

PhD research topic proposal
BME, Doctoral School of Mathematics and Computer Science

Name of supervisor :

Gábor Ivanyos

Degree:

DSc

Title of the topic:

Graphs, algebra and algorithms

Short description:

The broad area of study covers analogies between graph theoretic concepts and those from algebra, with emphasis on algorithmic aspects, including (computational) problems regarding various collections of matrices, e.g., associative and non-associative matrix algebras, quantitative and structural invariants of tuples of matrices. Importance of such investigations is demonstrated by a recent breakthrough in (computational) the theory of polynomial invariants matrix tuples with connections to surprisingly various areas of mathematics such as theory of non-commutative fields, geometry, analysis, combinatorics and optimization.

Requirements:

Msc/diploma in mathematics, physics, computer science or related disciplines; solid background in algebra, skills in reading specialized literature in English.

Contact:

Phone:

+36-1-27961764

E-mail:

Gabor.Ivanyos@sztaki.hu

Place of work:

BME Mathematical Institute, Department of Algebra

Statement: *The conditions of the research above are satisfied, the theme is confirmed by the Head of the Department/Institute*