



**SDSU**  
presents  
**MS Computer Science**  
**THESIS DEFENSE**

Tuesday,  
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10:00am GMCS 418

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## *Sudoku*

### Abstract

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The focus of the thesis is to design a Sudoku application with several features. This application generates Sudoku puzzles in three different levels i.e EASY, MEDIUM and HARD. Each level generates Sudoku puzzles which contain a unique solution. Difficulty is measured according to the number of digits placed in the puzzle and position of the numbers.

Sudoku can be divided into two types. One type of puzzle allows cannibalism i.e more than one solution for the same problem, and the second is puzzles with a unique solution. Unique solutions can be achieved with 17 or more numbers in the puzzle. If there are less than 17 numbers then a unique solution Sudoku can't be achieved.

A visual tool is created to help users learn Sudoku solving techniques by discovery.

### Thesis Committee

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Carl Eckberg, Thesis Chair, Department of Computer Science  
Alan Riggins, Department of Computer Science  
Carmelo Interlando, Department of Mathematics & Statistics