

University of Science and Technology of Hanoi

Bachelor's Thesis in Information and Communication Technology

Application of Machine Learning in Credit Card Fraud Detection

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Abstract

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1 Introduction

1.1 Hand Gesture Recognition

1.2 Aim of the project

1.3 Overview

This section provides an overall overview of the content entailed in each section. In section 2, we discuss relevant literature in the current field of research, focusing on the application of hand gesture recognition system. Section 3 presents the methodology including the data processing steps, tools and libraries used, the model architecture as well as the training of the model. In Section 4, we describe model's evaluation metrics - mean average precision (mAP) score and provide a detailed discussion on the the the result and application of our project. For the purpose of further evaluation, we performed detection on a new set of data and also using live detection. The final section 5 presents a brief conclusion of our project.

2 Literature Review

3 Method

4 Results

4.1 Evaluation Metric

4.2 Performance

4.3 Discussion

Overall, the models we chose achieved our main criteria, real time detection and high accuracy. Both YOLOv4 and YOLOv5 perform similarly, with the average precision on unknown test data achieving 0.75. This result means the system should perform accurately and reliably.

4.3.1 Difficulties

5 Conclusion

6 References