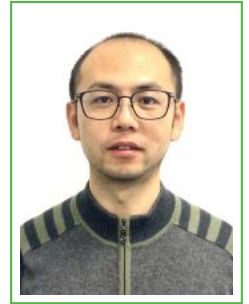


Zhiqiang Xu

Senior software architect

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Work as a hacker. Hack as an artist.

SUMMARY

- B.E. with 17 years work experience and 2 years management experience.
- 17 years of experience in embedded software development, with a diverse background that includes 6 years in automotive projects. 7 more years in mobile device R&D, 4 years in robot R&D. Notably, I spent 5 years specializing in mobile battery management, 3 years in ROS application development, and 1 years in sensor FW development using STM32 with RT-Thread.
- Well-versed in Linux development environments. Familiar with kernel driver development and debugging. Proficient in using scripts for automating system integration and development environments.
- Proficient in C language, bash scripting, version control and docker etc.. Like using lisp and its dialects as hobbies.
- Actively involving in open-source projects, including TMK Keyboard, RT-Thread, KOREader, Proxmark3, etc.
- Passionate and reverent towards technology. 8 granted patents as the first inventor.

PROFESSIONAL EXPERIENCE

- 2022.04 – Present **Principal Software Engineer, Zeekr Automotive (Ningbo Hangzhou Bay New Area), Shanghai**
 Responsibilities: Design and develop SOA communication platform for cockpit system.
- Design SOA middleware for Zeekr 2nd-Gen platform
 - Design and implement SOA communication component for Zeekr 2nd-Gen platform based on open-sourced vsomeip and commonapi, enabling communication within and between domain controllers using SOMEIP.
 - Design and implement a development and compilation environment based on Docker to ensure consistency across target version compilation environments. Provide capabilities for single-machine simulation and online debugging to enhance SOA component development efficiency.
 - Led team to design and implement a tool suit that converts matrix files into C++ and Java template codes. Which enables the rapid development of SOA applications for both native and android programs.
 - Led team to implement SOA SDK. Which can be compiled and adapted to support various OSs, including Linux, QNX, Android, and more. This initiative successfully achieved platformization of the SOA SDK.
 - Implement a tool for generating wireshark dissector plugins from SOA matrix files, which facilitating middleware development and service integration testing by simplifying service data verification.
 - Design and implement a solution for connecting prototypes to PCs with ethernet by using usb-ethernet adaptor and a ROS router. This solution is easy to use, scalable and cheaper than T1-Tx adapter method.
 - Zeekr 3rd-Gen ZKOS Communication Solution
 - Verify the capabilities of the ZKOS communication solution and communication framework tools.
 - Write service interface test programs based on the SOA service definitions of the 3.0 vehicle platform and validate the communication integrity in the latest version of ZKOS.
 - Develop service verification tools to streamline the process of ZKOS development, compilation, deployment, and testing.
 - Extract the ZKOS SDK from the original ZKOS toolchain.
- 2019.10 – 2022.03 **Software architect, SAIC MAXUS, Shanghai**
 Responsibilities: Software architecture design for next generation cockpit.
- OTA protocol maintenance and revision.
 - CI/CD services deployment.
 - Domain controllers' clock sync policy constitution.
 - Multi-system running on single-core H/W scheme design.
 - Software modules definition and architecture design for intelligent cockpit controller based on Qualcomm 8155.
 - Design and review the solution to extract signals from CAN to HLOS.
 - Air condition application development for Banma OS.
 - SOA matrix design an review.
 - HD map compiling, matching, and rendering achitecture for AD.
 - Design artitecture for co-operation Navi map between front and rear IVI.
- 2018.06 – 2019.09 **Senior System architect, Shanghai Yunshen technologies Co., Ltd. , Shanghai**
 Responsibilities: robotic development
- Sensor development
 - rt-thread CAN driver implementation for STM32.
 - Ultrasonic, anti-collision, anti-falling sensors development.
 - Sensor's firmware upgrading over CAN method implementation.
 - Robot control system
 - Package ROS running environment by docker image.
 - Integrate camera driver and CAN adapter driver into docker image.
 - ROS nodes for devices and applications implementation.
 - Build system image for x86.
 - Mikrotik router configuration.
 - FOTA function for X86 based controller implementation.
 - System management
 - Docker registry server.
 - LDAP, Git, Gerrit, VPN and Jenkins server construction and management.
 - QoS configuration for ROS (Router Operating System).

- 2016.07 – 2018.05 **Senior Embedded Software Engineer, Shanghai clever mrobot technologies Co., Ltd. , Shanghai**
 Responsibilities: Robotic development
- Android driver development
 - Rockwell 3288 BSP development.
 - System stability and charging system optimization.
 - Robot control system
 - Robot control system redesign.
 - Construct newly robot control system by ROS (Robot Operating System).
 - Porting robot control system from x86 to Nvidia TX1. Integrate OpenCV support into ROS.
- 2010.06 – 2016.06 **Embedded Software Engineer, Shanghai Phicomm. Inc., Shanghai**
 Responsibilities: Mobile phone development
- Android Smartphone project
 - On Marvell PXA968 platform. Sensor driver and PMIC driver development.
 - Qualcomm MSM7x27/MSM8x25/MSM8x25Q platform. PMIC module development. Develop environment optimization: geomagnetic debug method optimization, TP fw upgrade method. Dual-way charging method implementation based on smb358. Batch review tool for gerit.
 - Qualcomm MSM8x10/8x12/8x26/8x16/8994/8909 platform. PMIC module, battery characterization.
 - Package all-in-one environment to a single self-uncompressable file for convenient quick setting for newbie developers under windows and linux.
 - Package Android compile environment by docker technique to standardize compile environment.
 - Optimize android compilation efficiency by using ditcc and ccache.
 - MStar and MTK feature phone development
 - MMI customization, SP porting for customer.
 - Scripting for auto release.
- 2009.10 – 2010.06 **Embedded software engineer, Shanghai iBingo network technology Co., Ltd., Shanghai**
 Responsibilities: Develop dynamic theme and screen saver for feature phone (iShow theme system).
- Dynamic themes development for feature phone.
 - 3X3 style, Ring style theme.
 - Ribbon style screensaver.
 - Dandelion screensaver which can distinguish between daylight and night.
 - Scripting for auto release.
 - Optimize downloading efficiency.
- 2008.11 – 2009.10 **Embedded Software Engineer, Shanghai Dragontec Group, Shanghai**
 Responsibilities: Japanese outsourcing job.
- Digital TV for Hitachi development.
 - UI implementation and bug fix.
 - Documents composing.
 - Coding and testing.
 - System porting from vxworks to Linux.
 - Openvg porting project.
 - Port opencv to SuperH platform for Hitachi television project.
 - Unit test cases.
- 2008.06 – 2008.11 **Java Engineer, Kyrocera Mita, Oosaka**
 Responsibilities: Non-paper solution development for hospital.
- Controller module, Facade module and Storage module implementation.
 - Documents composing.
 - Coding and testing.
- 2007.05 – 2008.06 **Embedded Software Engineer, Hitachi ICS, Hitachi**
 Responsibilities: Development of IVI for Cadillac CTS 08 and 09.
- iPod support functions development. In charge of maintenance of coreapp task and controller task.
 - Audio file header parser development.
 - Documents composing.

2006.07 – 2007.05 **Java Software Engineer, Nanking University Dragontec, Nanking**
Responsibilities: Suntory vending machine online management system development.
○ Constructing sql for operating databases under DB2 and PostgreSQL.
○ Scripting for software release and deployment.
○ Unit test cases.
○ Documents composing.

EDUCATIONAL QUALIFICATIONS

2002.09 – 2006.06 **BA of Traffic engineering, Hohai University, Nanking**

LANGUAGE SKILLS

English CET4
Japanese

Normal
Normal

TECHNICAL SKILLS AND KNOWLEDGE

■ ■ ■ ■ basic knowlegde
■ ■ ■ ■ intermediate knowledge, some project experience
■ ■ ■ ■ extensive project experience
■ ■ ■ ■ deepened expert knowledge
■ ■ ■ ■ expert/guru

C	■ ■ ■ ■ ■	Java	■ ■ ■ ■ ■
Kernel Driver	■ ■ ■ ■ ■	RT-Thread	■ ■ ■ ■ ■
Linux/Unix	■ ■ ■ ■ ■	Android BSP	■ ■ ■ ■ ■
Git/Repo	■ ■ ■ ■ ■	Docker	■ ■ ■ ■ ■
Bash	■ ■ ■ ■ ■	Python	■ ■ ■ ■ ■
Emacs	■ ■ ■ ■ ■	Vim	■ ■ ■ ■ ■
ΛT _E X	■ ■ ■ ■ ■	Common Lisp	■ ■ ■ ■ ■
Router Operating System	■ ■ ■ ■ ■	Robot Operating System	■ ■ ■ ■ ■

HOBBIES

Reading Technology, Novell

Sports Skate Board, F1, Marathon

GRANTED PATENTS

201510477097.X 一种登录认证方法及系统
201510612722.7 一种扩展移动终端运算能力的系统
201410613796.8 一种移动终端及其虚拟光驱的实现方法
201210368281.7 一种耳机接口装置及基于所述耳机接口装置的控制方法
201510745100.1 一种密钥加密方法及系统、电子设备
201210585845.2 硬件固件独立升级系统及方法
201420615063.3 一种手机进水保护装置
CN201811304800.7A 一种活动区域热力图的生成方法和服务器

MISCELLANEOUS

3rd party **github**
projects
○ twip: Add proxy support.
○ ChinaDNS-C: Fix bug and port to tomato.
○ Koreader: Bug fix and compilation speed optimize.
○ tmk_keyboard: Add bluetooth support for usb2usb.
○ RT Thread: Fix STM32F1 bsp bugs. Write CAN driver for Stm32f4 using hal library.
○ ChameleonMini-rebooted: Add NTAG-213、215、216 support.
○ lsp-sonarlint: An Emacs plugin from using sonarlint as a lsp backend to help checking codes rules. Add c/c++ checking support.

Own projects **github**

- battery_analyzer: Use spline method to generate battery SOC table.
- vim_configs: Vim configure used for co-workers.
- ChameleonMini-rebooted: Add support for NTAG-213, 215, 216.
- battery_analyzer: A tool that can auto sampling and calculate SOC table for battery.
- csr_tool: Script which can dump firmware from CSR chips.
- Ultramanmedal: A lua script which can generate tags for zeta ultraman.
- bin2elf: Add elf header for bin file.
- wintoolset: An environment for running script tools under windows.
- trc2asc: Convert trc file which is saved by peak apps to asc file.
- asc2blf: Convert ASC to blf or blf to asc.
- exportdrawio: Export png svg pdf files from a drawio file.
- crackmfkey: Auto download sniff data from chameleon and calculate keys out.