SCHOOL OF COMPUTER SCIENCE AND SOFTWARE ENGINEERING
MONASH UNIVERSITY

TECHNICAL REPORT 2005/175

Stress Majorization with Orthogonal Ordering Constraints

T Dwyer, Y Koren and K Marriott

ABSTRACT

Force-directed placement i s a widely used approach to automatically arranging the nodes and edges of a relational diagram or graph in an aesthetically pleasing manner. The adoption of the stress-majorization method from multi-dimensional scaling into graph layout has provided an improved mathematical basis and better convergence properties for so-called "force-directed placement" techniques. In this paper we give an algorithm for augmenting such stress majorization techniques with orthogonal ordering constraints and we demonstrate several graph-drawing applications where this class of constrains can be very useful.