



**中国科学院大学**  
University of Chinese Academy of Sciences

Qualcomm



# Yuke Yang

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## Work Experience

2019.07-Now

### Qualcomm

Position: Modem Software Engineer

Job Description: join chipset off target implementation and debug from L1, L2 or L3, provide technical support and solutions for issues reported from testing team and customer, participate in Qualcomm 5G NR/LTE modem physical, high layer or multi-SIM software design and implementation

## Education Background

2016.09-2019.06

### University of Chinese Academy of Sciences

M.Sc. in Signal and Information Processing

GPA:3.09/4.0

2012.09-2016.06

### Nanjing University of Aeronautics and Astronautics

B.Eng. in Testing and Control Technologies Instrument

GPA:3.8/5.0

## Scholarship/Awards

2016

Outstanding Student Scholarship

2015

The Third Prize Scholarship (Top **15%**)

2014

The Third Prize of the 11<sup>th</sup> Jiangsu College Students Physics and Experiments Competition

2014

The Second Prize Scholarship (Top **10%**)

2013

The Second Prize of the First NUAA Calculus Contest

2013

The Second Prize Scholarship (Top **10%**)

2013

China National Scholarship

## Research Experience

2018.03-2018.08

### A High-altitude Balloon-Borne Gondola Attitude Control Program Based on STM32 Controller

In this project, I wrote a program that was targeted at controlling the orientation of a high-altitude balloon-borne gondola. An embedded RTOS -- UCOS III was transplanted on STM32H743XI, a microcontroller. Peripheral drivers for NAND flash, SPI, USART, FMC, ADC, DMA, CAN were written. Part of the application layer software was completed. The program received navigation data from an INS device through RS422 interface. Motors were controlled by the program through CAN bus, thereby controlling the orientation of the balloon-borne gondola.

2017.06-2017.12

### A Dual-Core Flight Control Computer Based on DSP and FPGA

In this project, I developed a customized flight control computer for a solar-powered UAV. For the hardware part, I used TMS32C6748, a DSP chip from TI company, as the main controller, and XC4VLX40, a FPGA chip from Xilinx company, as the co-controller. I finished the hardware design and layout. For the software part, I wrote a multi-channel UART controller IP core, extending multiple channels of UART without using 16550, a miscellaneous UART controller chip. I also wrote a SPI controller IP core to control MCP2515, a CAN controller and AD7607, an ADC through SPI interface. DSP communicated with FPGA through EMIFA interface. A SPI memory chip was used for storage of the program. NAND flash was used for storage of data log. I finished peripheral drivers for EMIFA, SPI, USRAT, NAND flash, EPWM, GPIO, watch dog and tested each part on board.

2016.02-2016-05      **A High-altitude Balloon-Borne Gondola Ground Control and Monitor Program Based on LabVIEW**  
 In this project, I wrote a ground control program to control the orientation of a high-altitude balloon-borne gondola and monitor its surrounding conditions. The program was written in LabVIEW, a graphic computer language. The program can monitor the balloon-borne gondola's attitude, position, altitude, velocity, acceleration etc. It can show condition parameters in 2 dimension wave form in real time. It can also show balloon in a 3 dimension form. Flight data on the balloon-borne computer can be logged by the program so that it can be downloaded by desktop computer and analyzed later.

### ***Internship***

2018.12-2019.06      Qualcomm Wireless Communication Technologies (China) limited  
 2015.07-2015.08      Nanjing Institute Of Measurement And Testing Technology  
 2014.07-2014.08      NUA A Mechanical Processing Factory  
 2013.11-2013.12      NUA A Electrical Engineering Training Center

### ***Publications***

- [1]    YANG Yu-ke, WANG Bao-cheng, Design of SPI Controller System Based on FPGA and EMIFA(In Chinese) [J], Computer Measurement and Control.
- [2]    ZHUANG Lei, YANG Yu-ke, MIAO Jing-gang, ZHOU Jiang-hua, Design of Ground Monitoring Software for Stratospheric Balloon-Borne Gondola Attitude Control Based on LabVIEW(In Chinese) [J], Measurement and Control Technology.

### ***Miscellaneous***

English Proficiency    TOFEL(104), GRE(327)  
 Research Areas      Operating Systems, Computer Networks, Wireless Communication, Embedded Systems  
 Skills                  C, C++, C#, LabVIEW, MATLAB, Verilog, DSP, FPGA, ARM  
 Software              Altium Designer, Multisim, Proteus, AutoCAD  
 Interests              Basketball



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## 杨宇科

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### 工作经历

2019.07 至今

高通无线通信有限公司

职位: Modem 软件工程师

工作描述: 参与 L1, L2 和 L3 的芯片仿真实现及调试,

为测试团队及客户所报出的问题提供技术支持及解决方案,

参与高通公司 5G NR/LTE modem 物理层, 高层及多卡软件设计与实现

### 教育背景

2016.09-2019.06

中国科学院大学

硕士, 专业: 信号与信息处理

绩点: 3.09/4.0

2012.09-2016.06

南京航空航天大学

学士, 专业: 测控技术与仪器

绩点: 3.8/5.0 (前 10%)

### 所获奖项

2016

中国科学院大学优秀学生奖学金

2015

南京航空航天大学三等奖学金

2014

第 11 届江苏省大学生物理与实验竞赛三等奖

2014

南京航空航天大学二等奖学金

2013

第 1 届南京航空航天大学高等数学竞赛二等奖

2013

南京航空航天大学二等奖学金

2013

国家奖学金

### 研究经历

2018.03-2018.08

基于 STM32 控制器高空气球球载吊舱姿态控制软件

在该项目中, 我编写了一个用于控制高空气球球载吊舱姿态的程序. 将嵌入式操作系统 UCOS-III 移植到微控制器 STM32H743XI 上. 编写了 NAND Flash, SPI, USART, FMC, ADC, DMA, CAN 等外设的驱动代码. 实现了部分应用层功能. 该程序通过 RS422 接口从惯导设备中读取导航数据, 通过 CAN 总线控制电机, 进而控制气球吊舱的姿态.

2017.06-2017.12

基于 DSP-FPGA 的双核飞控计算机

在该项目中, 我开发了一个用于太阳能无人机的飞控计算机电路板. 对于硬件部分, 我使用 TI 公司的 DSP 芯片 TMS32C6748 作为主控制器, 赛灵思公司的 FPGA 芯片 XC4VLX40 作为协处理器. 我完成了硬件设计、电路板 Layout 以及打样. 对于软件部分, 我编写了一个多通道 UART 控制器 IP 核, 在不使用分立芯片 16550 的情况下扩展了多路 UART 通道. 我还编写了一个 SPI 控制器 IP 核, 通过 SPI 接口控制 CAN 控制器芯片 MCP2515 以及 ADC 芯片 AD7607. DSP 通过 EMIFA 接口与 DSP 芯片通信. 使用 SPI 存储器存储程序. 使用 NAND flash 存储数据日志. 我完成了 EMIFA, SPI, USART, NAND flash, EPWM, GPIO, watch dog 等外设的驱动代码的编写, 并在电路板上测试了各部分外设的功能.

2016.02-2016-05

基于 LabVIEW 的高空气球球载吊舱地面监控软件

在该项目中, 我编写了一个用于控制高空气球球载吊舱姿态以及监测其周边环境的的控制软件. 我使用图形化编程语言 LabVIEW 编写该程序. 该程序可监测球载吊舱的姿态, 位置, 高度, 速度, 加速度等参数. 可以实时地将以上参数以二维波形展示出来. 可以展示吊舱的三维姿态. 该程序可对球载飞控计算机上的飞行数据进行记录, 以便最后

可以在台式机上将飞行日志下载出来进行分析.

### 实习经历

2018.12-2019.06	高通无线通信(中国)有限公司
2015.07-2015.08	南京计量监督检测院
2014.07-2014.08	南京航空航天大学工程训练中心
2013.11-2013.12	南京航空航天大学电子电气训练中心

### 发表论文

- [1] 杨宇科, 王保成, 基于 FPGA-EMIFA 的 SPI 控制器系统设计 [J], 计算机测量与控制.
- [2] 庄雷, 杨宇科, 苗景刚, 周江华, 基于 LabVIEW 的高空气球球载吊篮姿态监控软件设计[J], 测控技术.

### 其它

英语熟练程度	托福(104), GRE(327)
技能	C, C++, C#, LabVIEW, MATLAB, Verilog, DSP, FPGA, ARM, UCOS III, FreeRTOS
掌握软件	Altium Designer, Multisim, Proteus, AutoCAD, Office
兴趣	篮球