# **Ahmed Hashesh**

## Senior Embedded SW Engineer

Embedded Software Engineer with 4 years of experience in Embedded and Automotive industry with a focus on ADAS products. Compiled solid experience in Software-Hardware Interfacing including SIP and MCAL configuration and integration activities specially over Infineon Tricore Architecture. Designed and implemented different AUTOSAR software components with in-depth exposure to functional safety critical requirements based on ISO26262.



present

2019-01

## **Experience**

## 2019-01 - Senior Embedded SW R&D Engineer

**Avelabs LLC. - Contractor to Aptiv USA** 

Ford DAT2.0 AUTOSAR ADAS Project as a part of Aptiv team.

Main responsibilities:

- Functional safety requirements implementation:
  - Designed and implemented AUTOSAR complex device drivers (CDD) like Reset Manager, External WDG and Safety Management Unit (SMU).
  - Modifying the linker script to match the system memory map architecture.
  - Modifying the startup code to add the functional safety hardware tests.
  - Migration of the OS from scalability class 1 to scalability class 3.
  - Design and implementation of traps handling mechanisms.
  - OS configuration including Protection & Error Hooks .
  - Design and implementation of the Memory Protection Unit (MPU).
  - ASIL-B and QM freedom from interference mechanisms implementation according to ISO26262 including stack protection and memory isolation.
  - Trusted and non-trusted OS configurations.
  - Design and implementation of SWC to verify the completeness and compatibility of different SW downloaded on a multiple-chip ECU.
  - Debugging and tracing different software issues in multi-core environment.
  - Implementation of external flash memory protection driver.
  - Collaboration with the bootloader team for the functional safety activities.
- · Maintaining of the Software-Hardware interface.
- Configuring AUTOSAR SWCs and port interfaces using Vector Davinci tools.
- Developed satellite SW components that involves multiple instances on multi-core platform.
- Developed scripts using Python.
- Lead a team responsible for platform and firmware activities.

## 2017-05 - Embedded SW R&D Engineer

**Avelabs LLC. - Contractor to Aptiv USA** 

Ford DAT2.0 AUTOSAR ADAS Project as a part of Aptiv team.

Main responsibilities:

- Responsible for MCAL Configurations:
  - Creation of IoHwAbs CDD.
  - Configuring different ADC channels, SPI, Ports and DMA to match the system requirements.
  - Importing different MCAL modules in EB Tresos.
  - · Creation of python scripts for cheetah tool interfacing.
  - Maintaining and updating Lauterbach scripts.
- Responsible for Hardware bring-up activities:
  - Different SIP integration activities.
  - MCAL integration and re-configuration to match the new hardware design.

# **Q** Personal Info

#### Address

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#### **Phone**

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#### LinkedIn

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C/C++

Assembly

**AUTOSAR** 

Python

ISO-26262

MATLAB

MicroSAR OS - FreeRTOS

Infineon TriCore Architecture

Multi-core Programming

Communication protocols: UART,

I2C, SPI, CAN

LATEX and Doxygen

QT and PyQT

Socket programming

Machine learning



### **Tools**

Lauterbach Trace32

Vector DaVinci Configurator &

Developer

**EB** Tresos

Vector CANoe

**JIRA** 

- Different OS configurations including adding new OS applications, ISRs and tasks using Vector Davinci Configurator.
- Reviewing and verifying the schematics of the new hardware design.
- Requesting changes to the hardware design to match the software requirements.
- Prepare software test packages to validate the new HW functionalities.
- Porting the SW to adapt with the new Hardware.
- Interaction with the HW team including on-site support.
- Implemented a GUI Tool using Python and PyQT to generate Software specifications for the different projects.

## 2016-06 - Embedded DSP SW Engineer

## 2017-04 Axxcelera Egypt LLC. subsidiary of Axxcelera Broadband Wireless

LTE Advanced Project. Responsible for the Framework, Integration and Platform.

- Porting system on multi-core processors.
- Implementing overall design in C over RTOS.
- Integrating components into overall system.
- Platform-dependent optimization.
- Maintenance of developed code and bug fixing.
- develop Testing scripts using Python.
- Integrate the L1 layer with higher layers.
- Validating system performance and stress testing.
- Worked with Free-scale Multi-Core Architecture and Code Warrior Compiler



# 2015-09 - Information Technology Institute (ITI), Wireless 2016-06 Communications Track, 9-Month Diploma

- Distinct as First of my Class
- Graduation Project: Device free person tracking system.

# **Faculty of Engineering, Alexandria University,**

2012-06 Communication and Electronics, BSc.



# **Certificates and Courses**

Driving License.

IELTS - Academic certified (Grade: 6.5).

2018-10 Neural Networks and Deep Learning - deeplearning.ai

2018-10 Intro to Machine Learning - Udacity

2018-10 Intro to Computer Vision - Udacity

**2018-05** Intro to Functional Programming - **Udacity** 

2018-04 Machine Learning & Al Foundations: Value Estimations - LinkedIn

2018-04 Artificial Intelligence Foundations: Thinking Machines - LinkedIn

**2017-09** Programming for Everybody (Getting Started with Python) - Coursera,

by University of Michigan

2017-08 Algorithmic Toolbox - Coursera, by University of California, San Diego and

**Higher School of Economics** 

Polarion

Compilers: Tasking, GCC

SCM: Plastic, HG, SVN, Git

IDEs: Code warrior, Eclipse, Visual

studio Code, Keil

HW tools: Oscilloscope, multimeter, function generator



**English** 

Fluent

**Arabic** 

Native