Be'eri Greenfeld

University of Washington

When is an almost-solution, almost a solution?

June 6–13, 2025

Abstract:

Suppose a given tuple of matrices $A_1, ..., A_n$ "almost" satisfies a polynomial equation $f(X_1, ..., X_n)$, in the sense that $f(A_1, ..., A_n)$ has small rank. When can we perturb $A_1, ..., A_n$ by small-rank matrices to obtain a genuine solution of f? We explore this stability question, along with related problems, using representation-theoretic techniques and tools from asymptotic metric algebra. Connections to amenability and soficity of associative and Lie algebras are also discussed.