

ZICHUAN OU

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🎓 EDUCATION

Tianjin University

Sep. 2019 – Jun. 2023

Bachelor student in Measurement & Control Technology & Instrument , GPA: 3.35/4.0

👥 PROJECT EXPERIENCE

TI cup: Contactless temperature measurement & identification device [code](#) Oct. 2020

- **abstract:** The device can measure temperature, give a warn, record and recognize identification and detect mask wearing.
- **position:** Team member
 - 1) I used C to develop stm32f4 MCU, read the value from Infrared temperature sensor and display it.
 - 2) I designed the mechanical structure, electricity layout, and assembled them into a whole.
- **award:** 2nd Prize in Tianjin, TI Cup National Undergraduate Electronics Design Contest

Smart car - AI vision track [video](#) [code](#) Jan.-Aug. 2021

- **abstract:** The car can run for more than 2 mins; it can identify images and complete some actions; it can run 2 laps around the track, identify Numbers, Apriltags, images and complete the identification, targeting, etc.
- **position:** Team leader
 - 1) I designed the scheme and mechanical structure, used SW to designed 3D connections, and assembled the whole system.
 - 2) I used C to develop RT1064 MCU, read gray images from camera, used OTSU to get binary image, detect the features of track elements and planned the paths.
 - 3) I used AD to design the PCBs and completed all the welding.
- **award:** 1st Prize in national finals, The National University Students intelligent Car Race

TI cup: Intelligent drug delivery car [video](#) [code](#) Nov. 2021

- **abstract:** The drug delivery car can recognize numbers, patrol the line, delivery the drug, return and work with another car.
- **position:** Team leader
 - 1) I designed the scheme, mechanical structure and assembled the whole system.
 - 2) I used C to developed RT1064 MCU, read RGB images, extract read line and planned the paths; I designed a state machine to control the car.
- **award:** 1st Prize in national finals, TI Cup National Undergraduate Electronics Design Contest

🏆 ACADEMIC COMPETITIONS

- | | |
|---|-----------|
| • Advanced individual in Learning Progress | Dec. 2020 |
| • Merit student in TJU | Dec. 2020 |
| • Merit team member in TJU smart-car Lab | May. 2021 |
| • Science & Technology excellence award | Dec. 2021 |
| • 2 nd Prize in Tianjin TI Cup National Undergraduate Electronics Design Contest | Dec. 2020 |
| • 1 st Prize in North China region The National University Students intelligent Car Race | Jul. 2021 |
| • 1 st Prize in national finals The National University Students intelligent Car Race | Aug. 2021 |
| • 1 st Prize in national finals TI Cup National Undergraduate Electronics Design Contest | Dec. 2021 |

⚙️ SKILLS

- **coding:** C, Python, Matlab, Latex
- **software:** AD(PCB), Solidworks, [C4D](#), [Pr](#), [Mindmaster](#)
- **language:** English(Ielts6.0)
- **writing:** Wechat official account: 小电动车 (500+follow), [blog\(20k+visit\)](#)

区梓川

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🎓 教育

天津大学

2019.9 – 2023.6

学士, 测控技术与仪器, 加权: 85/100

👨‍💻 项目

TI 杯电子设计竞赛：简易无接触温度测量与身份识别装置 [代码](#)

2020.10

- 简介: 测量人体体温和物温, 可警告, 可录入与识别被测人身份, 检测是否佩戴口罩。
- 职责: 队员
 - 1) 我使用 C 语言开发 stm32f4 单片机, 读取红外温度传感器数值并显示。
 - 2) 我负责设计系统的机械结构、供电布局, 将各个模块组装成一个整体。
- 成果: 2020 年 TI 杯电子设计竞赛 天津市二等奖

智能车竞赛-智能视觉组 [视频](#) [代码](#)

2021.01 – 08

- 简介: 智能车可持续行驶超过 2min; 在 2min 内识别图片完成对应动作; 可从绕赛道两圈, 途中识别数字、Apriltag 码、物品, 完成辨向、打靶等动作。
- 职责: 队长
 - 1) 我设计了总体方案与整车机械结构, 设计和打印连接件和固定件, 并组装整车。
 - 2) 我使用 C 语言开发 RT1064 单片机, 从灰度摄像头得到灰度图, 用大津法得到二值图像, 捕捉各个元素特征点, 识别赛道元素和规划路径。
 - 3) 我设计了一块控制驱动一体化 pcb, 两块供电 pcb, 并完成所有焊接。
- 成果: 16 届全国大学生智能汽车竞赛 国赛一等奖

TI 杯电子设计竞赛：智能送药小车 [视频](#) [代码](#)

2021.11

- 简介: 送药小车可识别数字, 巡线, 运送药品, 原路返回和多车配送。
- 职责: 队长
 - 1) 我设计了总体方案, 整车机械结构, 并组装整车。
 - 2) 我使用 C 语言开发 RT-1064 单片机, 从彩色摄像头采集到 rgb565 图像, 将其转换为 Lab 空间图像, 用最小二乘法等提取红线信息并规划路线; 设计一个状态机控制小车运行。
- 成果: 2021 年 TI 杯全国大学生电子设计竞赛 国赛一等奖

🏆 获奖

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|--------------------------|---------|
| • 学习进步先进个人 | 2020.12 |
| • 天津大学三好学生 | 2020.12 |
| • 天津大学智能车队优秀队员 | 2021.05 |
| • 学生科技英才奖 | 2021.12 |
| • 天津市二等奖 TI 杯全国大学生电子设计竞赛 | 2020.12 |
| • 华北赛一等奖 第十六届大学生智能汽车竞赛 | 2021.07 |
| • 国赛一等奖 第十六届大学生智能汽车竞赛 | 2021.08 |
| • 国赛一等奖 TI 杯全国大学生电子设计竞赛 | 2021.12 |

⚙️ 技能

- 编程: C, Python, Matlab, Latex
- 软件: AD(PCB), Solidworks, [C4D](#), [Pr](#), [Mindmaster](#)
- 语言: 英语 (IELTS 6.0)
- 写作: 公众号: 小电动车 (500+ 关注), [博客](#) (2w+ 访问)