

Editorial: Scrabble, Lamplighter and the Computer Olympiad

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The first scientific contribution to this issue is *Heuri: A Scrabble Playing Engine Using a Probability-Based Heuristic* by Alejandro González Romero, René Alquézar Mancho, Arturo Ramírez Flores, Francisco González Acuña and Ian García Olmedo. The authors propose a novel Scrabble move generator based on anagrams as well as a novel Computer Scrabble engine called Heuri. It uses heuristic evaluation functions based on probabilities. On the contrary of other popular Scrabble engines it does not use simulations. Heuri is quite good at fishing (e.g. increasing the probability of a bingo at next move). It has beaten Spanish World Champions Scrabble players and it is particularly good in Spanish even if it can also play in English and in French. The authors think it could be further improved using search, opponent modeling and refined heuristics.

The second scientific contribution is *The Algebraic Solvability of the Novel Lamplighter Puzzle* by Connor Gregor, Daniel Ashlock and Allan Willms. A new puzzle is defined as the lamplighter puzzle. It can be seen as rotating the hand of a watch with restrictions on the possible rotations, as well as lighting the cell associated to the position of the hand. The goal is to reach a given state with a sequence of moves. The lamplighter puzzle is defined more generally in the paper and its solvability is analyzed. Multiple theorems, lemmas and remarks are provided related to the solvability of the standard puzzle. Following this in depth analysis a polynomial algorithm is given for standard instances. However non standard instances may still require a heuristic search. In the conclusions the author propose many variations and future work.

Hiroyuki Iida, Jonathan Schaeffer and I-Chen Wu report on the 2021 Computer Olympiad and question about whether future Olympiads should be online or in-person.

The latest SSDF rating list is also given at the end of this issue.

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