

Image Processing Approach to Detect Tokens on a Nerenchi Board

DS Pandithage, B Hettige

Department of Computer Engineering, Faculty of Computing, General Sir John Kotelawala Defence University, Ratmalana, Sri Lanka

Abstract. Nerenchi is one of the oldest board games which has been discovered in Sri Lanka (c. AD 10), in which the board has diagonal lines joining the corners and horizontal and vertical lines joining the midst of three concentric squares. Nerenchi has mainly two phases. In the first phase, pieces have to be laid on the board. In this phase, 22 pieces must be placed from the 11 pieces each player has. When three pieces are placed in a straight line horizontally, vertically, or diagonally, the player is rewarded with a bonus chance called 'Nerenchi'. When either the number of pieces on the board reaches 22 or one player placed all his/her 11 pieces on the board, the second phase of the game begins where the players can move and capture each other's pieces when the player is rewarded with a Nerenchi. The behavior of each of these phases is governed by a set of simple rules. There is another board game that has very similar features and qualities which is the ancient Greek board game "Nine men's Morris". The issue at hand is that the art of the game and its skill and craft have almost come to extinction, and as Sri Lankans, we have to try and conserve our culture. Hence, in this research, I have implemented the first step of automating the game, by designing an Image processing system to identify the current positions of tokens of both parties on the board and to produce the current positions of tokens as an array.

Keywords: *Nerenchi, Image Processing, Automation*