

This bachelor thesis proposes an artificial intelligence approach to solve several levels from the Poly Bridge game. Poly bridge is a puzzle game with a sandbox environment in which the player is led to build a 2D bridge structure similar to a truss bridge. The player has to pay attention to the stability of this structure as well as to the material requirements. Given the complexity and variability of the problems posed by the game, we decided to use evolutionary algorithms. The aim of this thesis is to design several genetic operators that optimize the bridge structure, compare them and use the produced bridges in the Poly Bridge game.