

PERSONAL INFORMATION

FIRST NAME / SURNAME **Vincenzo Frascino**
RESIDENCE ADDRESS 88 Hales Barn Road
CB99SE Haverhill, Suffolk (UK)
TELEPHONE **+44 7544 273574**
E-MAIL vincenzo@kernel.org

WORK EXPERIENCE

DATES April 2022 – Today
POSITION HELD Software Architect (Principal Software Engineer)
EMPLOYER **ARM Ltd**
ACTIVITIES Software Architect for the Morello Software Technology Program
DESCRIPTION Main responsibilities:

- Architect Software Solutions for Morello (SoC and Architecture).
- Interact with Program Manager and Technology Manager to make sure that the high-level requirements fit the overall design and break them down for the various teams involved in the Program.
- Define the responsibilities of the various teams involved in the Program.
- Define a release schedule and strategy for the Morello Program.
- Make sure that all the deliverables from the various team involved are ready for release and fit the overall design and schedule.
- Tech Lead the Linux Kernel team responsible for the Morello Pure Capability ABI.
- Define a strategy to allow public contributions to the Morello Software ecosystem and present it to partners.
- Discuss with the Legal Team in order to define a blanket agreement that allows Morello contributions to all the Open-Source projects that fall under certain licences.
- Define, Design and help to Implement the Morello SDK and collaborate to the integration of the Fast Model (FVP),
- Define, Design and help to Implement Morello Linux. A standard Linux RootFS image for Morello based on Debian that integrates all the tools and libraries useful to build Pure Capability applications.
- Define and Design a testing strategy for the Capability based software that leverages pre-existing test environments (e.g. kselftest, LTP, musl libC test suite, etc.).
- Define, Design and help to Implement the public CI for Morello.
- Present the Morello Software to the Partners and the Universities involved.
- Train PTUGs and Interns on the use of Capabilities and help them to become an important part of the team (circa 20 in the last 2 years).

Currently acting as vDSO Maintainer and Official Reviewer for KASAN (MTE) in the Linux Kernel.

DATES May 2018 – April 2022
POSITION HELD Staff Kernel Engineer
EMPLOYER **ARM Ltd**
ACTIVITIES Linux Kernel Developer
DESCRIPTION Involved in the design, development and upstreaming of Linux Kernel features such as:

- arm64 MTE/PAC/BTI
- Unified vDSO (arm, arm64, x86, mips)
- Fix clock_getres (arm64, nds32, powepc, s390)
- Make kuser helpers configurable on arm64
- Other minor tasks.

Author of 100+ patches in the Linux kernel:

<https://git.kernel.org/pub/scm/linux/kernel/git/torvalds/linux.git/log/?qt=grep&q=vincenzo+rascino>

DATES April 2017 – April 2018
POSITION HELD Senior Embedded Software Engineer (Staff Software Engineer from April 2018)
EMPLOYER **ARM Ltd**
ACTIVITIES Involved in the porting of various components of the Android framework for a new ARM based architecture
DESCRIPTION I am involved in the porting of various components of the Android framework for a new ARM based architecture:

- Linux Kernel
- Bionic (libc)
- Jemalloc (memory allocator)

In the last few months, I spent most of the time implementing a minimum set of Linux Syscalls required to run basic workloads on the new architecture.

Regarding the Zephyr Project I am still acting as a Maintainer for Beetle and MPS2 arm Cortex-M platforms.

DATES October 2015 – April 2017
POSITION HELD Senior Embedded Software Engineer
EMPLOYER **ARM Ltd**
ACTIVITIES Involved in the Design and Implementation of IoT Embedded Software
DESCRIPTION I was involved in the design and implementation of IoT software for the v6M, v7M and v8M based architectures.

For one year and a half my main responsibilities were the design and implementation of the BSPs of the ARM Beetle and MPS2 platforms.

In doing so, I was involved in the development of the Mbed OS and the Zephyr platforms.

Mbed OS contributions:

<https://github.com/ARMmbed/mbed-os/commits?author=fvincenzo>

Zephyr contributions: <https://qoo.gl/Zolrvk>

When it comes to Zephyr I was involved in the Design and Implementation of the Security Architecture based on ARM MPUs.

DATES	June 2013 – September 2015
POSITION HELD	Senior Engineer
EMPLOYER	Qualcomm Ltd
ACTIVITIES	Involved in Automotive Infotainment Projects and in Power Management support for Mobile devices.
DESCRIPTION	<p>I was involved in Automotive Infotainment Projects and in Power Management support for Mobile devices based on Krait's family processors.</p> <p>The main Operating Systems on which my support activity was based included:</p> <ul style="list-style-type: none">• Android• QNX• Linux• Yocto based GenIVI (Linux) <p>The support activity consisted in helping the customers to develop and customize:</p> <ul style="list-style-type: none">• Automotive Specific Features• Android Optimizations Device Based• Power Management Frameworks:<ul style="list-style-type: none">○ Standby○ Suspend to Ram○ Hibernation• CPUfreq framework• Device Drivers Power Features <p>The job involved frequent travelling to customers in Europe and USA and preparing Technology Demos for the customers.</p>

DATES	May 2011 – May 2013
POSITION HELD	Android and Linux Kernel Developer
EMPLOYER	ST Microelectronics
ACTIVITIES	Involved in Android and Linux Kernel Development and in Power Management features.
DESCRIPTION	<p>I was involved in Android and Linux Kernel development and in Power Management design and development for ST's SPEAr processors family based on ARM v5 and v7. I acted as internal Android Kernel tree maintainer for ST's SPEAr Cortex-A9 based architecture and my tree can be found on:</p> <p>http://git.stlinux.com/?p=spear/android-2.6.git;a=summary .</p> <p>I also contributed to the development of many parts of the ST's SPEAr BSP for the Linux Kernel tree that involve:</p> <ul style="list-style-type: none">• Power Management support for SPEAr family:<ul style="list-style-type: none">○ Standby

- Suspend to Ram
- Hibernation
- CPUfreq framework support for SPEAr family (Added 600Mhz Frequency Support)
- Thermal Sensor Driver
- Accelerometer Driver
- Magnetometer Driver

This can be demonstrated on:

<http://git.stlinux.com/?p=spear/linux-2.6.git;a=summary> .

The Thermal Sensor Driver was accepted in mainline and is accessible on kernel.org.

I gained experience in Hw and Kernel debugging with Lauterbach.

Additionally, I worked on SPEAr platform support for U-Boot and X-loader.

DATES	November 2010 – April 2011
POSITION HELD	Avionic Embedded Software Developer
EMPLOYER	Alenia Aermacchi
ACTIVITIES	Involved in M346 “Master” FCC Project and in STANAG 5500 Project
DESCRIPTION	<p>I was involved in the M346 FCC project working mostly on three CSCI: Acquisition Data Module (ADM), Control Law Library (CL-LIB) and Parameter Connection Management Module (PCMM).</p> <p>Regarding ADM Module, I modified the Software Requirements Document (SRS) and the Software Design Document (SDD) to adapt them to Alenia Aermacchi Standard Template. I developed the Software Verification Cases and Procedures (SVCP) Document which contains all the Model and Requirement test cases (RBT and MBT) of the ADM Module. All the three documents were developed for the DO-178B Certification using Artisan Studio release 7.2, Matlab Environment release 2010 and Ada 83 Language.</p> <p>Using Artisan Studio release 7.2 I wrote the descriptions of the Model and Requirement test cases (RBT and MBT) on CL-LIB Module.</p> <p>On PCMM Module, I developed the Software Requirements Document (SRS), the Software Design Document (SDD), and the Ada 83 Source Code using the programming by contract methodology. To complete these tasks, I used Artisan Studio release 7.2, Artisan Studio release 7.2 Code Generator, Ada 83 Language, Green Hills AdaMulti 4.3 Compiler, SUN Solaris Operating System 5.8, and SPARK Specification Language and Examiner.</p> <p>Applicable to all CSCIs, I developed a mathematical theory that estimates, through a mathematical formula, the minimum number of samples that should be applied to the inputs in order to catch all the errors present in the code. This theory is contained in an Alenia Aermacchi document titled “Analytical Method for Requirements Based Test Definitions”. To develop this theory, I have used Ada 83 Language, Green Hills AdaMulti 4.3 Compiler, SUN Solaris Operating System 5.8, and Matlab 2010 Environment.</p> <p>I was involved in the STANAG 5500 Project where I contributed to the development of a software that recognizes the messages based on the STANAG 5500 standard and that permits the valorisation of these messages through graphical items. To perform these</p>

tasks, I used the instruments provided by Microsoft Visual Studio 2008, the C++ language and the MFC library set.

DATES December 2009 – October 2010
POSITION HELD Avionic Embedded Software Developer
EMPLOYER **Tales Alenia Space**
ACTIVITIES Involved in Expert-DHU (ESA project), EFA project, Sentinel 1 project, and M346 “Master” SMS Project
DESCRIPTION The Expert ESA Project: I developed the Data Handling Unit (DHU) test software to collect data from four different types of sensors working with WindRiver VxWorks OS version 6.3 and the C language on PowerPC 4xx Architecture. I programmed the serial ports based on the standards 422 and 485, the bus 1553 and I used the Military standard DO-178B.
EFA project: I tested onBoard software working with TestBed and ADA83 language.
Sentinel 1 ESA Project: I tested the Mass Memory software working with IBM Test Realtime.
M346 project: I worked on SMS (Store Management System) test RIG based on x86 Intel Architecture and Concurrent RedHawk Linux RealTime OS.

DATES September–November 2009
POSITION HELD WebRatio Specialist / Web Services (SOA) Developer
EMPLOYER **GIGroup S.p.A.**
ACTIVITIES Expert of a new technology developed by Politecnico di Milano: WebRatio.

DATES April-September 2009
POSITION HELD Web Developer
EMPLOYER **Jabs Solutions and GiGroup**
ACTIVITIES I worked as web developer and designer.

DATES 06 October 2007 - December 2008
POSITION HELD C++ Programmer
EMPLOYER **Politecnico di Milano**
ACTIVITIES I worked on Panda project. In particular, I implemented the CONTEST algorithm for circuit simulation into the pre-existing Panda framework.

DATES February 2007 - June 2007
POSITION HELD C Programmer on Embedded Systems
EMPLOYER **CEFRIEL Research Center of Politecnico di Milano**
ACTIVITIES I worked on the customization of an existing operating system for a Lattice Inc. FPGA board. The development board used was Lattice XP2 based on Mico32 soft-core architecture. The operating system used was Micrium uC/OS-II version 2.78. The development instrument used was ispLEVER that uses internally GCC and GNU utils for cross-compilation on Mico32.

DATES 01 September 2006 - 27 July 2008

POSITION HELD	System Administrator
EMPLOYER	Fondazione Ceur - Collegio Città Studi Via Ampere 3, 20131 Milano (Italy)
ACTIVITIES	I worked as System Administrator on a small size network (100pcs).
DATES	10 January 2006 - 07 July 2007
POSITION HELD	C programmer on Embedded Systems
EMPLOYER	MicroArchitecture LAB of Politecnico di Milano
ACTIVITIES	I worked on Osyris branch of Earendil project in Dresd group. The main activity was the creation of an automatic build system, based on the PPC-4xx toolchain, for the cross-compilation of Embedded Linux on that platform. The development boards involved was Xilinx Virtex 2 VP-7 and VP-20 and Xilinx Virtex 4, all based on various versions of PPC hard-core belonging to family 4xx. The development instruments used were ISE ed EDK version 7 and 8, in particular the 8.1 for the Dinamic Reconfigurability support. The Embedded Linux platform used was Denx and Montavista ELDK for Virtex 2 platform and Petalogix for Virtex 4. The cross-compiler used was based on GCC and other GNU utilities.
EDUCATION AND TRAINING	
DATES	18 September 2009
QUALIFICATION	Engineer
SUBJECTS	Esame di Stato
ORGANISATION	Politecnico di Milano
LEVEL	Vote: 90/100
DATES	10 October 2005 - 20 April 2009
QUALIFICATION	Master Degree
SUBJECTS	Computer Science Master Engineering Doctor
ORGANISATION	Politecnico di Milano
LEVEL	Vote: 95/110
THESYS TITLE	"Progettazione e sviluppo di un web container per applicazioni legacy e di nuova concezione: eDesktop " (involves Android Platform for mobile clients)
BRIEF THESYS DESCRIPTION	The main goal of the thesis was the design and development of a platform for the integration of legacy and new conception applications. One of these new conception applications involves Google Android Platform that is based on Embedded Linux for ARM processors.
DURATION OF THE THESYS	12 Months
DATES	01 October 2002 - 27 September 2005
QUALIFICATION	Bachelor Degree
SUBJECTS	Computer Science Engineering Doctor

ORGANISATION LEVEL	Politecnico di Milano Vote: 88/110
THESYS TITLE	"Implementazione di un sistema di gestione per un IP-Core in ambiente GNU/Linux embedded: infrared data association" (involves Xilinx Virtex II FPGA http://www.dresd.org/?q=node/80)
BRIEF THESYS DESCRIPTION	The main goal of my thesis was the implementation of a device driver for the Linux Kernel and the porting of some utilities for the management of an IRDA IP-Core on a Virtex 2 FPGA Board. This Board provides a hard-core PPC-4xx without MMU and so the chosen way to solve the problem was to use a version of MontaVista Embedded Linux that doesn't need that particular component. The instruments used for the architecture design were ISE and EDK version 7.1, the Linux Kernel version was 2.4.20 and the tool-chain was based on GCC 3 for PPC arch.
DURATION OF THE THESYS	8 Months
DATES	10 September 1997 - 10 August 2002
QUALIFICATION	High School Degree
ORGANISATION LEVEL	Liceo Scientifico "E. Mattei" di Castrovillari (CS) Vote: 100/100
DATES	May 2003
QUALIFICATION	Security Manager Certificate
ORGANISATION	Webbit Padova
DATES	December 2003
QUALIFICATION	TOEFL
ORGANISATION LEVEL	ETS Vote: 217 / 300
DATES	October 2007 - January 2008
QUALIFICATION	Education System i Certificate 2007-2008
ORGANISATION	IBM and Fondazione Politecnico
PERSONAL SKILLS AND COMPETENCES	
SOCIAL SKILLS AND COMPETENCES	I participated in Agesci Scout Group and I played for three years in a football team.
SOFT SKILLS	Good organizational skills: Representative of Ceur Students Board in 2006-2007
TECH SKILLS	Good technical skills and competences in Operating Systems, Code Debugging and Dynamic Reconfigurability environments

COMPUTER
SKILLS AND
COMPETENCES

Languages: C, C++, ADA, JAVA Core and Enterprise, PHP, UNIX shell scripts, HTML,
JavaScript
FPGA Enviroment: Lactice and Xilinx major toolkits
Platforms: Windows, different versions of Unix and Linux, VxWorks, OS\2, BeOS, OS400,
SUN Solaris and others.
Development Environment Used: Eclipse, Anjuta, Kdevelop, CodeLite.
Concepts: dynamic reconfigurability, operating systems, network and web designing

SKILLS AND
COMPETENCES
DRIVING
LICENCE(S)

I love art and classical music

B

Mother tongue(s)
Italian, Albanian