



Brno, 10 October, 2023

To whom it may concern

This letter serves to confirm that Hitalo Cesar Alves, student of State University of Campinas (UNICAMP), Campinas-SP, Brazil, had successfully completed assignments during his remote internship held at the Department of Computer Systems of the Faculty of Information Technology, Brno University of Technology. The period of remote cooperation was from January, 6 to March, 31, 2023.

During his work, he had demonstrated a high interest in the topic, actively studied the material provided by the supervisor and other scientific articles found by his own research. The tasks he performed covered the study of advanced optimization methods for solving Traveling Salesman Problem. The goal was to develop a software for educational purposes and future research in this area. Hitalo Alves implemented a GUI-based tool allowing the visualization and comparison of selected optimization algorithms (Genetic Algorithm and Particle Swarm Optimization) and provided a detailed documentation. I can state, as a supervisor, that the student proved an outstanding performance and self-dependent capability with respect to the analysis, research and application of previously acquired knowledge in the given area. I am very pleased with the work that he had accomplished according to the assessment. Therefore I would certainly recommend him for other engineering projects.

Sincerely,

Dr. Michal Bidlo

supervisor

<https://www.fit.vut.cz/person/bidlo/>