

## 2022 年英特尔杯大学生电子设计竞赛嵌入式系统专题邀请赛

### 参赛队作品简介

参赛学校	华东师范大学		
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作品题目 (中英文对照)	工厂智能巡检机器人 Intelligent Patrol Robot Designed for Smart Factory		
作品简介 (中英文对照, 中文限 500 字以内)	<p>针对智能工厂“互联、优化、透明、前瞻、敏捷”的发展需求, 本作品基于边缘 AI 计算平台 GNS-V40, 通过综合运用物联网、人工智能与多种传感器融合的技术, 在 ROS 系统下实现了监测环境、设备及工人异常并报告的功能。巡检机器人具备运动、视觉、交互及其他传感器模块, 能完成自主运动、目标检测、语音交互及后台管理等任务, 解决了固定位置传感器存在检测盲区、组网复杂、安装成本高的问题, 不仅消除了巡检人员专业素质参差不齐、工作时间有限和危险环境潜在风险大的不确定因素, 而且节约了工厂的治理成本, 有助于工厂的安全有效运行, 是工厂智能化发展不可或缺的重要组成部分, 具备广阔的市场前景。</p> <p>In response to smart factory's developmental demands of “interconnection, optimization, transparency, propection, agility”, this paper proposed a robot design based on edge AI computing platform GNS-V40. By combining technologies of internet of things, artificial intelligence and multi-sensor fusion, it realizes inspecting abnormalities of environment, equipment and workers under robot operating system(ROS). This patrol robot is equipped with modules of motion, vision, voice interaction and other functions, thus is capable of autonomous mobility, objection detection, voice interaction and web management. Therefore it not only solves fixed-sensor's problems of blind zone, complex networking and high installation cost, but also fixes uncertainties brought by inspectors such as unequal professional qualities, limited working hours and risky working conditions. For this reason, it will contribute to smart factory's cost reduction, safe running and effective management.</p>		

- 注:
1. 请使用小 4 号字 (12 号字), 单倍行距填写;
  2. 每支参赛队限一名指导教师;
  3. 参赛队员姓名应与正式报名表一致;
  4. 作品题目应与作品设计报告一致。