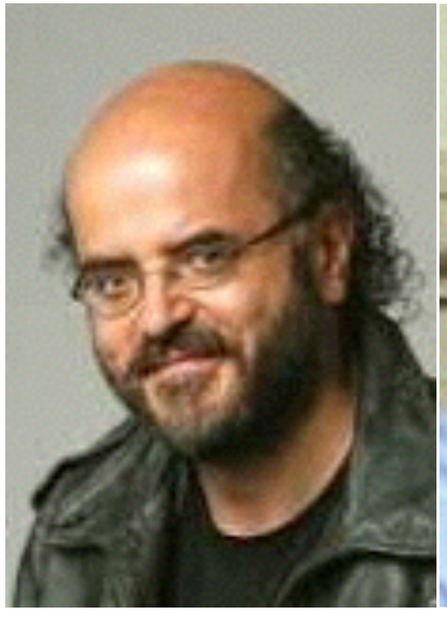
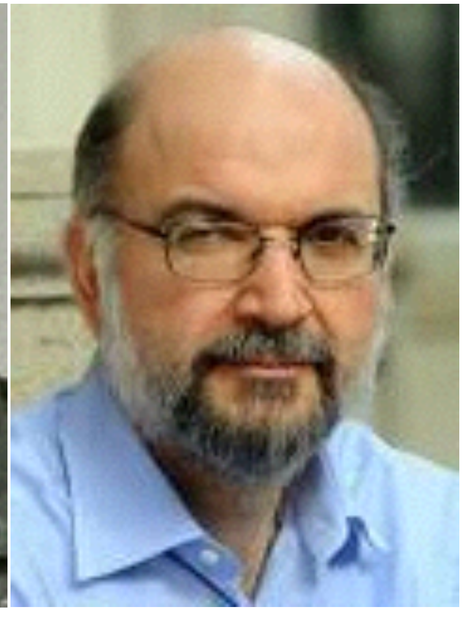
Maxcut

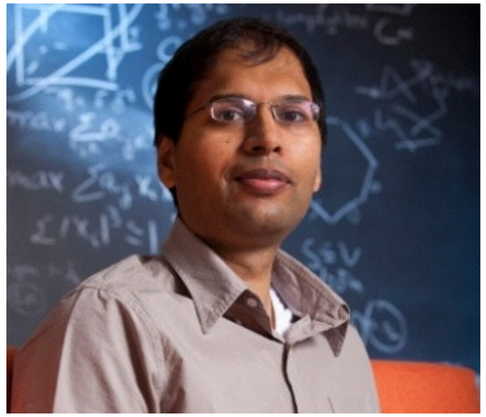
Negative results

KARPfest80





If the Unique Games Conjecture holds then approximating MaxCut better than 0.878... is NP-hard



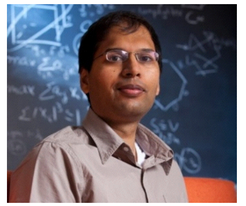

Subash Khot

Guy Kindler

Elchanan Mossel

Ryan O'Donnell

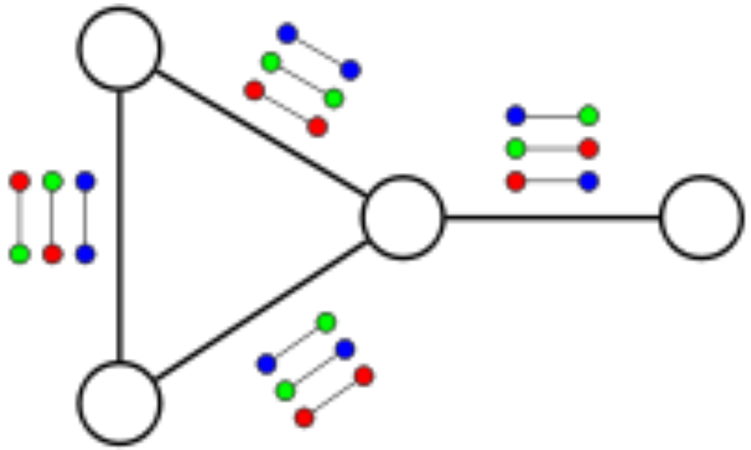
UGC: the following problem is (?) NP-hard

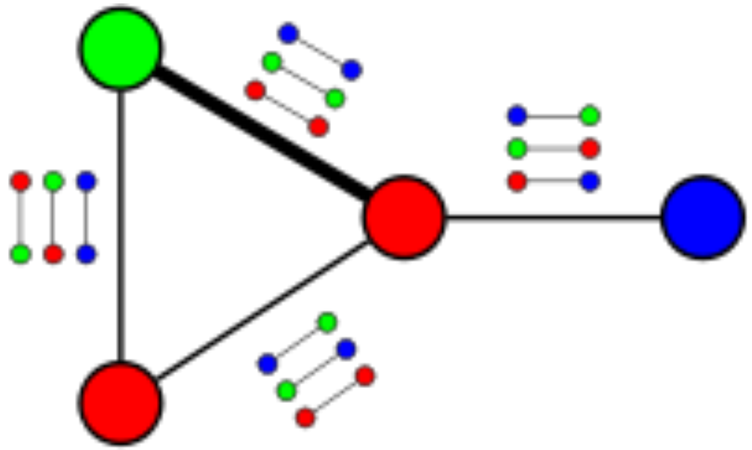


Input:

- graph with for each edge {u,v}, permutation rule "if u is red then must be green; if u is green then v must be blue; if u is blue than v must be yellow..." such that:
  - either there is a coloring satisfying 90% if the edge rules,
  - or no coloring satisfies more than 10% of the edges rules

Output: decide which of the two holds!





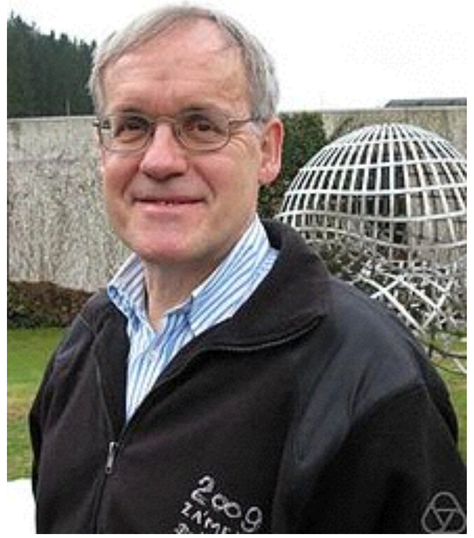
Positive results

Ellipsoid method ... for SDPs

Leonid Khachiyan

Martin Grötschel

László Lovász



Alexander Schrijver

SDP relaxation of MaxCut

Charles Delorme

Svatopluk Poljak

Randomized rounding and .878... approx

Michel Goemans

David Williamson

Maxcut