СЕКЦИЯ

„АЛГЕБРА И ЛОГИКА”

Драги колеги,
На 28 октомври 2022 г. (петък) от 13:00 часа ще се проведе дистанционно заседание на семинара по „Алгебра и логика”.
Доклад на тема

Gabbay Separation for the Duration Calculus

ще изнесе Димитър Гелев.

Семинарът ще се проведе посредством платформата **Zoom** и всеки желаещ може да се присъедини като последва линка, зададен на страницата на семинара.

От секция „Алгебра и логика” на ИМИ – БАН

http://www.math.bas.bg/algebra/seminarAiL/

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Abstract

Gabbay's separation theorem about linear temporal logic (LTL) with past has proved to be one of the most useful theoretical results in temporal logic. Is expressive power ultimately affected, if past constructs are not allowed in the scope of future ones, or vice versa? Separation implies that it does not, and also provides a technically convenient normal form for temporal conditions.

Interval Temporal Logic (ITL) and the Duration Calculus (DC) are interval-based logics. Unlike LTL, they are based on modalities which allow reference to subintervals of the reference intervals only. Adding the neighbourhood modalities, which are written $\langle A \rangle$ and $\langle A^{-1} \rangle$ in the notation stemming from Allen's system of interval relations, enables reference outside the reference interval and this way makes temporal separation relevant. In this talk I propose a DC analogue of a separation theorem for discrete time ITL which I established in a joint work with Ben Moszkowski.

Both theorems are analogous to Gabbay's pioneering result and can be spelled out in similar terms, but the technical differences are significant. I take the opportunity to not repeat my previous talk on separation for ITL and instead discuss some aspects of the proofs for both the ITL and the DC theorems. Interestingly, these theorems admit proofs that are based on syntactical transformations of the formulas in the respective logics, and are therefore compositional and very intuitive. I will focus on the common and the distinct features of the proofs, and on some side corollaries.