Curriculum vitae

VIVEKANAND. K. C.

📍 Bangalore (India) 📱 +91 9611295481

✉ nitk.vivekanand@gmail.com

📞 +919483037180

SUMMARY:

- ➢ Worked for about 7.2 years with Robert Bosch Engineering and Business Solutions Bangalore, in automotive functional safety design and software development.
- ➢ Around 2.8 years in embedded software development applications.
- ➢ Worked with German and Japanese customers like Daimler, Honda, and Toyota.
- ➢ Good knowledge about SDLC and unit testing LabCAR testing.

JOB RELATED SKILLS:

- **Operating Systems:** Windows XP, 2010.

- **Languages:** C, Assembly Language.

- **Standards and Concepts:** ISO26262, EGAS, FMEA.

- **Configuration Management:** SDOM, IBM Request One (RQ1)

- **Code Editors:** Codewright, Notepad++, XMETAL

- **Microcontrollers:** P89V51RD2, LPC 2129, Infineon Tricore TC17XX, CY 320

- **Protocols:** I2C, SPI, RS-232, CAN, UART, ISO 15118.

- **Charger product:** BHARAT DC001, CCS2.

- **Cross Compilers:** Keil C51.
  Tools: RTRT, UDE, CANalyzer, TPT, ASCET, LabCAR, INCA, MATLAB Simulink

PREFERRED JOB:

Electric Vehicle Design (Hybrid), Testing of EVs and Automotive Functional Safety

Oct 2023 to Till-date: iElektron Technologies Pvt Ltd Bangalore

Role: V&V Lead and Defect Management

Tools: JIRA, Confluence.
          Knowledge about 8-D, GitHub antifactory, BMS software testing, HIL Testing UDS

June 2023 – Dec 2023:   Electric Vehicle Designer

Completed the course on Electric Vehicle Design course @ IntelliPaat Bangalore (India) conducted by **Indian Institute of Technology Roorkee India.**

EV Motors & speed control
Calculating the Vehicle Dynamics, torque & power required by the vehicle, linear controller design,
Space vector modeling of induction machine & vector control for EVs using MATLAB Simulink.

Battery & BMS
Battery modeling & sizing, calculating battery pack for EVs.

Charging infrastructure
Single-phase AC-DC & Isolated DC-DC converter simulation for 3.3kW On-board charger using MATLAB Simulink.
Design calculation of the power factor correction topologies used in EV charging infrastructure.

Charging Stations & Scripting

DC/DC, AC/DC Converter Modeling & Simulation. Design & simulation of AC & DC charge controller. Three - phase AC-DC & DC-DC DAB converter simulation using MATLAB Simulink.

Autonomous Planning & Control of EVs
Longitudinal & Lateral Control of Autonomous Vehicles using MATLAB Simulink.Optimal Trajectory Generation for Urban Driving.
Testing for Electric Vehicle
Penetration, Thermal, Non-Destructive, motor & controller dyno level & vehicle level- setupblock diagrams, measurement characteristics.

Career Gap: Oct 2018 to Oct 2023

WORK EXPERIENCE:

Apr 2015–Sep 2018: Automotive Functional Developer

Robert Bosch Engineering and Business Solutions Limited, Bangalore (India)
Model-based function design and development of Continuous Torque Monitoring (CTM) functionalities for Engine ECU using the EGAS 3 Level Monitoring concepts. CTM was implemented as level2 software in Bosch three-layer safety concepts, and it intends to avoidunintended acceleration and unintended vehicle movement by systematic reactions for the electrical and electronic errors.

In CTM, permitted torque corresponding to propulsion demands is compared with torque being produced by engine to detect the error and react to bringing the vehicle to safe and controllablestate. Permitted torque is calculated by considering propulsion demands, torque increase request from other ECUs in vehicle, loss compensation due to accessories, loss compensationdue components involved in power train and speed governors to calculate permitted torque.
Actual torque is calculated by considering injections done for delivering torque at crankshaft, different injections done for better control on combustions like post and pilot injections and corrections based on physical parameters involved in delivering injections to engine like ZFC,Wave corrections.

Simulation and validation to work on the entire SDLC for safety aspects is carried out static and dynamic code checks using TPT-UDE, StepAge, and IBM's Rational Test Real Time (RTRT).

Details: Implementation of the software to monitor the memory area, ADC channels, SPI communication, peripheral ASIC (CY320), reacting to the errors to bring the vehicle to safe/controllable state and logging of the errors. Below functionalities are monitored.

Tools: Notepad++, RTRT, TPT, UDE, CANalyzer, ASCET, INCA, XMETA
Programming Language: Embedded C.
Hardware: Infineon Tricore TC17XX series

Analyzing functional safety requirements as per ISO26262. Function, software development using ASCET auto-coding by following MISRA guidelines and review of Level 2 safety software. Documentation and integration. Point of contact to customers Functional validation in closed /open loop LabCAR by ETAS. Unit testing and handling RQONE. Participated as Moderator in Failure Modes Effect Analysis (FMEA) discussions.

Aug 2011- Apr 2015:   Sr. Software Engineer

Robert Bosch Engineering and Business Solutions Limited, Bangalore (India)

Worked on real time functional safety monitoring software package of Engine Management System (EMS) ECU's for gasoline & diesel engines. Responsibilities included analysis of customer requirements, function design, embedded C software development, design documentation, integration, validation testing and delivery. Worked on various projects from European and Japanese OEMs. Proficient in Manual & ASCET auto-codingfollowing MISRA guidelines. System testing using CANalyzer. Involved in software reviews. Worked on Mx17, MEDC17, and MDG1 ECU platforms. Knowledge of DGS and MDG1 software coding guidelines. Debugged software issues using Universal Debug Engine (UDE) Debugger.
Familiar with usage of requirement tracking and software configuration management tools. Exposure to Software development life cycle under V model approach. Worked in a team following AGILE methodology.

Dec 2008–July 2011:   Software Engineer

BI-Data Trak Solutions Pvt. Ltd, Bangalore (India)

Patient monitoring in hospitals

Controller: P89V51RD2, LPC 2129.Protocols: UART
Components: RF (Tx & Rx), Heart beat sensor, LCD, MAX 232.
Software used: Keil Microvision 3, LPC2000 utility, flash magic, Embedded C, Win XP.
Role: Analysis and Coding

Energy Monitoring & Managing System of Electrical Appliances

Controller: P89V51RD2.Protocols: UART, I2C
Components: ADC, GSM Modem, LCD, Relay.
Software used: Keil Microvision 3, Flash magic, Embedded C, Win XP.
Role: Analysis and Coding

Web server using 8051.

Environment: Windows XP.
Controller: P89V51RD2.Protocols: UART, I2C
Components: LAN Controller, LCD, EEPROM.
Software used: Keil Microvision 3, Flash magic, Embedded C, Win XP.
Role: Analysis and Coding

Child Monitoring System for Malls

Environment: Windows XP.Role: Analysis and Coding
Controller: P89V51RD2 Components: RF(Rx & Tx),
Software used: Keil Microvision 3, Flash magic, Embedded C, Win XP
Role: Analysis and Coding

Integer Software Solutions Bangalore

Aug 2007–July 2008:   Embedded Systems Trainer and Developer

June 2004–May 2006:   Embedded Systems Trainer

EDUCATION

Aug 2003–June 2007:   Mater of Technology (System Analysis & Computer Applications)

National Institute of Technology Karnataka, Surathkal (India)
Passed System Analysis and Computer Application (SACA) with 5.63 CGPA out of 10

Nov 1997–Mar 2002:   Bachelor of Engineering (Electrical & Electronics)

University Visvesvaraya College of Engineering, Bangalore (India)Passed Bachelor of Engineering (E&E) with 55 %

Aug 1993–Mar 1997:   Polytechnic (E&E)

Dept of Technical Education Bangalore (India)

Diploma (POLYTECHNIC E&E) passed with 56%

Education Gap: July 1990 to June 1993

PERSONALSKILLS

LANGUAGES: Kannada,

English & HindiCOMMUNICATION SKILLS:

Good in presentation and negotiation skills.
Worked in various types of teams like monitoring and integration. Worked in a European dimension for about 6 months in Germany.

PERSONAL INFORMATION:

Sex Male | Date of birth 01/09/1974 | Nationality Indian