

Arun S Nair

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PROFESSIONAL PROFILE

Twenty Three plus (23+) years of progressively responsible experience in real-time safety and non-safety embedded system, in the areas of Automotive Electronics.

- Excellent qualifications in cross-functional team leadership
- Managing program of spanning the interaction with multiple Automotive Tier1s, Automotive OEM and Automotive product development
- Strong leadership, team building and problem solving expertise
- Effective customer liaison with strong interpersonal and communication skills
- Successful in building profitable In-vehicle networking group along with Practice Director
- Expertise in the area of – Road vehicles functional safety – ISO 26262
- Significant experience in project estimations, propositions and proposals.
- Extensive experience in project execution (planning, scheduling, monitoring, controlling, risk and people management)
- Conducted workshop on NOS and AUTOSAR products at various OEMs
- Participated AUTOSAR Work package 4.1.1.2 on ECU Configuration
- Published papers on International and National symposiums
- CMD awards 2008 winner for exemplifying Cummins Core values of Integrity
- Played the roles as Solution Architect, Resource Manager, Practice Delivery Manager, Product Manager, Release Manager and Customer Management

EXPERIENCE SUMMARY

Company Name: Nexteer Automotive India Software Center
Designation: Divisional Manager - Architecture
Duration: May-2019 to till date

Previous Experiences:

Company Name: Harman International (India) Pvt. Ltd
Designation: Senior Manager, Software
Duration: Nov-2015 to May-2019

Company Name: KPIT Technologies Ltd (formerly C G. Smith (CGS) Software Pvt. Ltd)
Designation: Senior Program manager
Duration: Sep-2000 to Oct-2015

Sl. No	Designation	From	To
1.	Senior Program Manager	Jan-2013	Oct-2015
2.	Program Manager	Jul-2009	Dec-2012
3.	Project Manager	Apr-2007	Jun-2009
4.	Project Leader	Jun-2001	Mar-2007
5.	Member Technical Staff	Sep-2000	May-2001

Company Name	Designation	Duration	Work Profile
ISRO Satellite Center	Scientist 'SC'	Dec'1998 Sep'2000	Development and maintenance of test software for –Cartostat, INSAT 2A satellites
Wipro InfoTech	Senior Software Engineer	Jun'1998 Dec'1998	Development of data-link communication software for Guardian 90 based TANDEM machines.

CERTIFICATIONS/TRAININGS

Delivered:

- NOS workshops for OEMs across geographies - Indian OEM, Chinese OEM and APAC OEM
- NOS training to Tier1s and OEM representatives of a European OEM
- AUTOSAR workshop for APAC OEM

Attended:

- ASIL Certification course by Tuv India
- Vector Hands-on AUTOSAR Training
- 6 Sigma Green Belt Training (KPIT Cummins Infosystems Training - 2010)
- Certification on Project Management PROMS (KPIT Cummins Infosystems Training - 2008)
- Microsoft Project - Workshop (CG-Smith Training - 2001)
- CMM Version 1.1 Level 5 - Workshop (Global Systems Technology Inc. - 2000)
- Software Development Process Methodology (SDPM) Training (CG-Smith Induction Training - 2000)

CERTIFICATION

- Bronze medal winner on Certificate Course on Research Methodology (Alexis Foundation - CCRM-805 on Jan-Mar'2015)
- Course on 'RTOS & VxWorks' (M S Ramaiah School of Advanced Studies on Oct-Nov'2003)
- PROMS Certification (KPIT Certification Program – Equivalent to PMP Certification - 2008)
- Wow award for playing vital role in Auto Spice Level 5 Certification (2008)
- Six Sigma Belt training completion certificate (Jun'2010)

APPRECIATIONS

- Best paper award TecXpedition 2008 and TecXpedition 2010 (Given by KPIT)
- Best case study paper award Quest 2007 to Quest 2009 (Given by KPIT)
- Winner 'Idea Eureka' during Quest 2008 (Given by KPIT)
- CMD awards 2008 winner for exemplifying Cummins Core values of Integrity (Given by Cummins)
- Excellent Contribution for Auto Spice Level 5 Certification (Given by KPIT)
- Service Award (Given by KPIT for Completing 10 Years' Service)

PROFESSIONAL QUALIFICATION

- Pursuing Ph. D on Operating Systems from BITS Pilani, Goa (Part Time)
- Master's Degree (M. Tech) in Electronics, 1998
Cochin University of Science and Technology, Kochi, Kerala (Secured 82.50%)
- Bachelor's Degree (B. Tech) in Electronics & Communication, 1996
MACE, Kothamangalam, Mahatma Gandhi University, Kottayam, Kerala (Secured 81.75%)

PAPERS

- Published paper "MEDIATOR-A Mixed Criticality Deadline Honored Arbiter for Multi-core Real-time System" at 2019 IEEE/ACM 23rd International Symposium on Distributed Simulation and Real Time Applications (DS-RT)

- Published paper “Making of Safer Network Operating System Components” at Proceedings of the European Automotive Congress EAEC-ESFA 2015-2016
- Accepted the Paper on “Vehicle Communication Network Design – A Case Study for Hybrid Electric Vehicles” at 12th EAEC European Automotive Congress at Bratislava (EAEC2009)
- Published paper “Multiple Signal Database Configuration for Similar ECUs – A Cost Reduction Approach” on technical bulletin of 12th Symposium on International Automotive Technology (SIAT) arranged by ARAI (SIAT 2011).
- Presented and published paper “Strategic Analysis on Indian In-vehicle Networking Technologies and Protocols” on SIXTH NATIONAL CONFERENCE ON AUTOMOTIVE INFOTRONICS at Anna University, Chennai (Dec’10).
- Published multiple articles on TechTalk, internal technical magazine of KPIT Cummins.

SKILL SETS

Safety Standards:

- Road vehicles functional safety – ISO 26262
- MISRA – Development guidelines for vehicle based software
- MISRA – Guidelines for safety analysis of vehicle based programmable systems
- MISRA–C:2004 & C:2012– Guidelines for the use of the ‘C’ language in critical systems
- SAE – J1739 Potential Failure Mode and Effects Analysis in Design (Design FMEA)
- IEEE Standards – Software engineering standards

Estimation Techniques:

- Wide Band Delphi (WBD)
- Direct estimations based on organizational metrics
- Knowledge of PERT, Function Point (FP) estimations

Domain:

- Automotive Embedded Electronics – Middleware and Low level Software development and management, AUTOSAR Concepts, Networking Operating Systems, UNIX Internals
 - NOS: COM, NM, DK, SWDL (Bootloader), Gateway, CCP, LIN Stack
 - AUTOSAR: COM Stack, DEM, DCM, ECU Configuration

Software Languages:

- C, Assembly, Make utilities, Perl and Shell Scripting

Communication Protocols:

- AUTOSAR
- Network Operating System (eNOS – NM, COM, Bootloader and DK)
- CCP, UDS (ISO 14229), KWP2000 (ISO 14230), TP (ISO15765, ISO10681) and ISO Bus (ISO 11783)
- CAN, LIN, SCI, SPI, FlexRay, I2C, RS232, TCP/IP

Microcontrollers:

- Freescale STAR12 series, X12 series (STAR 12 series with XGATE PCP)
- Freescale M68XXX Series, MPC55xx, MPC56xx
- NXP S32K1xx, S32K2xx
- Renesas RH850F1x, NECV850, M16C/29 series, M32C Series, R32C series.
- Texas Instruments TMS 470 series (SCC, HECC, WEGA), TI TMS 570 (MIRA+, CAPELLA)
- Infineon XC164, XC2000 Series, Tricore17XX
- Fujitsu FR60 Family, Microchip dSPIC, NSC CP3SP33, STMicro ST10F27, Toshiba ST10F27

Real Time Operating Systems (RTOS):

- OSEK OS, AUTOSAR, VxWorks

Operating Systems (OS):

- Windows, Unix (Sun Solaris), Linux and DOS

Development Tool Chains:

- Cross compilers, IDE and Debuggers (Greenhills, Diab, Metrowerks, AVR Studio, AVR Dragon, Toshiba, RealView, Keil, GCC, GDB, XXGDB, I-System, MPLAB IDE with C30, Microchip ICD, BDM and JTAG)
- Static Analysis Tools – PRQA (QAC) and Lint

Verification And Validation Tools:

- Propriety test bench for validating the power distribution system
- CANoe, CANape, DENalyzer, CANGeny
- Rational Test Real Time (RTRT) and Hindsight unit testing tool
- VBF Converter, SDA, Doxygen, MOST Optolyzer

Configuration Tools:

- CM Synergy and Tortoise SVN

Process Standards:

- Automotive SPICE (Software Process Improvement and Capability Determination) Level – 5

ANNEXURE: – List of Automotive Embedded Projects

Vehicle Interface ECU Development

- Vehicle Interface Controller for Automotive Infotainment/Cockpit/ADAS/Telematics Systems AUTOSAR/OSEK/Micrium OS based Vehicle Interface controllers of varying nature from wakeup controllers to Vehicle Controlling processor Unit (VCPU) that behaves as “The” gateway to the vehicle network – All networks including Ethernet routed through VCPU – Significant CPU load

In-Vehicle Networking Domain Based Projects:

Bootloader Projects:

- Key Word Protocol (KWP) Bootloader (worked as architect and manager roles)
- ISO CAN Bootloader (worked as developer, architect, leader and manager roles)
- CAN Calibration Protocol (CCP) Bootloader (worked as architect, leader and manager roles)
- Flexray Bootloader (worked as architect, leader and manager roles)
- HIS Bootloader (worked as principle architect and manager roles)

NOS Development and Porting Projects:

- ASIL B/D based development and porting of NOS COM and NOS NM component to various microcontrollers and cross compilers (worked as architect and manager roles)
- Base development and Porting of NOS COM component to various microcontrollers and Cross compilers (worked as developer, architect, leader and manager roles)
- Base development of KWP2000 Diagnostic project (worked as architect and leader roles)
- Base development and Porting of NOS NM component to various microcontrollers and Cross compilers (worked as manager)
- Base development and Porting of NOS UDS DK component to various microcontrollers and Cross compilers (worked as manager)

Low Level Driver Development Projects:

- Chassis Common Platform Development
- R- MDPS Device Driver Development
- AFLS Low Level Driver

BSW Development and NOS Integration Projects:

- ISO26262 ASIL A based development and integration of Head-Up-Display module
- Development and porting of BSS and XSS modules for various controllers and cross compilers
- R- MDPS Basic Software Development and Device Drivers
- ISO 26262 ASIL C based R- MDPS Basic Software Development

AFLS Platform Development
PSM Application Enhancement and NOS Integration
BSM NOS Integration project

AUTOSAR Domain Based Projects:

AUTOSAR OS based platform for Cluster/Infotainment Projects
Daimler Diagnostic Component (DEM, DCM modules) development
HMC AUTOSAR Integration R2.0
AUTOSAR Integration Project
CCP Modules Integration with Infineon Modules (Infineon MCAL)
BMW Integration for Application and Bootloader (NEC MCAL)
Diagnostic –DEM/DCM modules development and Integration

Tools Domain Based Projects:

Automated Software Verification Tools
C Tools Project and C Source Formatter (CSF)
Signal Parser Tool (SPT)
Network Database Generator (NDG)
Network Configuration Tool (NCFG)