The authors provide full and self-contained description of the problem they are trying to solve which leaves out no questions on the motivation of the work.
2. The authors do a great job in describing the model architecture and experimental setup. It is very important in such works to explain the training procedure, the loss terms and details of implementation, and, unfortunately, is quite often paid little attention to.
3. The quality of the GitHub repository is one of the strong sides, too. It has clean and transparent structure, and a user-friendly README.
4. The reasoning for the choice of the models SimCLR and Barlow Twins is satisfactory and seems logical.
5. The results discussion is provided and seemingly appropriate future steps are suggested which contributes to the logical conclusion of the report.

3. Weaknesses. Explain all the limitations of this project in enough depth.

1. In the results section, training loss curves are shown to achieve minimum of ≈ 20 in both cases. However, the meaning of this value is unclear. It feels like the quality of the trained models could have been described in more detail and provided with some other metrics, for example accuracy score or f1 score. The way it is now, it is unclear from the report whether the models have been sensibly trained.
2. Minor punctuation and grammatical mistakes in the presentation and the report, which could have been easily avoided, decrease the overall impression of the work.

4. Correctness. Are the claims and method correct? Is the empirical methodology correct?

The methodology of the project is correct.

5. Clarity. Is the project report well written?

The project report is well written and clear. It leaves the reader with almost no questions except for some minor ones which are discussed above in the section Weaknesses.

6. Related work. Is it clearly discussed?

The discussion of related work is sufficient and it is clear how the project is connected to the relevant papers.

7. Reproducibility. Are there enough details to reproduce the major results of this work?

The project results seem to be reasonably reproducible. The report provides sufficient description of the architecture and the README file in GitHub repo describes the code well enough.

8. Overall score. You should NOT assume that you were assigned a representative sample of projects. The "Overall Score" for each project should reflect your assessment of the project.

Choose your score by **deleting** all the other scores.
(2) A very good submission; deserves high grade, tending to maximal (A).

9. Confidence score.

Choose your confidence score by **deleting** all the other scores.
(3) You are **fairly confident** in your assessment. It is possible that you did not understand some parts of the submission or that you are unfamiliar with topic.