
SCOTT MACLEAN, University of Waterloo
Mathematical Symbol Recognition in the MathBrush System

The MathBrush project at the University of Waterloo is a vehicle for investigating issues which arise in the construction of pen-based interfaces for computer algebra systems. Our prototype application currently comprises several components including an interface module, a pretty-printer, a symbol recognizer, and a structural analyzer. Here, we outline the MathBrush system in its entirety but focus on the symbol recognition module, demonstrating particular difficulties associated with recognizing symbols in the context of mathematical expressions as opposed to English text and describing our techniques for addressing these difficulties. We detail our experiments with various recognition algorithms, our approach to stroke grouping in a mathematical context, and aspects of our recognizer intended to improve performance and usability. Ongoing work incorporating feedback between the symbol recognition and structural analysis modules to improve recognition accuracy is also described.