

Dynamic Matching with Better-than-2 Approx in Polylog Update Time

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Abstract:

We present dynamic algorithms with polylogarithmic update time for estimating the size of the maximum matching of a graph undergoing edge insertions and deletions with approximation ratio strictly better than 2. This answers in the affirmative the value version of a major open question, repeatedly asked in the dynamic graph algorithms literature.

Based on an upcoming SODA 2023 best paper, joint with Sayan Bhattacharya, Peter Kiss and Thatchaphol Saranurak..

Short Bio:

David is a visiting researcher at Google Research, and will be joining the Technion in the next academic year as a senior lecturer. Prior to coming to Google, David completed a postdoc at Stanford University, a PhD at Carnegie Mellon University, and an MSc and BSc (summa cum laude) at the Technion. His research focuses broadly on algorithms dealing with uncertain or evolving inputs, including online, dynamic and distributed algorithms. David has received a number of honors and awards, including awards for excellence in teaching, a Motwani postdoctoral fellowship, and (as mentioned above) a SODA best paper award. He is very much looking forward to coming home to the Technion.