

Integration of a Proprietary Software Application and a Multimodal LLM for Enhanced Nutritional Guidance ★

Victor Iapăscurtă ^{1,2}, Dinu Țurcanu ¹, Rodica Siminiuc ¹

¹ Technical University of Moldova, 168 Ștefan cel Mare av., MD-2004, Chișinău, R. of Moldova, victor.iapascurta@doctorat.utm.md, dinu.turcanu@adm.utm.md, , rodica.siminiuc@adm.utm.md, ORCID: 0000-0002-4540-7045, 0000-0001-5540-4246, 0000-0003-4257-1840, www.utm.md

²N.Testemitanu University of Medicine and Pharmacy, 165 Ștefan cel Mare av., MD-2004, Chișinău, R. of Moldova, victor.iapascurta@usmf.md, www.usmf.md

Keywords: software application; nutrition; artificial intelligence; large language model

Abstract. In the realm of health and wellness, the integration of data-driven technology and artificial intelligence (AI) has opened up new possibilities for personalized and data-driven approaches. HN-Assistant, a software application designed to analyze an individual's nutritional state and provide tailored recommendations, offers a powerful tool for promoting healthy eating habits. The HN-Assistant can also analyze how good a food product is at covering the estimated nutrient requirements. However, when combined with the capabilities of advanced AI assistants based on LLMs, the potential for comprehensive and insightful nutritional guidance is taken to new heights. This paper describes an attempt at integrating the proprietary software application HN-Assistant with GPT-4o to empower final users to make better nutritional decisions. The application was built in R programming language using the Shiny package, and the interaction between HN-Assistant and GPT-4o is based on an API in Python.

★ award-winning abstract