ISTANBUL TECHNICAL UNIVERSITY
FACULTY OF COMPUTER AND INFORMATICS

COFFEE RATING WITH REINFORCEMENT LEARNING

Graduation Project

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Statement of Authenticity

I hereby declare that in this study

1. all the content influenced from external references are cited clearly and in detail,
2. and all the remaining sections, especially the theoretical studies and implemented software that constitute the fundamental essence of this study is originated by my individual authenticity.

İstanbul, June 22, 2022

Savaş DENLİ

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Coffee Rating with Reinforcement Learning

(Summary)

Coffee is one of the most popular drinks in the world. More than 2.25 billion cups of coffee are consumed every day in the world. Many people drink coffee to get energy, improve productivity and focus or just socialize. On the other hand, there are coffee lovers who think that it is as an art, a science and a culture.

While there are coffee lovers who have studied coffee for many years, have done research, drank thousands of coffee and tried many recipes, and can evaluate a coffee just by looking at its appearance, there are also people who have just discovered the love of coffee, which is at the beginning of these stages, and are interested in trying new places, new recipes and new coffees. Coffee lovers who are in our first category, that is, people we will call coffee gourmets, when they find a good coffee in any place, want to share it with other coffee-lover friends, and also want others to try the experimental coffees they make with their own formulas. On the other hand, novice coffee lovers often want to get expert opinion from someone they see as a gourmet, and they want to share the appearance of the coffee they drink and get information to find out if it is a good coffee.

The main purpose of this project is to create a model that predicts whether a coffee is good or not from its appearance, using the experiences of coffee gourmets and given ratings to coffees through the application. After talking coffee lovers those experienced in this area and doing literature survey, I realized this cannot be done by only training the model with a data-set. Because there is no a data-set that contains coffee images classified as good and bad. Therefore, we will develop our model by using Reinforcement Learning through our mobile application, which will become a social platform.

Users will be able to take photos of the coffees they drink in different places, rate them and mark the place where they are, thus creating a coffee diary where they can find out where they drink and how many points they gave. Users will also be able to upload their own coffee formulas and other users will be able to try and score them. Our model, which uses Reinforcement Learning, will also be a coffee gourmet who can understand whether a coffee is good or not in an environment where these data will continuously accumulate over time.