

# Generalized bootstrap percolation

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Bootstrap percolation is a type of discrete time dynamical system on graphs in which vertices have one of two possible states, occupied or unoccupied. Typically the initial states of the vertices are determined according to a percolation measure and the states of the vertices evolve according to an update rule which is homogeneous (the same rule applies to every vertex), local (the rule depends on only a finite neighbourhood of the vertex) and monotone. The basic model has its roots in 1979 in physics, where its study was motivated by applications to interacting particle systems such as ferromagnetism. A great body of rigorous mathematical results are now known about the so-called  $r$ -neighbour model. In this talk we survey some of these results and discuss recent work showing that the large scale behaviour of the  $r$ -neighbour model is shared by a much broader class of bootstrap processes. We also present a number of open questions.

Based on joint work with Paul Balister, Béla Bollobás, Hugo Duminil-Copin, Rob Morris, Michał Przykucki and Andrew Uzzell.