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Conway's Reverse Game of Life

Mon 14 Oct 2013 – Sun 2 Mar 2014 (16 months ago)

Dashboard

Home
| Data
| Make a submission

Information
| Description
| Evaluation
| Rules
| Prizes

Forum

Leaderboard
| Public
| Private

My Team
| GitHub

My Submissions

Leaderboard

1. Miranda
2. Martin O'Leary
3. Cromarty Rockall
4. jgans
5. Crimson4Life
6. Glen
7. Pear Attack
8. Coalition of the Awexome for improved space travel for dinosaurs
9. mushtaq
10. Landslide

Forum (20 topics)

GoL explained by John Conway
16 months ago

Congratulations Miranda!
16 months ago

Alternative scoring
16 months ago

RGL 2.0
16 months ago

Competition Details   »   Get the Data   »   Make a submission

Data Files

File Name	Available Formats
sampleSubmission.csv	**.zip (244.19 kb)**
test.csv	**.zip (1.91 mb)**
train.csv	**.zip (3.69 mb)**

We have provided 50,000 training games and 50,000 test games, whose starting board you must predict. Each board is 20x20, for a total of 400 cells per board. **Values are listed in a column-wise order.** You are free to create more training games if you desire.

The provided variables are:

id - each game has an id
delta - the number of steps between the start and stop boards
start.1 - row 1, column 1 of the game's starting board
start.2 - row 2, column 1 of the game's starting board
...
stop.1 - row 1, column 1 of the game's stopping board
...

Your test-set predictions should be the starting board at delta steps before the stopping board. The games were created by the following procedure:

1.   An initial board was chosen by filling the board with a random density between 1% full (mostly zeros) and 99% full (mostly ones).

2.   This initial board was evolved 5 steps.

3.   The starting board's state was recorded after the 5 "warmup steps". These are the values in the start variables.

4.   The starting board was then evolved delta steps. Delta was chosen to be uniformly random between 1 and 5. If the stopping board was empty, the game was discarded.

5.   The stopping board's state was then recorded. These are the values in the stop variables.

FAQs

many to one?
16 months ago

Simulation Approach
16 months ago

teams

players

entries

Why the need for warmup steps? The transition from an initial random board to the second step can be quite "nonlinear" and dramatic. For example, if a board is mostly alive at the first step, it will be mostly dead on the second. We allow the game to warmup for five steps in order to let the cells calm down and settle into a more "life-like" state.

Can I predict any valid state? Unfortunately, we are asking you to predict the single valid state the we started with. If this competition is popular and our server bill doesn't explode, it's possible we will code a game-of-life evaluation metric that would allow any valid start state to score well if it is similar to the end state.

The Game of Life loses information over time. What gives? Correct, this is a many-to-one problem (many starting states can lead to the same stopping state). For example, many boards that are sparse at the start will end up in the same state (and you will see this in the data). However, over short time scales we expect this to be a minor issue. The largest step back in time in this competition is 5, which we hope is not so far that the degeneracy becomes an issue.

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