



Mohamed [REDACTED]

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[REDACTED]

Gender: Male Date of birth: 01/06/1980 Nationality: Egyptian

ABOUT ME

Electronics and Communications Engineer with **R&D** experience in **V-model** with **Agile** methodology to deliver Embedded **C/C++** stacks, **SystemVerilog/SystemC** based **FPGA** Virtual Emulation models to accelerate HW/FW/SW development and validation.

WORK EXPERIENCE

[01/12/2018 – 31/07/2023]

Embedded Software Engineer

HELLA Aglaia Mobile Vision GmbH hella-aglaia.com

City: Berlin | Country: Germany

- Configuration Management based on **A-SPICE SUP8** using **PTC Integrity**.
- Change Request inspection as a project **CCB** member.
- Release Management based on **CI/CD**.
- Software requirement analysis using **Rational DOORS**.
- Software design based on **UML/SysML** using **Rational Rhapsody**.
- Software development based on **Embedded-C** using **Eclipse IDE**.
- Software flash and debug on **ECU** using **Renesas E1 Emulator**.
- Static code analysis based on **MISRA-C** using **QA-C** and **Polyspace**.

Technology: **A-SPICE, AUTOSAR, E1 Emulator, Embedded-C, Functional Safety, MISRA-C, Polyspace, PTC Integrity, QA-C, Rational DOORS, Rational Rhapsody, Renesas RH850, SysML**

[05/02/2018 – 30/11/2018]

System Architect (External)

NXP GmbH nxp.com/products/security-and-authentication/security-controllers/MC_71108

City: Hamburg | Country: Germany

- Automated the test bench environment based on **Make** files using tool-chain of **RISC-V**.
- Participated in architecture definition of memory paging for secure element **SE** using **UML**.
- Developed high-level system model for the architecture based on **TLM** using **SystemC/C++**.
- Measured architecture performance based on **Python scripts** using **Cadence Incisive**.

Technology: **GCC, Git, GNU Make, NC-Sim, Python, RISC-V, Secure Element, SystemC, TLM, UML**

[11/09/2017 – 02/02/2018]

Flash Bootloader Integration Engineer (External)

Vector Informatik GmbH vector.com/vi_flashbootloader_en.html

City: Stuttgart | Country: Germany

- Configured the **Bootloader** using **GENy** based on automotive **OEM** requirements.
- Ported the **Bootloader** on **ARM** based **ECUs** and flashed it on the board using **vFlash**.
- Debugged **CAN** bus using **CANoe/CANcase** and **Oscilloscope**.

Technology: **ARM, CANoe, CubeSuite+, GHS MULTI, IAR Embedded Workbench, Micro-controllers, Oscilloscope, Renesas Flash Programmer**

[01/02/2017 – 30/06/2017]

Telecommunications System Engineer

Gemalto M2M GmbH (Acquired by Thales April 2019) gemalto.com/deutschland/iot/m2m

City: Berlin | Country: Germany

- Analyzed **2G/3G/4G** wireless requirements of user equipment **UE**.
- Derived product **HW/SW** features based on customer requirements.
- Reviewed **3GPP** standards according to relevance for company products.

Technology: **2G/3G/4G, 3GPP, LTE-M, NB-IoT**

[01/02/2015 – 04/05/2016] **Emulation Engineer**

Intel Corporation jobs.intel.com/es/countries-mexico

City: Guadalajara | **Country:** Mexico

- Developed and supported an emulation **transactor** using **C++/SystemVerilog** and integrated it with a **Cache Coherency Bus Functional Model (BFM)** to validate **x86 CPUs**.
- Planned **emulation** strategy for **Intel X-GOLD** modem baseband with validation partners.
- Released the **emulation** models by compiling, synthesizing and integrating the **RTL** designs with **Python** test benches hosted on **Simics virtual platform** using **VELOCE/Zebu** emulator.
- Supported **pre-silicon emulation** model usage by providing training for validation teams.
- Coached dry run sessions for **Intel Design and Technology Conference DTTC 2015**.

Technology: **x86, C++, Cache Coherency, FPGA, GCC, GDB, Git, GNU Make, Linux, ModelSim, Python, RTL, Simics, SystemVerilog, VCS Simulator, Veloce Emulator, ZeBu Emulator**

[01/02/2010 – 31/01/2015] **Embedded Software Engineer**

Intel Corporation en.wikipedia.org/wiki/Intel_Mobile_Communications

City: Cairo | **Country:** Egypt

- Designed software stack use cases based on **UML** using **Visio**.
- Developed software of **LTE NAS** for **Intel XMM** modems using **Embedded-C** under **RTOS**.
- Debugged software stack code using **Lauterbach TRACE32**.
- Implemented **unit tests** for **LTE control (NAS/RRC)** based on **3GPP** conformance scenarios.
- Increased software **maintainability** by merging code of similar use case scenarios.
- Reviewed **code** and **bug fixes** done by developers as a **component expert**.
- Supported testing of **Intel XMM** modem using **Rohde & Schwarz CMW500**.
- Traveled to Intel Germany to support bring up of first **Intel XMM 2G/3G/4G** cellular modem.

Technology: **3GPP, Embedded-C, Eclipse IDE, GCC, GDB, Klocwork, Lint, Linux, LTE, Rational ClearCase, Rational ClearQuest, R&S CMW500, RTOS, SVN, ThreadX, TRACE32, Unit Test**

[01/07/2007 – 31/01/2010] **Technical Support Engineer**

NILE.COM nilecom.com.eg

City: Cairo | **Country:** Egypt

- Deployed and maintained **IBM** Servers, Storage and Blade Systems.
- Integrated **Windows** and **AIX** Systems using **MS-Services** for **UNIX**.
- Participated in planning and documenting the **Technical-Support** activities.

Technology: **AIX, Blade server, CompTIA A+, NAS/SAN storage, RAID**

[15/02/2006 – 30/06/2007] **Customer Service Engineer**

Al-Ahly Computer Equipment (ACE) ace-egy.com

City: Cairo | **Country:** Egypt

- Executed preventive and requested maintenance of elector-mechanical and laser printers.
- Kept good relations with customers by ensuring quality of service and meeting deadlines.

Technology: **Dot-Matrix printers, Laser printers, Line printers**

EDUCATION AND TRAINING

Hardware Description Languages for FPGA Design, 2023

Coursera (Online) coursera.org/verify/3N9HGQNFUAP4

SystemC Language Fundamentals, 2022

Cadence Design Systems (Online) credly.com/badges/27111031-5f61-4db4-9635-1951262f8796

SystemC Transaction-Level Modeling (TLM2.0), 2022

Cadence Design Systems (Online) cadence.com/en_US/home/training/all-courses/84488.html

Design for Test Fundamentals, 2022

Cadence Design Systems (Online) cadence.com/en_US/home/training/all-courses/82125.html

Basic Static Timing Analysis, 2022

Cadence Design Systems (Online) credly.com/badges/58bcfd68-7caf-4289-ad24-2c2e3659f819

Software Processes and Agile Practices, 2022

Coursera (Online) coursera.org/verify/XMAP7V3XY9P9

Cybersecurity Essentials, 2018

Cisco Networking Academy (Online) netacad.com/courses/security/cybersecurity-essentials

Introduction to IoT, 2018

Cisco Networking Academy (Online) netacad.com/courses/iot/introduction-iot

Master of Engineering in Microelectronics System Design, 2013

Nile University (Egypt) eas.nu.edu.eg/program/master-engineering-microelectronics-system-design

| **Final grade:** 3.18/4 | **Level in EQF:** EQF level 7 | **Thesis:** Floating-Point ALU implementation based on IEEE 754

- **ASIC/FPGA Design:** Verilog HDL, ModelSim Simulation, Xilinx ISE Synthesis, Place&Route.
- **VLSI/Full Custom Design:** Mentor IC Station Schematic, Simulation, Layout, DRC, LVS, PEX.

CCNA Exploration, 2010

Cisco Networking Academy (Egypt) netacad.com/courses/networking

Embedded Systems Track, 2009

Software Engineering Competence Center (Egypt) mci.gov.eg/en/Human_Capacity/SECC

VLSI System Design, 2008

National Telecommunications Institute (Egypt) nti.sci.eg

- **Analog** design using Cadence Virtuoso.
- **Digital/VHDL** design using Mentor FPGA Advantage.
- **PCB** design using Mentor Xpedition.

CompTIA A+, 2007

CompTIA (Online) credly.com/badges/dc83dff2-7664-4a74-b3e9-e1534cd8d12b

Bachelor of Electronics and Communications Engineering, 2005

Cairo University (Egypt) eece.cu.edu.eg/content/undergraduate

| **Final grade:** 74.6% | **Level in EQF:** EQF level 6 | **Thesis:** JPEG Trans-coding Proxy Server Software for Wireless Clients

PUBLICATIONS

[2022] [Securing Hardware from Malicious Attacks](#)

M. Abdelgawad and M. A. Azer, "Securing Hardware from Malicious Attacks," *2021 16th International Conference on Computer Engineering and Systems (ICCES)*, 2021, pp. 1-4, doi: 10.1109/ICCES54031.2021.9686147.

LANGUAGE SKILLS

Mother tongue(s): Arabic

Other language(s):

English

LISTENING C1 READING C1 WRITING C1

SPOKEN PRODUCTION C1 SPOKEN INTERACTION C1

German

LISTENING A1 READING A1 WRITING A1

SPOKEN PRODUCTION A1 SPOKEN INTERACTION A1

Levels: A1 and A2: Basic user; B1 and B2: Independent user; C1 and C2: Proficient user