

A Vision Guided Agricultural Tractor

J Billingsley, M Schoenfisch
University of Southern Queensland

Abstract

A vision guidance system has been designed, built and commissioned which steers a tractor relative to the rows of a crop such as cotton. It was required to be insensitive to additional visual "noise" from weeds, while tolerating the fading out of one or more rows in a barren patch of the field. The system integrates data from several crop rows, testing for image quality. At the same time, the data processing requirements have been limited by the use of frame-sequential strategies to reduce the image space which must be processed. The current prototype employs an embedded 386 PC notebook computer and shows great promise of cost effective commercial exploitation.

Experimental results are reported and further sensing systems are explored to enhance performance in difficult environments.