

MATEMATIČNI KOLOKVIJI

Obstacle Avoidance

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Abstract: Obstacle-avoiding paths are widely studied in computational geometry and graph theory as design tools in various applications such as motion planning in robotics and monitoring using sensor networks, among others. In this talk we describe recent progress on some obstacle-avoidance questions of the following form: what is the minimum number of obstacles we must remove to reach target point t from start point s , and what is the maximum number of obstacles we can remove while blocking all $s - t$ paths. We also discuss these reachability and blocking questions for multiple $s - t$ pairs and under some conditions design algorithms to find the shortest-length path realizable by the removal of at most k obstacles.

Short bio about the speaker: Prof. Subhash Suri holds a Ph.D. in Computer Science from The Johns Hopkins University. He was a Member of the Technical Staff at Bellcore from 1987 to 1994, and an associate professor of computer science at Washington University in St. Louis from 1994 to 2000. Currently, he is a distinguished professor of Computer Science at the University of California, Santa Barbara, where he also served as the department chair from 2011 to 2014. His research interests include computational geometry, networking, sensor networks, robotics, and computational economics. Suri is a fellow of the ACM, a fellow of the IEEE, and a fellow of the AAAS.

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