

Project 174021

Automated reasoning and data mining

Research within the project is focused on the development and applications of automated theorem provers, formal theorem proving and data mining techniques. In the field of automated theorem proving, several theorem provers are being developed: a SAT solver ArgoSAT, a SMT solver ArgoSMT and a coherent logic prover ArgoCLP. The solvers ArgoSAT and ArgoSMT will be applied on solving important practical problems of planning, optimization and software verification. The ArgoCLP prover will be applied on formalization of geometry, on automated solving of constructive problems, and also within the geometry software GCLC. In the field of formal theorem proving, we plan to develop verified computer programs and to formalize some mathematical theories. We plan to develop and apply novel techniques for data mining, suitable for automated reasoning, but also for some other areas, most notably bioinformatics. These techniques will be used for improving efficiency and for evaluation of automated theorem provers, for analysis of genome and protein sequences and for prediction of some neurological diseases. The presented plan is a sequel of the research conducted within the current research grant 144030 that lasted from 2006. till 2010.

Project members from Faculty of Mathematics:

dr Gordana Pavlović-Lažetić, full professor
dr Miodrag Živković, full professor
dr Predrag Janičić, associate professor (rukovodilac projekta)
dr Saša Malkov, assistant professor
dr Filip Marić, assistant professor
dr Nenad Mitić, assistant professor
mr Jelena Graovac, teaching assistant
mr Mladen Nikolić, teaching assistant
mr Sana Stojanović, teaching assistant
mr Milena Vujošević-Janičić, teaching assistant
Milan Banković, teaching assistant
Jovana Kovačević, teaching assistant
Vesna Pavlović, teaching assistant

Project members from Institute for general and physical chemistry:

dr Miloš Beljanski, senior research fellow
dr Mirjana Pavlović, research fellow