

Project Year

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Project Team

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Project Title

Interactive Math on the Web

Audience

While this project is focused on problems in the undergraduate electrical engineering course, *Signals and Control Systems*, what we learn in this endeavor will be reported and documented with attention to portability and possible application in other engineering and science courses.

Pedagogical Issue

Mathematics has lagged behind other disciplines in creating online, interactive tools. In fact, simply achieving a reasonably attractive presentation of math on the Web has taken an unusually long time. Faculty and students who wish to use the web for developing and exchanging information dependent upon interactive mathematical equations lack a basic tool for this purpose.

Solution

We propose to develop an interactive website for use in the *Signals and Control Systems* course. We plan to take advantage of the emergence of new technologies, such as MathML, which promise to make math "live" on the Web. The site will contain hyperlinked equations with constituent clickable portions, where users will be able to click to display definitions or hints, or to change values and see the resulting change in graphs or subsequent calculations. The pedagogical benefit would be tighter integration of the mathematical descriptions of various concepts with the graphical or interactive visualization tools that elucidate the concept. In addition, interactive exercises for homework problems would benefit many students.

Technologies Used

MathML, Java Applets

A link to the *Signals and Control Systems* site is available here:

<http://www.jhu.edu/~signals/index.html>