

嵌入式影像處理系統及SURF特徵擷取  
Embedded Image Processing System and SURF Feature  
Extraction

研究生：Wei-Jia Hsu  
指導教授：宋開泰教授

This thesis aims to develop an embedded image processing board, which can be used to realize various image feature extraction and processing algorithms for robotic applications. The circuitry of this image board can be divided into two parts, one is for a digital signal processor (DSP) and the other for a field programmable gate array (FPGA). A low power, small size CMOS image sensor with YUV4:2:2 image format and 512x480 pixel size is adopted for image acquisition. The DSP module is mainly used for implementing image processing algorithms, while the FPGA module for lower level image processing and sensor control functions. In this work, the TMS320C6414TGLZ7 DSP from Texas Instruments Corporation and the EP2C35F672C6 FPGA from Altera Corporation were selected for the image board.

