

Automatic Projector Tilt Compensation System

Ganesh Ajjanagadde James Thomas Shantanu Jain

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Abstract

Our goal is to design a system that corrects the input to a projector if it is tilted so that its output appears unskewed. We will be projecting the display of a PC, and will connect the computer's VGA output to the FPGA board, and the FPGA board's VGA output to the projector. We will mount an accelerometer on the projector and measure its signals to determine the projector's tilt angles on two axes. We will run algorithms on the FPGA that correct the VGA input based on the tilt angles and produce the results at the VGA output for the projector to display. Finally, we will design digital logic that produces a voice specifying the new tilt angles whenever they are changed. The project was motivated by the increasing prevalence of portable projectors that benefit from fast automated setup.