Graphs and Games: the Mathematics of Richard Nowakowski (Part II)

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ANTHONY BONATO, Ryerson University

Games and graphs: the legacy of RJN

Richard Nowakowski has had (and continues to have!) an indelible impact on both graph theory and combinatorial game theory, amassing a large catalogue of results and a sizeable group of students. I summarize a few of his accomplishments, focusing on personal stories and our joint work—especially with regards to our book The Game of Cops and Robbers on Graphs.

JASON BROWN, Dalhousie University

My Streak of Independence with Richard

Over the years Richard and I have worked together but independently on a variety of graph problems. In this talk I will share some of my favourite ideas and results, including some well-covered topics. And for independence polynomials, I'll get right to the roots of the issue.

CHRIS DUFFY, Dalhousie University

Shapley–Shubik Power Index as a Model for Spread of Influence in a Network

The Shapley–Shubik power index provides a model to measure voter power in democratic institutions. Intuitively, voters who make up a larger majority each hold less relative power than those who make up a slim majority. This index has been used to study a variety of democratic institutions, including proposed amendments to the Canadian Constitution. Using power index we study the spread of power and influence in a network. We find that both network topology and initial distribution of voting position impact long-term behaviour of the system. For particular families of graphs we observe a connection with the cellular automata.

GENA HAHN, Université de Montréal

Lexicographic product of graphs revisited

A bit of history, an outline of the progress on the part avoided in the past 60 years.

PAWEL PRALAT, Ryerson University

A probabilistic version of the game of Zombies and Survivors on graphs

In the probabilistic version of the game of Zombies and Survivors, a set of zombies attempts to eat a lone survivor loose on a given graph. The zombies randomly choose their initial location. At each round, they move to the neighbouring vertex that minimizes the distance to the survivor (chosen uniformly at random). The survivor attempts to escape from the zombies by moving to a neighbouring vertex or staying on his current vertex. The zombies win if eventually one of them eats the survivor by landing on their vertex; otherwise, the survivor wins.