计算机工程与应用 2009 45 (29): 233-236 ISSN: 1002-8331 CN: 11-2127/TP

工程与应用

FPCB基准孔精确定位技术研究

徐煜明，韩 雁

常州工学院 计算机信息工程学院，江苏 常州 213002

收稿日期 2009-4-10 修回日期 2009-6-15 网络版发布日期 2009-10-10 接受日期

摘要 提出一种基于机器视觉光学目标自动快速定位的改进算法。该算法为快速识别目标，对图像进行标签处理、邻域滤波和腐蚀处理，采用梯度算子和最小二乘圆算法确定靶心参数，基于步长测试自动获取脉冲当量，采用升降频算法控制伺服电机变速运行。实验结果表明，利用FPCB基准孔定位技术能成功实现FPCB定位靶的高精度、快速实时定位，具有较好的应用前景。

关键词 机器视觉 梯度算子 最小二乘圆 自动定位

分类号 TP399

Research on precise positioning technology for datum holes in FPCB

XU Yu-ming，HAN Yan

School of Computer Information and Engineering，Changzhou Institute of Technology，Changzhou，Jiangsu 213002，China

Abstract

The automatic positioning technology of optical target based on computer vision is investigated.The method to identify goal rapidly is proposed by using label processing，neighborhood filter，and corrosion processing of images.Gradient operator and least-squares algorithm is employed to determine the parameters of the target center.Pulse equivalent can be calculated automatically by testing step length.To achieve high precision and fast localization of a target center on the FPCB，the technology to control servo motor running at variable speeds by higher and lower frequencies is used.The experimental results show that positioning technology for FPCB base-holes based on machine vision can achieve high precision and fast localization of a target center on the FPCB，and the system has good application prospects.

Key words machine vision gradient operator least squares automatic positioning

DOI: 10.3778/j.issn.1002-8331.2009.29.070

通讯作者 徐煜明 xuyum@czu.cn