

Many Cheerful Facts

Organizer: Alvin Kerber

Wednesday Feb 15, 3-4 PM, 891 Evans

Speaker: Will Johnson, UC Berkeley

Title: *How to beat most people at Dots-and-Boxes*

Dots-and-Boxes is a popular paper-and-pencil game played on a grid of dots. Two players take turns drawing lines between the dots, getting points for enclosing squares. This game admits no general solution, assuming $P \neq NP$. Nevertheless, Berlekamp showed that certain positions could be analyzed using the combinatorial game theory of impartial games. In this talk, we will discuss the basic rules and strategy of Dots-and-Boxes, the Sprague-Grundy theory of impartial games, and how Dots-and-Boxes can be approximated by an impartial game.

I am the very model of a modern Major-General,
I've information vegetable, animal, and mineral,
I know the kings of England, and I quote the flights historical
From Marathon to Waterloo, in order categorical;
I'm very well acquainted, too, with matters mathematical,
I understand equations, both the simple and quadratical,
About binomial theorem I'm teeming with a lot o' news,
With many cheerful facts about the square of the hypotenuse.
I'm very good at integral and differential calculus;
I know the scientific names of beings animalculous:
In short, in matters vegetable, animal, and mineral,
I am the very model of a modern Major-General.