Supervisor's statement

Student: Ing. Anežka Kazíková

Defense of dissertation thesis, FAI, TBU in Zlin, 26.10.2022

Ing. Anežka Kazíková started her Ph.D. studies in September 2015 under my guidance and with the help of consultations of Ing. Michal Pluháček, Ph.D.

However, the cooperation is actually much longer, as the student under my supervision defended her bachelor thesis in 2013 in the field of programming implementation of a selected evolutionary algorithm, and then in 2015, her master thesis thematically related to the defended dissertation, i.e., on the topic of swarm algorithms.

Thus, from the beginning of her studies, she has shown interest in more profound knowledge in the field of basic research on evolutionary computation techniques, analysis of their behavior and functionality, methodological procedures for their design and modification, and above all, proper benchmarking. She also became crucial in establishing the A.I.Lab, under the Department of Informatics and Artificial Intelligence at FAI/UTB. Her main area of interest was the so-called swarm algorithms.

The competence of the student Ing. Anežka Kazíková undoubtedly includes excellent programming skills, critical thinking, precise mastery of statistical validation of results and data, and careful consideration of many sensitivity analyses to verify the proposed original approaches in the field of computational intelligence for solving optimization problems. Undoubtedly, the visualization of results and graphical presentation of research outputs are also strengths of the student.

Ing. Anežka Kazíková has always willingly and actively cooperated with colleagues from other universities and with foreign experts, which was reflected in several joint publications and cooperation on the preparation of several project proposals (GAČR Lead Agency CEUS / Weave). She has participated and is currently actively involved as a team member in several projects (including IGA projects).

Publication activities of the student are at an above-standard level, as evidenced by the number of high-quality conference papers and journal publications (including prestigious titles such as IEEE TEVC). Her research publications and results are recognized in the community, as demonstrated by the increasing citation response.

I consider this dissertation to be the basis for theoretical and simulation-verified practical approaches in the area of swarm algorithm design methodology for analyzing their behavior, benchmarking, and efficiently solving a broad portfolio of optimization problems. The work suggests new innovative approaches and directions that are original, as well as explicitly defines possible critical points and limitations in the design of metaheuristic algorithms and their benchmarking. Thus, I recommend the submitted dissertation for defense. Formal checking has confirmed that the dissertation is not plagiarized.

In Zlin, 24.10.2022,

doc. Ing. Roman Šenkeřík, Ph.D.
m.p.