# Fernando Franco

*Curriculum Vitae*

## Personal Data

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| Date of Birth | 12 November 1981 |
| Address | Roosstrasse 44c, *8105*, Regensdorf, Switzerland. |
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## Summary

**Ph.D. SW Engineer** with a solid professional background in the overall SW life-cycle and with deep knowledge of real-time, safety critical and embedded systems. Significant research experience in computer vision, image processing and machine learning. Passionate about algorithms and technology. Highly organized with strong capacity to prioritize workload, reach the goals and complete the projects within deadlines. Skilled in interfacing with customers/suppliers and working in multidisciplinary teams.

## Experience

**2015–Present** **TCMS SW Engineer**, *Bombardier Transportation AG*, Zürich, Switzerland.
- Design, development and implementation of visualization software for TRAXX South Africa locomotives: full customer acceptance, commissioning in progress.
- Concept preparation, requirements formulation and implementation of diagnostic software for TRAXX MS locomotives: assessment completed within the deadline.
- Execution of module and system test in the laboratory and on the locomotives.

**2010–2015** **R&D SW Engineer**, *GE Transportation*, Florence, Italy.
- Design, development and implementation of software for a generic real-time and safety critical platform (GE Tempo) used for train control and signaling applications. The platform was selected to equip Singapore metro lines and qualified to equip Hong Kong metro lines.
- Design, implementation and test of software for an high-precision odometer system equipped with different sensors (wheel speed, radar motion, balise transmission module).
- Implementation of software for different embedded platforms:
  - multiplatform microkernel and memory-management system;
  - device drivers and communication protocols;
  - bootloaders for remote upgrade of firmware over network.
- Definition, analysis and tracing of system and software requirements.

**2009–2010** **Computer Scientist**, *Media Integration and Communication Center*, Florence, Italy.
- Development of an algorithm to estimate the 3D local pose of surface elements corresponding to image key-points using statistical learning: improved accuracy by 10%.
- Implementation of algorithms for content-based image retrieval and image processing.

## Education

2010–2013  **Doctor of Philosophy (Ph.D.)**, *University of Florence*, Italy.
- Computer Vision and Image Processing algorithms
- Machine learning and Pattern Recognition

2006–2008  **M.Sc.**, *University of Florence*, Italy, *110/110 cum laude*.
- Computer Engineering.

## Languages

Italian  **Native**

English  **Fluent**

German  **Basic**

## Skills

Core competencies  Embedded, real-time and safety-critical systems; algorithms; computer vision and image processing.

Languages  Expert in C and C++, Proficient in Matlab, Familiar with Java and Python

SW Tools  Emacs, Eclipse, MS Visual Studio, Matlab, Xilinx SDK, Code Composer Studio, Freescale Codewarrior, GIT, SVN

Other Tools  IBM rational DOORS, Polarion, SysML MagicDraw

Embedded Platforms  ARM, PowerPC, MicroBlaze.

Communication buses  Ethernet, Modbus, TCP/IP, SPI, I2C, RS232, USB.

Standards  CENELEC (50-126, 50-128, 50-129) and other rail standards.

Training  Triz problem solving, Influencing skills.

## Publications

D. Longo F. Franco A. Pennisi, G. Schillaci. Detecting tomato crops in greenhouses using a vision based method. *International Conference on Safety Health and Welfare in Agriculture and in Agro-food Systems*, 2013.

A. Del Bimbo F. Franco, F. Pernici. Local homography estimation using keypoint descriptors. *IEEE International Workshop on Image Analysis for Multimedia Interactive Services*, 2010.

A. Del Bimbo F. Franco, F. Pernici. Local pose estimation from a single keypoint. *IEEE International Workshop on Non Rigid Shape Analysis and Deformable image Alignment (CVPR)*, 2010.

A. Del Bimbo F. Franco, F. Pernici. *Analysis, Retrieval and Delivery of Multimedia Content*, volume 158, chapter 12, pages 203–213. Springer, 2013.