



Master Thesis / Research Thesis

Title	Study of Intra-Class Splitting
Description	<p>Last year, we proposed intra-class splitting (ICS) to solve one-class classification and open set recognition problems. Although ICS has achieved state-of-the-art performance in both fields, it lacks mathematical interpretation. Therefore, in this project, we start with the normal ICS methods and study different implementation possibilities of ICS. Subsequently, we compare ICS with other related terms in the literature such as label smoothing and intra-variance. Moreover, we also plan to conduct psychophysical experiments to obtain deeper insights of ICS.</p> <p>Considering the workload, it might be more possible to let this project be a master thesis. Nonetheless, having a research thesis on this topic is still possible according to one's programming skills and backgrounds. Related papers can be found by: https://www.iss.uni-stuttgart.de/institut/team/Liao/. Please take a look at these papers before you apply for this project.</p> <p>In general, the overview of this project is as follows:</p>
Prerequisites	<ul style="list-style-type: none"> • Highly motivated for research in new area • (Mandatory) Advanced Python skills • (Mandatory) Experience with TensorFlow or Keras or PyTorch • (Mandatory) Knowledge in machine learning • Knowledge in anomaly detection or ICS is beneficial
Begin	April or May
Duration	6 months (MA) or 3 months (FA)
Language	English
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