Boolean Gene Networks

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Overview

- Gene network, called Boolean Network.
- List of nodes, network of many genes that are either on or off, (1 or 0)
- Each gene regulated by three local genes. Total of 8 combinations, combination makes rules.
- Seeing effects of a "mutation," change in rules
- Plot gene network and two state transition diagrams

Functions

Genestmdriver

Stm = genestm(wire, rule)

B = d2b(r,c)

D = b2d(bin)

Genestmdriver

- No arguments
- Sets wire and rule vector
- Draws gene network, using biograph
- Calls genestm
- Plots State Transition Diagram
- Then change one rule

Stm = genestm(wire,rule)

- Takes wire matrix and rule vector and returns associated State Transition Matrix
- Figures out each gene's next binary value
- Uses d2b and b2d
- D2b : decimal to c – bit binary
- B2d: binary to decimal