

Abstract Examples

MATHEMATICS, COMPUTER SCIENCE, & MECHANICAL ENGINEERING

Title: CLOSED-WORLD REASONING APPLIED TO MATHEMATICAL PROOF

Major(s): Mathematics

Department: Computer Science, Mathematics and Statistics

This immediately captures personal interest in the presentation by telling us how it relates to us.

Abstract: Many students have sat in the tutoring center working through problem after problem on their math homework wondering why they cannot solve them. It turns out that much of classical mathematical logic is quite different from the way humans reason. In fact, without a rigorous background in mathematical logic it is difficult for humans to reason according to the norms of formal mathematics. This project assumes Husserl's idea that people reason to an interpretation and from an interpretation and includes new insights into the way in which humans construct logical frameworks. Using Stenning and Van Lambalgen's theory that much of human reasoning is about process planning we will apply closed-world reasoning to the construction of mathematical proofs via logic programming. The resulting model will help explicate the problems student have in creating proofs.

This abstract clearly and effectively tells us why the problem was researched and how, and it explains what the audience will gain from attending the presentation.

Title: MANDELMANIA: A MANDELBROT FRACTAL ANIMATION VIDEO

Major(s): Computer Science

Department: Computer Science, Mathematics, and Statistics

Abstract: This presentation is an animation video, accompanied by music, which shows a series of six sequences of zooming into the Mandelbrot set, each sequence starting from a point that shows the entire set. Making the final video required using skills acquired in the fields of art, music, and computer science. Programming and graphics skills were used to write algorithms that convert to and from the RGB (Red, Green, and Blue) and HSV (Hue, Saturation, and Value) color spaces to create a series of revolving colors that are aesthetically pleasing. Skills learned in the Computer Science Operating Systems class were used to separate the processing of different frames of the animation out onto different processors, to be simultaneously generated on multiple-processor machines.

This abstract clearly introduces what the presentation will contain, and it provides interesting detail. However, while the last sentence explains how the presenters were able to create the presentation, it might be better if this sentence explained why this type of presentation is of interest to the audience or what they can learn from the presentation.