

Project proposal

CMPSCI 670, Fall 2019, UMass Amherst

Project title: Sudoku Solver

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Abstract:

Sudoku is a popular brain game for a long time. While for humans, the game requires some thought, for a computer, it can instantly complete a sudoku game using algorithms. For this task, I will combined traditional image processing methods to capture Sudoku board image and seperate the image to 81 digits patches, then I will use Convolutional Neural Network to get Sudoku board matrix from the patches. Finally I will use simple backtracking algorithms to solve the sudoku puzzle and display the result on the video stream.

The whole process is shown in Figure 1.

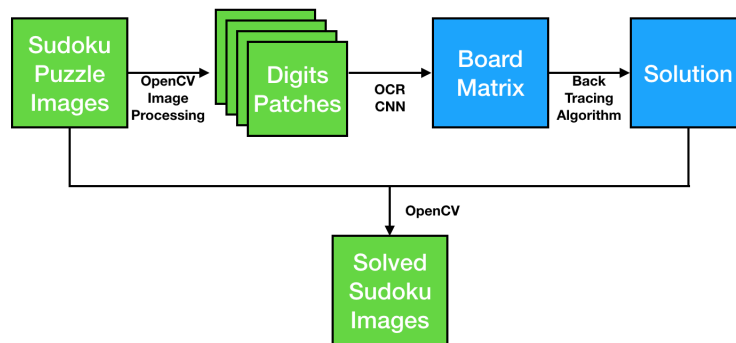


Figure 1: Solving Process

In this project, I will use simple labeled sudoku images dataset online for board detection and Chars74K dataset to train the digits recognition model.