# VIET NGUYEN

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### SUMMARY

* Canadian Citizen.
* Software engineer with 8 years of experience in multiple facets of software: development, integration and testing for embedded systems in both component and system levels
* Earned MSc degree in Electronics at the University of Hertfordshire, UK.
* 2 IEEE papers

**CORE SKILLS**

* 8 years of C/C++ programming for embedded systems.
* Good working knowledge of interfaces such as CAN, SPI and UART.
* Use multiple Software Version Control (GIT, SVN, ClearCase) in working process
* Trained on operating electronics measuring instruments (Oscilloscope, Function generator).
* Experienced with Real Time OS (OSEK), AUTOSAR, and MISRA-C, VectorCast
* Use both Linux distros and Windows on everyday work.
* Familiarized with V/ Scrum model applied in working process.

**WORK EXPERIENCE**

**Thales Canada, Transportation Solutions 12/2019 – Now**

1. **Intermediate Software Analyst:** 10/2020 – Now

Automator:

* Automate previously manual steps in hardware lab (power cycle, switching mode)
* Implement self-test for lab hardware which will provide summary to user
* Realize remote-control system for company’s lab
* This system allow back to back mapping between simulation and real target verifications

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++ (Multithreading, linux low level I/O)

Integration activities:

* Integrate for CBTC systems
* Set up virtual machines on ESXI/DSM/VSM for simulating trains
* 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…)

**Accomplishments:**

* + Created tools using Python, SSH as well as PowerShell to start, check and reset simulated trains, which helps to accelerate the integration process considerably.
  + Build from scratch a translator from yaml-formatted input files to Command Lines commands for the networking team, which dynamically calculate the routings base on input IP and generate output for Hirschmann devices. This tool helps to solve their issue of re-calculating whole sheets of data among different projects. (Tool uses RegEx to detect phrase input patterns)
  + 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 as well.

1. **Software Analyst:** 12/2019 – 09/2020

Development/ Testing for platform software

Product run on Linux-based OS, used on subway trains

Language: C for linux environment

**Development:**

* IDE: Eclipse for C/C++
* Realize requirements for 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).

**Unit Test:**

* Tool: VectorCast
* Testing methods: Boundary, MC/DC (SIL-4 Criteria)
* Test Type: Blackbox, Whitebox

**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 (SRS, SyRS)
* Designed software modules complying with the company's coding rules.
* Optimized program’s run-time and consumed resources.
* Prepared automation tests for coverage verification.
* Document/ Review module interfaces and internal logic
* Composed technical documents at architectural, modular levels
* Executed manual engineering tests using electronics equipment (short-circuit, reaction-time tests)
* Assist junior team members.
* Language: C (GreenHill compiler)
* Tools: MKS, CANCase/ CANoe, OScilloscopes and Renesas debugger
* Standards: AUTOSAR, MISRA C, 14229-1, 15765-2, 26224, 26262 for development and testing

**Accomplished**

* ground-up development for Vehicle Identification Number (VIN) service applied on new Airbag platform. It acts like a fingerprint; prevent unauthorized replacement
* Conduct measurement and analyzing of system performance as well as constraints.
* Implemented new CAN messages for crash detection system
* Realized Event Data Recording (EDR) function for new pressure sensors
* Modified self-diagnostics module in order to accommodate additional faults.

**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.