



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

Wednesday,  
October 19, 2016  
12:00pm GMCS 418

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# Mayur Jurani

*United States K-12 Education Data Analysis and Forecast*

## Abstract

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The education system is always a major factor for the growth of a country. The schooling system (Kindergarten to 12th Grade) is a base in the education system for choosing a career path.

The purpose of this thesis is to analyze the school education data for previous years and then predict the numbers for future. The factors being considered are public school enrollments, private school enrollment and student to teacher ratio. Moreover, this thesis also presents the numbers on trend for the homeschoolers in the United States. Time series analysis have been done using the ARIMA model to predict forecast value for the various factors.

A web application has been designed using “Shiny – A Web application framework for R”. The current numbers and predicted forecast numbers (Min, Max and Avg) was plotted on line graphs for individual states as well as for the entire nation. This application uses the responsive graphical user interface to display graph and numbers (table format) on a web page by providing dropdown lists for selecting various dependent factors. This application can be used with any standard web browser.

## Thesis Committee

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Carl Eckberg, Thesis Chair, Department of Computer Science  
Alan Riggins, Department of Computer Science  
Mark Dunster, Department of Mathematics & Statistics