

Theme/Title Bachelor Thesis AGREEMENT

Student's first name and last name: Iancu Gheorghe-Aurelian

Specialization: Informatics English section

Class academic years: 3

First name and last name of the scientific advisor: Bocicor Maria-Iuliana

Thesis domain: Machine Learning

Thesis title: Smart Flavor Pairing System for Culinary Innovation

Bachelor thesis topic description:

The topic of the Bachelor thesis will be described, minimum 2-3 paragraphs in natural language.

My bachelor thesis idea began with a question I often asked myself: „How can I improve my dish?“. After conducting research, I discovered that each ingredient we use in our dishes contains different chemicals that contribute to their flavor. Well, because of that there exist some ingredients that seem to have a natural affinity for one another while others just don't match. You can say that 2 ingredients are complementary when they share key aroma components. A single ingredient may contain several dozens of different aroma molecules, though in reality, only the most dominant compounds are actually responsible for its signature scent.

The main idea of the application would be to suggest users additions of ingredients for their dishes that already exist using flavor pairings in order to enhance them under the form of a recommender. The idea is to have a database with recipes from which the user can choose some favorites and based on those the application should recommend some improvements based on the best flavor pairings.

This idea could also be extended to suggest the improvements based on the cuisine to which the respective food tends to belong. By looking into the unique flavors and classic

combinations found in various cuisines, the app could offer personalized tips to take dishes to the next level, suiting your taste preferences and culinary heritage.

References:

1. Roy, D., Dutta, M. A systematic review and research perspective on recommender systems. J Big Data 9, 59 (2022). <https://doi.org/10.1186/s40537-022-00592-5>
2. Garg N, Sethupathy A, Tuwani R, Nk R, Dokania S, Iyer A, Gupta A, Agrawal S, Singh N, Shukla S, Kathuria K, Badhwar R, Kanji R, Jain A, Kaur A, Nagpal R, Bagler G. FlavorDB: a database of flavor molecules. Nucleic Acids Res. 2018 Jan 4; <https://doi.org/10.1093/nar/gkx957>
3. F.O. Isinkaye, Y.O. Folajimi, B.A. Ojokoh, Recommendation systems: Principles, methods and evaluation, Egyptian Informatics Journal, Volume 16, Issue 3, 2015, Pages 261-273, <https://doi.org/10.1016/j.eij.2015.06.005>.

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Student signature,



Scientific coordinator signature,

