Grand Challenge: A Real-Time Multi-label Classifier for High-Speed Streaming Data

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ABSTRACT

The winners of the challenge are announced during the conference. The 2019 DEBS Grand Challenge focuses on the application of machine learning to LiDAR data. The goal of the challenge is to perform classification of objects in different scenes surveyed by the LiDAR. The applications of LIDAR and object detection go well beyond autonomous vehicles and are suitable for use in agriculture, waterway maintenance and flood prevention, and construction.

In this paper, we describe our implementation for ACM DEBS 2019 Grand Challenge for a high-speed online neural network classifier that is highly customized to classify objects from streaming data in real-time.

CCS CONCEPTS

• **Information Systems** → **Machine Learning**; *Data Stream.*

KEYWORDS

neural networks, multi-label classification, data stream processing

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1 INTRODUCTION

Many real-world applications include multi-lable data and require real-time high-speed multi-lable classification. In most application, it is crucial to proactively react based on classification results. For example, in autonomous car application it is important to detect surrounding cars and pedestrians in real-time to send reaction signals.

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2 DATA STREAMS

3 ARCHITECTURE

4 CONCLUSION

5 EVALUATION