

LUIAS Distinguished Lecture

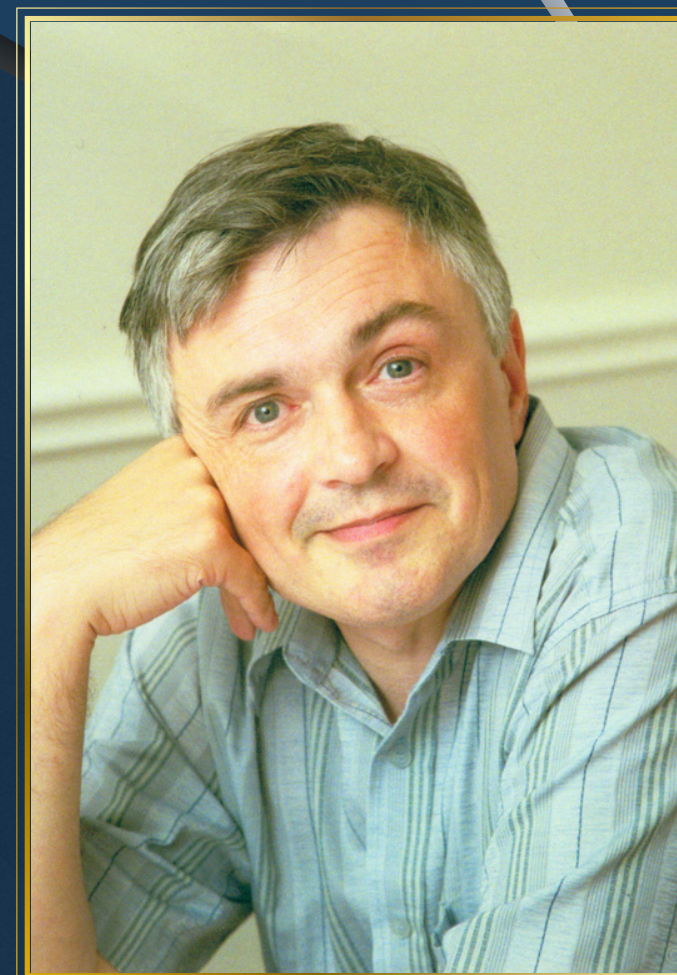
Theory and Applications of Tensor Decompositions

Speaker

Professor Eugene TYRTYSHNIKOV

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Professor and Chairman, Lomonosov Moscow State University
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Date: 25 March 2026 Time: 11:15AM - 12:30PM

**Venue: MBG01, Patrick Lee Wan Keung
Academic Building**

Mode: Face-to-face

Abstract

Tensor decompositions become a very popular tool for modelling data in many application problems. We discuss some still open issues about the rank-bounded sets for the canonical polyadic decomposition and new developments of cross-approximation approach to optimisation problems with the tensor-train model.

References:

1. Tyrtysnikov E., Tensor decompositions and rank increment conjecture, Russian Journal of Numerical Analysis and Mathematical Modelling, 25 (4), 239–246 (2020).
2. Zheltkov D., Tyrtysnikov E., Global optimisation based on TT-decomposition, Russian Journal of Numerical Analysis and Mathematical Modelling, 25 (4), 247–261 (2020).
3. Oseledets I., Tyrtysnikov E., TT-cross approximation for multidimensional arrays, Linear Algebra Appl., 432, pp. 70–88 (2010).

Biography

Prof Eugene Tyrtysnikov has been an Academician of the Russian Academy of Sciences since 2016 and is a Professor and Chairman at the Lomonosov Moscow State University. He served as the Director of Marchuk Institute of Numerical Mathematics of Russian Academy of Sciences. He was recognised as the Best Teacher of the Year at the Lomonosov Moscow State University in 2014 and received the Gold Medal "For Great Contributions in Mathematics" from the Sobolev Institute of Mathematics in 2019. In 2023, he was awarded the Sber Scientific Prize in the nomination "Digital Universe" and has become Yangtze Professor at SMBU, Shenzhen since 2024.

Prof Tyrtysnikov is the Editor-in-chief of Journal of Computational Mathematics and Mathematical Physics. He served as an Associate editor of Linear Algebra and Its Applications from 2000 to 2023. He is a member of editorial boards of Calcolo, Sbornik Mathematics, Russian Journal of Numerical Analysis and Mathematical Modelling, and the Syberian Journal of Numerical Mathematics. He was also a member of ILAS Board from 2014 to 2015.

Prof Tyrtysnikov's main results include the matrix framework for the analysis of spectra distribution of Toeplitz and related matrices, maximal volume concept for low-rank approximation, cross row-column approximations and tensor-train algorithms for multidimensional problems.

Enquiries

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