



## Department of Computer Science & NJIT Cybersecurity Research Center

### Gödel Laureates Distinguished Lecture

Vantage Points and Sign Patterns

**Noga Alon**

Princeton University

**Hosts: Shantanu Sharma and Vincent Oria**

**Date:** Wednesday, November 12, 2025

**Coffee:** 2:15 PM – 2:30 PM

**Time:** 2:30 PM – 3:30 PM

**Location:** GITC 1400 (1st floor Seminar Lecture Hall)

**Zoom Link:** <https://njit-edu.zoom.us/j/95903616720?pwd=UrsFtzLWaZFP0ePgVmqLxAOES8ECNn.1>

**Abstract:**

Motivated by a possible application in Social Choice, I will discuss a recent work with Defant, Kravitz and Zhu that studies the number of ways to order points in the plane or in higher dimension according to the sum of their (Euclidean) distances from chosen vantage points.

A crucial mathematical tool here is an extension of results of Milnor and Warren about sign patterns of real polynomials, that have been used in the study of several problems in Discrete Mathematics and theoretical Computer Science, to a version that deals with sign patterns of more general functions.

**Bio:**



Noga Alon is a Professor of Mathematics at Princeton University and a Professor Emeritus of Mathematics and Computer Science at Tel Aviv University, Israel. He works in Discrete Mathematics and its applications in Theoretical Computer Science, Information Theory, Combinatorial Geometry, and Combinatorial Number Theory.

He is a member of the Israel Academy of Sciences and Humanities and of the Academia Europaea, and an honorary member of the Hungarian Academy of Sciences. He received several awards, three recent ones are the 2022 Shaw Prize in Mathematical Sciences, the 2022 Knuth Prize for outstanding contributions to the foundations of computer science and the 2024 Wolf Prize in Mathematics.