The Vienna Graduate School on Computational Optimization (VGSCO) is a joint research and training program of the University of Vienna, TU Wien, IST Austria and Vienna University of Economics and Business funded by the Austrian Science Funds (FWF). Its main goal is to give PhD candidates a comprehensive training in different areas of optimization with special emphasis on algorithmic and numeric aspects. It fosters scientific collaboration between the PhD students and their advisors representing a broad spectrum of topics and areas in the field of optimization.

The VGSCO currently announces a PhD position in the area of

**Automated Algorithm Selection and Configuration**

(TU Wien, Supervisor: Nysret Musliu)

The Algorithm Selection Problem addresses the problem of determining which of the available algorithms is most appropriate to solving a particular problem instance. In addition, many algorithms and solvers include various parameters that influence the quality of the final solutions. It is very important to automatically identify the best algorithm and parameters (algorithm configuration) when solving various problem instances.

The aim of this project is to investigate improvements in automated algorithm selection/configuration for real-world combinatorial optimization problems. The topics of interest include the identification of innovative and general features with an essential impact on the performance of algorithms, the investigation of powerful machine learning techniques such as deep learning for algorithm selection, the development of new algorithm configuration techniques and the investigation of new possibilities for automated algorithm design based on hyper-heuristic techniques. The new methods will be applied to the challenging large-scale planning and scheduling problems.

The candidates are expected to have a solid background in algorithms and data structures as well as strong problem-solving and programming skills.

The advertised position is associated with the Faculty of Informatics of TU Wien, the Technical University of Vienna, in the Research Group on Databases and Artificial Intelligence. The successful candidate will become a member of the Vienna Graduate School on Computational Optimization. The duration of the employment is of 3 years with possibility of extension. The extent of employment is 30 hours per week. The annual gross salary is approximately 31,000 €. The planned start of the position is autumn 2020.

**Application Requirements and Procedure**

The candidates must have a master degree (or equivalent) in Computer Science or Mathematics at the moment the PhD position starts. The application documents should contain a letter of motivation; the scientific CV with publication list, if available; higher education certificates/diplomas; the diploma/master thesis and letter(s) of recommendation. Applications have to be submitted at: vgSCO.univie.ac.at/positions/application. The deadline for applications is June 15, 2020.