

Ciro Autiero

Curriculum Vitae et Sturiorum



Personal Data

Date of Birth November 5th, 1977

Nationality Italian

Present Occupation

2011 **Product Owner - System Analyst**, iambOO (Pontedera - Italy), Autostrade Tech (Firenze - Italy).

Description: Within the Autostrade Tech framework, the Product Owner is involved in all the activities related to the preparation of Traffic Management and Tolling projects. The main activities are detailed as follows:

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Product Engineering. The main duty of the PO is to prepare a tolling product that is ideally ever functioning, highly safety and correctly operating over a fixed acceptante percentage. With this aim, the PO is also involved in the individuation of the tolling sub-systems by selecting them on the market and by establish reations with the different providers.

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Solutions Evaluations. The PO is directly in charge to evaluate the solutions the different providers may offer in order to perform a defined function of the tolling system. This is particularly true in the Multi Lane Free Flow systems, for which the technological challenge is ever ongoing and the best solution is ever yet to come. Such an evaluation is performed by collecting data provided from the different systems under test and by performing statistical analysis on the results.

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Systems Engineering. After the tolling product is completed, the PO is in charge to prepare everything is needed to perform a correct and proper installation of the solution on the different locations it is requested. Moreover, the PO has also to monitor the performance of the installed solutions by collecting data and performing data analysis and statistical evaluation.

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Maintenance Activites. Finally the PO is responsible for the training of the customer employees that are in charge for the maintenance activities of the tolling systems.

Previous Occupation

2011 **Software Engineer - Software Analyst**, Intecs S.p.A. Ingegneria e Tecnologia del Software (Pisa - Italy), Ansaldo STS - Signalling and Transport Systems (Genova - Italy).

Description: Within the Ansaldo STS framework the Software Engineer is involved in the developing and testing of safety-system software for railway signalling applications, specifically for the Generic Application of SCMT product usually referred to as Radio Block Center (RBC) compliant with ERTMS/ETCS standard. The main activities are detailed as follows:

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Managing Product Development (Radio Block Center). In this activity the Software Engineer supports the Project Manager and the Business Unit in examining the developments and change requests to the functionalities of the Generic Application of RBC developed according to the standard ERTMS / ETCS. The SE also plans the time - cost of delivery and manages the releases and intermediate milestones towards the Business Unit. Moreover the SE is directly responsible for preparing the documents of the functional requirements (FRS), the requirements of the software and system architecture (SWRS / SAS), finally providing direct support for the compilation of low-level documentation (SAS SW).

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SW Developer (Radio Block Center - Generic Application). The Software Engineer is directly involved in the development of features of the Core and Custom General Application of RBC, with specific attention to code written in the proprietary language ASTS "Logic" (4th level language).

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Verification and Validation. Software Engineer is responsible of the study and execution of unit tests, functional tests, integration tests and system tests on the Generic and Specific Applications of RBC, with particular attention to not introduce defects or malfunctions. The SE also working with RAMS Unit in the preparation and compilation of all documents required to all the different stages of testing (Test Report, Safety Case, Test Log). The SE is moreover directly responsible for the initial phase of the test coverage of product requirements, as well as actively involved in the activities of RAMS compliance tests and product completeness tests. Finally the SE is directly involved in the application of the verification and validation V-model foreseen by CENELEC 50126 and 50128 by directly developing both General and Specific Application and corresponding System Requirements - Software Requirements in the cases of non-compliance or changes of any kind.

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Managing Configuration (Specific Application). In this framework the Software Engineer maintains a system vision on the product and therefore plays as a support to the Business Unit which is responsible of the development of Specification Application, both in the resolution of Issue or Change Request provided by RAMS Unit fixing bugs and non-conformities identified during the development process. The SE also contributes in the selection of the final configuration of the Specific Application of RBC Product.

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RAMS Engineering. In this activity the Software Engineer cooperates with Ansaldo STS RAMS Unit in the analysis of customer requirements regarding the safety of the RBC product, in the verification of the compliance of required customizations to ERTMS/ETCS standard (Subset 026 and Subset 039 - Baselines 2.3 and 3.0). The SE also is involved in assessing the safety-critical hazards that can be found both in the preliminary stage of the project and during the development of standard product by discussing test cases with other company units (On Board Unit Development, Interlocking Development). The SE also works with RAMS Unit in the preparation of the Generic Application safety cases according to CENELEC standards 50126 and 50128.

2011 **Fixed-Term Assignment as Researcher**, Title: *"Self-Assembly Fluorinated Block Copolymers for Nanostructured and Functionalized Films"*, Physics Department "Enrico Fermi" (University of Pisa - Italy), Department of Chemistry and Industrial Chemistry (University of Pisa - Italy).

Description: Study of Microscopic Structure and Stability on the Macroscopic Scale in Polymers

2010 **Fixed-Term Contract as Researcher**, Title: "*Characterization by means of rheology and ESR spectroscopy of recycled polymeric compounds for monolayer production*", Physics Department "Enrico Fermi" (University of Pisa - Italy), Istituto per i Processi Chimico Fisici (IPCF-CNR).

Description: Study of composition and process parameters for producing thermoformed sheets from industrial scrap and recycled PET

2008-2009 **Research Grant**, Title: "*Structural and dynamic properties on different time and length scales in nanocomposite and nanostructured materials for optical nanowriting*", Physics Department "Enrico Fermi" (University of Pisa - Italy), Istituto Nazionale di Fisica della Materia (INFN-CNR) - Laboratorio per le Applicazioni Industriali dei Polimeri PolyLab.

Description: Study of Relaxation and Transport phenomena in Polymers for Optical Data Storage.

Professional Services

2011 **Teaching assistant/tutor of the course "Laboratorio di Fisica II"**, *Physics Undergraduate Degree Programme - Academic Year 2010/2011*, Teacher of the course: Prof. Laura Andreozzi, Physics Department "E.Fermi" (University of Pisa).

Description: Teaching of the most common experiments concerning electricity, magnetism and optics: measurement of voltage and current, fundamental linear and non-linear circuit elements, estimation of the characteristic point of a circuit, resonant circuits, magnetic inductance coefficients, ferromagnetic materials, hysteresis phenomena, optical physics, polarization, interference, diffraction

2010 **Teaching assistant/tutor of the course "Laboratorio di Fisica IVa"**, *Physics Undergraduate Degree Programme - Academic Year 2009/2010*, Teacher of the course: Prof. Isidoro Ferrante, Physics Department "E.Fermi" (University of Pisa).

Description: Teaching of the most common experiments concerning magnetic circuitry, self and mutual inductance coefficients, ferromagnetic materials, hysteresis phenomena, optical physics, polarization, interference, diffraction

2005 - 2011 **Teaching assistant/tutor of the course "Spettroscopia a Radiofrequenza"**, *Applied Physics Undergraduate Degree Programme - Academic Years 2004/2005, 2005/2006, 2006/2007, 2007/2008, 2008/2009, 2009/2010*, Teacher of the course: Prof. Marco Giordano, Physics Department "E.Fermi" (University of Pisa).

Description: Teaching the most common experiments in radiofrequency and instrumentation for impedance analysis in the frequency range di 300 KHz - 6 GHz: measure of basic impedances, resonant circuits, frequency filters, NMR resonators

Training Courses

2017 **Training Course on "Principles of Project Management: Manage by Projects and Manage Activities"**, *Stargate Consulting and Training*, iambOO S.r.L., Stargate Consulting Headquarter - Pontedera (IT).

Description: Explanation of principles of Project Management. The course allowed to gain the Project Management Basic Certification (ISIPM).

2016 **Training Course on "SketchUp Tool"**, *Autostrade Tech*, iambOO S.r.L., Autostrade Tech Headquarter - Florence (IT).

Description: Explanation of main functionalities.

2016 **Training Course on "WireShark Tool"**, *Autostrade Tech*, iambOO S.r.L., Autostrade Tech Headquarter - Florence (IT).

Description: Explanation of main functionalities.

- 2013 **Training Course on “Railway Signalling Principles”**, *Ansaldo Academy*, Ansaldo STS, Ansaldo STS - Genova Headquarter (IT).
Description: Explanation of functionalities and suitability of network analysis WireShark tool.

Education and Training

- 2005-2010 **PhD in Applied Physics**, *School of Graduate Studies "Galileo Galilei" - University of Pisa*, Physics Department "E.Fermi", Istituto Nazionale di Fisica della Materia (INFN-CNR) - Laboratorio per le Applicazioni Industriali dei Polimeri PolyLab.
Description: Study of relaxation and transport phenomena in polymeric materials, mainly polymethacrilates with azobenzene side chain, functional for optical nanowriting and data storage.
- 2003–2004 **Laurea Specialistica in Scienze Fisiche - MSci in Applied Physics equivalent**, *University of Pisa*, Physics Department "E.Fermi", Istituto Nazionale di Fisica della Materia (INFN).
Description: Study of relaxation and transport phenomena in molecular and polymeric glass-formers, by means of electron paramagnetic resonance (EPR), differential scanning calorimetry (DSC) and rheometry of viscoelastic materials. Final Grade: 108/110
- 1997–2003 **Laurea in Fisica - BSc in Physics equivalent**, *University of Pisa*, Physics Department "E.Fermi", Istituto Nazionale di Fisica della Materia (INFN).
Description: Building and characterization of an Electron Paramagnetic Resonance (EPR) spectrometer system, operating in the frequency range 3.9 - 5.75 GHz. Final Grade: 107/110
- 1991–1996 **Diploma di Maturità Classica - Secondary-school-leaving certificate**, *Final Grade: 60/60*, Liceo Ginnasio "Padre Alberto Guglielmotti", Civitavecchia (Rome, Italy).
Curriculum courses: Italian literature, ancient Latin and Greek languages and literature, English language and literature, history, philosophy, math, physics, chemistry, natural sciences.

Languages

- Italian** Mother tongue
- English** Good level of comprehension, speaking and writing.

Scientific Skills

- Nanoscale Experimental Techniques** Interest in several experimental nanoscopic techniques and applications to soft matter physics. Good knowledge of microfabrication techniques as photolithography, chemical printing and etching, learned during the dedicated PhD course "Nanoscale Experimental Techniques".
- SNOM** Good knowledge of equipments for Scanning Near Optical field Microscopy applied to the determination of the topology and surface properties of polymer layers for optical writing on the nanoscopic scale. Wide experience in thermal treatment and annealing of substrates for optical nanowriting.
- Microwave Transmission Lines** Good knowledge of microwave and radiofrequency components: waveguides and coaxial shielded cables, circulators, directional couplers, mixers, microwave sources as klystron reflex and impatt diode, crystal detectors. Good knowledge of instrumentation for microwave circuits testing: spectrum analyzer and network analyzer, microwave synthesizer, power meter.

Electron Magnetic Resonance Excellent knowledge of equipments for EPR spectrometer systems and data acquisition: static magnetic field generator, NMR-probe gauss meter, microwave bridge (direct experience with Bruker 200D SRC bridge), frequency meter, volt meter, temperature control system with liquid and gaseous nitrogen; National Instruments acquisition devices.

Rheometry and Calorimetry Good knowledge of instrumentation for differential scanning calorimetry (DSC) and rheometry: direct experience with calorimeter DSC Perkin Elmer DSC7, rotational stress-controlled rheometer Haake RS150H.

Technical Skills

Data Analysis Proved experience working with different datasets of different sizes and shapes. Well used in running algorithms on large size data effectively and efficiently.

ERTMS and ETCS Projects Proved experience in software projects regarding European Rail Traffic Management System/European Train Control System Level 2. Wide knowledge of ERTMS/ETCS Class 1 specifications: Subset 026 "System Requirement Specification"; Subset 039 "FIS for the RBC/RBC handover".

Software LifeCycle Deep experience in the management of the software developing process, with special regard to implementation, testing and documentation. Documented experience in software development and analysis according to the V-model (parallelization of verification and validation phases).

Technical Documentation Wide experience in writing technical documentation for the management of industrial software projects: System Functional Specifications, Software Requirements Specifications, System Architecture Specifications. Deep experience in requirements tracing between upper and lower level documents.

Applied Statistical Methods Interest in the application of statistical techniques to data analysis and interpolation. Deep experience in experimental data analysis and numerical analysis techniques as uncertainty propagation methods, data rejection criteria, normal distribution conformity, experimental data fit and least squares methods. Wide experience in optimizing model-based predictions to experimental data. Determination of quality of measurements and instrumentation by the analysis of the internal consistency and homogeneity of experimental data by statistical characterization. Good knowledge of Montecarlo simulation techniques.

Numerical Calculation Interest in several numerical calculation techniques and application to soft matter physics problems. I have studied in deep such arguments following the course "Tecniche Numeriche per la Fisica" in the Applied Physics PhD programme. Deep experience in the numerical solution of stochastic problems by means of 1 and 2 level differential equation systems. Wide knowledge of Montecarlo simulation techniques.

Computer Skills

Operating Systems Excellent knowledge of the most common open source linux-based operating systems: Fedora-RedHat, Novell-Suse, Debian-GNU Linux, Ubuntu. Excellent knowledge of Microsoft Windows 98, Windows 2000, Windows ME, Windows XP, Windows 7. Good knowledge of Apple Mac OsX since 10.1.

Programming Languages	Interest in the evolution and development of open source operating systems such as Linux; I usually write software code for Linux OS making use of C and bash languages. Good knowledge of programming languages Fortran77, C, Java, Javascript, DHTML, XML. Good knowledge of Windows environment programming languages VB and C#. Excellent knowledge of instrumentation programming language National Instruments LabView.
Software Lifecycle	Proved experience in the use of the tools of IMB Jazz Platform. Good knowledge of the requirement management suite IBM Rational Dynamic Object Oriented Requirements System (DOORS). Wide experience with the software development team collaboration suite IBM Rational Team Concert, with special regard to the integrated client in Eclipse and to the shell for Windows.
Version Control Software	Wide experience in the version control of software by means of the Subversion system, with special care to the source code, to the code configuration and to the technical project documentation. Deep knowledge of the client SVN, of the Windows shell integration TortoiseSVN and with the Eclipse integration Subclipse.
Office Softwares	Excellent knowledge of the most common softwares for text editing and graphics for Windows and Mac systems: Microsoft Office, Adobe Photoshop, Adobe Acrobat, JASC PaintShop Pro. Excellent knowledge of the most common open source softwares for text editing and graphics: OpenOffice/LibreOffice, Gimp.
Scientific Softwares	Excellent knowledge of softwares for scientific data manipulation and computing: Wavemetrics IgorPro, Microcal Origin, MathWorks Matlab. Excellent knowledge of the most common open source softwares for scientific data manipulation and computing: GnuPlot, Octave.
Professional Text Editing	Excellent knowledge of the professional typographic composition environment LaTeX / TeTeX / TexLive. Wide experience in the document predefined styles and types customization. Wide experience in math formulas and graphics composition and in the management of large bibliographies (BibTex).

Other Experiences

Scientific Divulgateion Participation to interactive expositions organized in Pisa by the Physics Department and the local INFN section.

Interests

Econophysics Study of the techniques and methods typical of physics research applied to the analysis of financial markets and economic dynamics. I have studied in deep such arguments following the course "Econophysics" in the Physics PhD programme.

Reading I greatly appreciate reading books, both in essay and fiction. I have a strong predilection for science fiction. I'm a fan of all genres of movies. I also published reviews of books and films on specialized websites.

Sports Swimming. Deep-sea fishing. Walking.

Pisa, 04 September 2017

With respect to the Dlg 196/03, I authorize the processing of my personal data.