VIET NGUYEN

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SUMMARY

- Software engineer with 9 years of experience: development, integration and testing for embedded systems in both component and system levels
- MSc degree in Electronics - University of Hertfordshire, UK with 2 IEEE papers
- Canadian Citizen.

CORE SKILLS

- Dev/test/integrate embedded systems using C/C++/Python
- Good working knowledge of interfaces such as CAN, SPI and UART.
- Operated electronics measuring instruments (Oscilloscope, Function generator).
- Experienced with Real Time OS (OSEK), AUTOSAR, and MISRA-C, VectorCast
- Used both Linux distros and Windows on everyday work.
- Familiarized with V/ Scrum model applied in working process.
- Worked with networking activities: subnetting, forwarding, ports mirroring...
- Exposed to dev tools: VSCode, GIT, Eclipse, Pycharm….

WORK EXPERIENCE

DEK Technologies   **07/2022 – Now**
Senior Software Engineer
- Product: 5G modems
- Linux based system-python interface is used as main cli for customer
- Outsourcing, work directly in customer's team from US and AUS
- startup process of converting user's configured angles and temperature to lookup tables, then flash them to antenna arrays' controllers for beam forming feature
- convert from configured raw chips' data in json format to C code with logic, then build them and flash down to FPGA using USART. This generator significantly reduces time coding for new projects
- Debug and root cause report for system tests on hardware boards.

Thales Canada, Transportation Solutions   **12/2019 – 07/2022**
Intermediate Software Analyst: 10/2020 – 07/2022
Software Analyst: 12/2019 – 09/2020
Automating:
- Python script for over-ethernet lab firmware/software deployment to linux-based embedded boards (they are used as train cars' processing units)
- Bash scripts to automate flashing train detecting boxes on the field
- Script for monitoring and automatic extracting logs from boards (all or optional from users)
- Develop script/code to push/move physical switch in order to simulate the field's conditions

Develop/ Debug tools for system simulation and configuration.
- Obtain, Analyze and implement requirements in close-loop process
- Languages: Python, C/C++, bash script, powershell
- Maintain and add new features for I/O simulator using C++

Integration activities:
- CBTC systems (Communication-Based-Train-Control)
- Set up virtual machines as well as boards for simulating trains in labs
- Config network/route/ firewall for subsystems to achieve network separation/security.
- Create management layer programs for various linux/windows machines so users can remotely control/observe them from central machine
- Integrate subsystems together according to system's requirements, debug error messages and work with subsystem teams to achieve the compatibility.
- Engineering test for system stability before deliver to customer's side (24 hr test, weekend test…)

Development/ Testing for platform software features:
Product run on Linux-based OS, used on subway trains
Language: C
- Feature: tag monitoring system, which is used to get train's current speed
- Debug issue of real-time threads and connections between modules (Ethernet and CAN).

Testing:
- Tool: VectorCast
- Testing methods: Boundary, MC/DC (SIL-4 Criteria)
- Test Type: Blackbox, Whitebox
- Test levels: unit test, integration test, system test

Accomplishments:
- Develop from scratch a translator from yaml config files with text pattern detecting then calculate the routings base on input IP and generate commands for Hirschmann devices. This project solved issue with mismatched configs between devices (There are hundreds of network boxes along the railway)
- Setup pytest automatic testing environment both on simulation and hardware lab, significantly reduce effort of regression testing (nearly by half). Since it is considered a success, it is being applied to other projects

Flex Automotive   **2/2019 – 12/2019**
Software Engineer
- Create test plans, test cases for unit test and integration test with criteria specified in ISO26262 (ASIL-D)
- Vector Cast C/C++ is used as the primary tool
- Create and maintain traceability matrix between requirements and test cases.

DEK Technologies   **12/2016-1/2018**
Software Engineer
- Provide software maintenance for IP Multimedia Subsystem proxy for 3G transactions.
- Determine scope of already/ potentially failed modules based on trace logs
- C++ is used as main language

Robert Bosch Engineering and Business Solutions   **12/2013-11/2016**
    Software Engineer: 12/2013 to 4/2015
    Senior Software Engineer: 4/2015 to 11/2016

- Introduced new features to automotive airbag system according to requirements
- Optimize program's run-time and consumed resources.
- Assist junior team members.
- Tools: MKS, CANCase/ CANoe, Oscilloscopes and Renesas debugger
- Review code and writing technical documents
- Release code and related tests

EDUCATION

Master of Science in Embedded Intelligent Systems
2012-2013
University of Hertfordshire, Hertfordshire, UK

Distinction

Final thesis: "Image Morphing for Face Recognition", Scanning users' facial depth map using MS Kinect and identify features utilizing morphology image processing.

B.E in Electrical Engineering
2007-2011
International University – Vietnam National University, VN
GPA: 74/100

PUBLICATION

1. Ramalingam S., Shenoy A., Viet N.T. (2019) *Fundamentals and Advances in 3D Face Recognition*. In: Obaidat M., Traore I., Woungang I. (eds) Biometric-Based Physical and Cybersecurity Systems. Springer, Cham. https://doi.org/10.1007/978-3-319-98734-7_5

2. Ramalingam, S. and Nguyen Trong Viet, *3D Face Synthesis with KINECT*, 2013 IEEE International Conference on Systems, Man, and Cybernetics.