Uncertainty Estimation in Selective Classification on Skin Lesions

AC40001

Mid-term Report

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# **Summary and Aims**

Machine Learning Algorithims have been shown to perform exceptionally well on the classification of skin cancer, matching the accuracy of experts in the field[1]. Due to the nature of the medical domain being safety critical, it is important that any predictions made by these algorithms have a quantifiable measure of uncertainty and correctly consider the cost of misclassifying certain Skin Lesions.

I hope to investigate epistemic uncertainty in Machine learning Algorithms by comparing a baseline Softmax response against Yarin Gal’s Monte Carlo Dropout method, using Entropy across predictions as a measure for uncertainty.

# **Background Research**