

## Curriculum Vitae of Vincenzo De Leo

- **GENERALITIES:**

**Name:** Vincenzo De Leo  
**Birthplace:** Cagliari (CA), Italy  
**Date of birth:** January 24th, 1977  
**Nationality:** Italian  
**Permanent address:** Via Castiglione 79, 09131 Cagliari (CA) Italy  
**Current address:** Via Todde 8/A, 09128 Cagliari (CA) Italy  
**E-mail:** vincenzo.deleo77@gmail.com

- **EDUCATION:**

**2006 – 2007: Sardinia Region – Sardinia Research – CRS4, Italy**

**Master in “Bioinformatic technologies applied to personalized medicine”**

**Thesis:** “Development of a Chloride channel homology model”.

**Supervisors:** Prof. Paolo Ruggerone, Cagliari University, Physics Dept.  
Dr. Matteo Ceccarelli, Cagliari University, Physics Dept.

**2004 – 2007: SSIS, Cagliari University, Italy**

**High School Teaching Qualifications for Physics, Mathematics and Computer Science**

**2001 – 2004: Cagliari University, Italy**

**Ph.D. in Physics**

**Thesis:** “Muon detector synchronization in LHCb experiment”.

**Supervisors:** Prof. Biagio Saitta, Cagliari University, Physics Dept., INFN Cagliari  
Dr. Adriano Lai, Cagliari University, Physics Dept., INFN Cagliari

**1995 – 2001: Cagliari University, Italy**

**Master’s degree in Physics (106/110)**

**Thesis:** “Development of dedicated monte-carlo hardware for radiotherapy”

**Supervisors:** Prof. Paolo Randaccio, Cagliari University, Physics Dept., INFN Cagliari  
Dr. Massimiliano Porcu, Cagliari University, Physics Dept., INFN Cagliari

- **FOREIGN LANGUAGES:**

Excellent level of both written and spoken English.

**English: Cagliari University – Language Centre**

**Certificate of attendance and profit:** English language course (50 hours)

**Level:** Advanced I

**Achieved in the academic year:** 2002/2003

- **COMPUTER SCIENCE SKILLS:**

<b>Operating Systems:</b>	Unix, Linux Microsoft Windows	(Solaris) (Slackware, Ubuntu, CentOS) (98, XP, Seven)
<b>Programming Languages:</b>	Perl, Python, C, C++,  R, Microsoft Visual C++ 6.0, Microsoft Visual Basic 6.0, HTML, TeX, Verilog HDL, MySQL, Php, PostgreSQL, MongoDB.	(Object Oriented Programming, Standard Template Library, Boost Graph Library, Template Programming, python wrapping)
<b>Application Software:</b>	Orcad, Cadence, Xilinx Foundation, Altera MaxPlus, Quartus 2, Mathematica, Microsoft Office Emacs Root Eclipse QuantumGIS Pajek Gephi  Hadoop  CUDA Virtualbox	(CAD for electronics card) (CAD for VLSI integrated circuits) (CAD for programmable FPGA) (CAD for programmable FPGA) (CAD for programmable FPGA) (Software for numerical analysis and graphics) (97 / 2000 / XP / 2010) (Text editor) (C/C++ software for data analysis) (C/C++ development tool ) (Open Source Geographic Information System) (Large network analysis and visualization tool) (Open-source software for visualizing and analyzing large networks graphs) (Open-source software framework that supports data-intensive distributed applications) (NVIDIA's parallel computing architecture) (Tool for virtual machines management)

- **CERTIFICATIONS, TALKS, POSTERS AND CONFERENCES:**

- **CERTIFICATIONS:**

**16/11/2012:** **Second place and honorable mention** (see [http://wiki.c2b2.columbia.edu/dream/index.php/Best\\_Performers5](http://wiki.c2b2.columbia.edu/dream/index.php/Best_Performers5)) in the international competition DREAM5 on "Network Inference" for the study of transcriptional gene networks, organized by Columbia University, New York (USA), in collaboration with researchers from the CRS4 A. de la Fuente, A. Pinna and N. Soranzo. The name of our team for competition was ALF.

**7/05/2004:** **Certificate of training in radiation protection**, Cagliari University, Cagliari (CA), Italy.

- **TALKS:**

**15/09/2010:** **"Complex Networks Analysis on a Cloud Computing Architecture"**, ECCS (European Conference on Complex Systems) 2010, Lisbon university Institute, Lisbon, Portugal.

**26/09 - 02/10/2001:** **"Real-time Monte Carlo calculation using dedicated hardware"**, LXXXVIII Congresso Nazionale della Società Italiana di Fisica (S.I.F.), Alghero (SS), Italy.

- **POSTERS:**

**18/10 - 22/10/2004:** **"The SYNC Chip in the Front-End Electronics of the LHCb Muon Detector"**, 2004 IEEE Nuclear Science Symposium, Medical Imaging Conference, Symposium on Nuclear Power Systems and the 14th International Workshop on Room Temperature Semiconductor X and Gamma Ray Detectors, Ergife Palace Hotel, Rome (Italy)

**17/09 - 23/09/2001:** **"HMC: Hardware Monte Carlo. A new approach to computational problem"**, XI Workshop on Computational Materials Science, Physics Department and INFN Cagliari, Villasimius (CA), Italy.

- **CONFERENCES:**

**7/06 - 11/06/2004:** **"1° Seminario Nazionale sul Software della Fisica Nucleare, Subnucleare ed Applicata"**, Cagliari and Sassari University, Hotel Porto Conte, Alghero (SS), Italy.

**10/02 - 13/02/2004:** **"XIV Giornate di Studio sui Rivelatori"**, Villa Gualino, Torino University, Torino, Italy.

**16/12 - 18/12/2003:** “2003 IEEE Conference on Electron Devices and Solid State Circuits”, Hong Kong, China.

**20/09 - 26/09/2002:** “XV Scuola Nazionale di Fisica Nucleare e Subnucleare” Polytechnic University of Bari, Otranto (LE), Italy.

- **PUBLICATIONS:**

- **2013:**

- Meyer, P. et al, “**Network topology and parameter estimation: from experiments to gene regulatory network kinetics using a community based approach**”, submitted to Mol Sys Bio
- De Leo, V., Santoboni, G., Cerina, F., Mureddu, M., Secchi, L., Chessa A., “**Community core detection in transportation networks**”, arXiv:1304.0141 [physics.soc-ph], submitted to PRE.
- LHCb collaboration, “**Performance of the LHCb muon system**”, arXiv:1211.1346 [physics.ins-det], 15 Feb 2013, submitted to JINST.

- **2012:**

- Marbach, D., Costello, J.C., Küffner, R., ..., the DREAM5 Consortium (e.g. de la Fuente, A., De Leo, V., Pinna, A., Soranzo, N.), et al., “**Wisdom of crowds for robust gene network inference**”, Nature Methods (2012) doi:10.1038/nmeth.2016, Received 31 October 2011, Accepted 22 May 2012, Published online 15 July 2012.
- Cerina F, De Leo V, Barthelemy M, Chessa A, “**Spatial Correlations in Attribute Communities**”. PLoS ONE 7(5): e37507. doi:10.1371/journal.pone.0037507.
- Pinna, A., Soranzo, N., De Leo, V. and de la Fuente, A, “**Elucidating Transcriptional Regulatory Networks from heterogeneous gene-expression compendia**”, [In preparation for PLoS ONE DREAM5 special collection].

- **2010:**

- De Leo, V., Ricci, F., Soranzo, N., Chessa, A. and de la Fuente, A, “**Disentangling the proteome: Re-evaluations of Topological Insights from Yeast Protein Interaction Networks**”, Advances in Medicine and Biology, (2010) Volume 16, Chapter IV, ISBN 978-1-61122-731-4, Nova Science Publishers, Inc.
- V. De Leo, G. Fenu, M. Puliga, L. Secchi, L. Zolesio, A. Chessa, “**Complex Networks Analysis On A Cloud Computing Architecture**”, unpublished.
- S. Cadeddu, V. De Leo, C. Deplano and A. Lai, “**The SYNC Chip in the Electronics Architecture of the LHCb Muon Detector**”, IEEE Transaction On Nuclear Science (2010), Vol. 57, Issue 5, pag. 2790, ISSN: 0018-9499, doi: 10.1109/TNS.2010.2056930, Date of publication: 12 September 2010, Date Of Current version: 14 October 2010, Sponsored by: IEEE Nuclear and Plasma Sciences Society.

- **2008:**

- S. Cadeddu, V. De Leo, C. Deplano and A. Lai, “**Instruments and procedures for time calibration of the LHCb Muon Detector**”, Nuclear Instruments and Methods in Physics Research A (2008), doi:10.1016/j.nima.2008.02.022.

- **2005:**
  - S. Cadeddu, V. De Leo, C. Deplano and A. Lai, “**A Test Bench for full Characterization of the DIALOG Chip**”, IEEE 2005 Nuclear Science Symposium Conference Record, N14-135, 0-7803-9221-3/05.
- **2004:**
  - S. Cadeddu, V. De Leo, C. Deplano, E. Fois and A. Lai, “**The SYNC Chip in the Front-End Electronics of the LHCb Muon Detector**”, IEEE 2004 Nuclear Science Symposium Conference Record, 0-7803-8701-5/04.
  - S. Cadeddu, V. De Leo, C. Deplano and A. Lai, “**DIALOG and SYNC: a VLSI Chip Set for Timing of the LHCb Muon Detector**”, IEEE Transactions on Nuclear Science, Vol. 51, N. 5, October 2004
  - S. Cadeddu, V. De Leo, C. Deplano and A. Lai, “**DIALOG, an ASIC for timing of the LHCb muon detector**”, Nuclear Instruments and Methods in Physics Research A 518 (2004), 486 - 490.

- **EMPLOYMENT AND FELLOWSHIPS**

- 03/02/14 – 31/12/15:** **Fellowship** by Regione Sardegna (<http://www.regione.sardegna.it/>), *Borse di ricerca (PO FSE 2007/2013), di durata biennale, a favore di Dottori di ricerca/Ricercatori, per la realizzazione di Progetti di Ricerca presso imprese con sede legale e/o operativa nel territorio regionale.*  
**Project Title:** “An integrated approach for Big Data analysis through the use of innovative techniques of distributed cloud computing architectures with applications in social, economic and biological networks”.  
**Company:** Linkalab S. r. l. ([www.linkalab.it](http://www.linkalab.it)), Cagliari (CA), Italy
- 25/11/13 – 20/01/14:** **Software Engineering Consultant (Contratto di prestazione occasionale)** by IMT (<http://www.imtlucca.it/>), research area: “EIC”, research unit: “AXES, Laboratory for the analysis of Complex Economic Systems”.  
**Project Title:** “Collaboration for the activities of the research unit”.  
**Company:** IMT Institute for Advanced Studies Lucca (<http://www.imtlucca.it/>), Piazza S. Ponziano, 6, 55100 Lucca (LU) - Italy
- 18/04/13 – 31/12/13:** **Visiting Scholar** at IMT (<http://www.imtlucca.it/>), research unit: “NETWORKS - Complex Networks”.  
**Project Title:** “Collaboration for the activities of the research unit”.  
**Company:** IMT Institute for Advanced Studies Lucca (<http://www.imtlucca.it/>), Piazza S. Ponziano, 6, 55100 Lucca (LU) - Italy
- 01/04/13 – 01/06/13:** **Post Doc** at LIMS (<http://london-institute.org/>)  
**Project Title:** “PLEASED (PLants Employed As SENSing Devices)”, <http://pleased-fp7.eu/>.  
**Company:** LIMS (<http://london-institute.org/>), London Centre for Mathematical Sciences Limited
- 21/12/12 – 21/01/13:** **Research collaborator** at IMT (<http://www.imtlucca.it/>), research area: “EIC”, research unit: “AXES, Laboratory for the analysis of Complex Economic Systems”.

- Project Title:** “Data management oriented application nei campi Data sets filtering, database-oriented applications, scientific applications, open source applications, scientific libraries, cloud per le esigenze della Research Unit Axes”.
- Company:** IMT Institute for Advanced Studies Lucca (<http://www.imtlucca.it/>), Piazza S. Ponziano, 6, 55100 Lucca (LU) - Italy
- 04/05/10 – 06/09/12:** **Fellowship** by Regione Sardegna (<http://www.regione.sardegna.it/>), *Borse di Ricerca destinate a giovani ricercatori. Legge Regionale 7 agosto 2007, n. 7 “Promozione della ricerca scientifica e dell’innovazione tecnologica in Sardegna”.*
- Project Title:** “Study of gene expression by genetically modified skin equivalents based on Complex Networks analysis”.
- Company:** CRS4 ([www.crs4.it](http://www.crs4.it)), Loc. Piscina Manna, Edificio 1 - 09010 Pula (CA) - ITALY
- 01/09/09 – 07/09/09:** **Software Engineering Consultant (Contratto di prestazione occasionale)**
- Project Title:** “Upgrade of a C++/Python library for Complex Networks analysis with new functionalities that allow community detection over directed networks”
- Company:** Linkalab S. r. l. ([www.linkalab.it](http://www.linkalab.it)), Cagliari (CA), Italy.
- 01/07/09 – 08/07/09:** **Software Engineering Consultant (Contratto di prestazione occasionale)**
- Project Title:** “Development of a high performance community detection algorithm for complex networks analysis using template programming techniques”
- Company:** Linkalab S. r. l. ([www.linkalab.it](http://www.linkalab.it)), Cagliari (CA), Italy.
- 01/06/09 – 15/06/09:** **Software Engineering Consultant (Contratto di prestazione occasionale)**
- Project Title:** “Research and development of a C++/python library for Complex Networks analysis”
- Company:** Linkalab S. r. l. ([www.linkalab.it](http://www.linkalab.it)), Cagliari (CA), Italy.
- 03/03/08 – 31/05/09:** **Fixed-term contract researcher (Co.Co.Pro.)**
- Project Title:** “Gene networks analysis with Complex Networks techniques”
- Company:** Cybersar (<http://www.cybersar.com/>), Cagliari (CA) Italy
- 02/05/05 – 31/12/05:** **Fixed-term contract researcher (Co.Co.Co.)**
- Project Title:** “identification methods of acoustic signals generated by high energy cosmic neutrino interactions in water”.
- Company:** Cagliari University (<http://www.unica.it/>), Physics dept. (<http://www1.dsf.unica.it/>), Cagliari (CA), Italy.
- 2004:** **Fellowship** by Italian National Institute of Nuclear Physics (I. N. F. N., [www.infn.it](http://www.infn.it))
- Project Title:** “Muon detector synchronization in LHCb experiment”
- Company:** I.N.F.N. Cagliari (CA), Italy and Cagliari University (<http://www.unica.it/>), Physics dept. (<http://www1.dsf.unica.it/>), Cagliari (CA), Italy.

**2003:** Fellowship by Fondazione Banco di Sardegna (<http://www.fondazionebancodisardegna.it/>)

**Project Title:** "Muon detector synchronization in LHCb experiment"

**Company:** I.N.F.N. Cagliari (CA), Italy and Cagliari University (<http://www.unica.it/>), Physics dept. (<http://www1.dsf.unica.it/>), Cagliari (CA), Italy.

**2001:** Fellowship by Regione Sardegna (<http://www.regione.sardegna.it/>)

**Project Title:** "Muon detector synchronization in LHCb experiment"

**Company:** I.N.F.N. Cagliari (CA), Italy and Cagliari University (<http://www.unica.it/>), Physics dept. (<http://www1.dsf.unica.it/>), Cagliari (CA), Italy.

● **TEACHING:**

**25/11/13 – 02/02/14:** Fixed-term contract high school teacher (6 hours per week) at the Liceo Statale "Michelangelo" of Cagliari (CA), Italy, for Mathematics and Physics (**A049**)

**15/11/13 – 14/12/13:** Fixed-term contract high school teacher (8 hours per week) at the Liceo Statale "Pacinotti" of Cagliari (CA), Italy, for Mathematics and Physics (**A049**)

**05/11/13 – 24/11/13:** Fixed-term contract high school teacher (8 hours per week) at the Liceo Statale "Asproni" of Iglesias (CA), Italy, for Mathematics (**A047**)

**03/10/13 – 29/10/13:** Fixed-term contract high school teacher (15 hours per week) at the Liceo Statale "Michelangelo" of Cagliari (CA), Italy, for Mathematics and Physics (**A049**)

**07/03/13 – 09/06/13:** Fixed-term contract high school teacher (6 hours per week) at the Liceo Statale "Eleonora D'Arborea" of Cagliari (CA), Italy, for Mathematics and Physics (**A049**).

**15/12/12 – 30/06/13:** Fixed-term contract high school teacher (4 hours per week) at the ITC "Atzeni" of Capoterra (CA), Italy, for Computer Science (**A042**).

**03/12/12 – 15/12/12:** Fixed-term contract high school teacher (3 hours per week) at the Liceo Classico "Siotto" of Cagliari (CA), Italy, for Mathematics and Physics (**A049**).

**07/11/12 – 06/12/12:** Fixed-term contract high school teacher (4 hours per week) at the Liceo Classico "Dettori" of Cagliari (CA), Italy, for Mathematics and Physics (**A049**).

**13/10/12 – 30/06/13:** Fixed-term contract high school teacher (3 hours per week) at the Liceo Classico "Siotto" of Cagliari (CA), Italy, for Mathematics and Physics (**A049**).

**21/09/12 – 12/10/12:** Fixed-term contract high school teacher (18 hours per week) at the Liceo Scientifico "Asproni" of Iglesias (CA), Italy, for Mathematics and Physics (**A049**).

- 09/11/11 – 11/12/11:** **Fixed-term contract high school teacher** (12 hours per week) at the Liceo Scientifico “Asproni” of Iglesias (CA), Italy, for Mathematics and Physics (**A049**).
- 11/10/11 – 29/10/11:** **Fixed-term contract high school teacher** (12 hours per week) at the Liceo Scientifico “Asproni” of Iglesias (CA), Italy, for Mathematics and Physics (**A049**).
- 14/09/10 – 15/03/11:** **Fixed-term contract high school teacher** (15 hours per week) at the Liceo Scientifico of Tortolì (NU), Italy, for Mathematics and Physics (**A049**).
- 02/10/09 – 30/06/10:** **Fixed-term contract high school teacher** (18 hours per week) at the Liceo Scientifico “Bissiri” of Seui (OG), Italy, for Mathematics and Physics (**A049**).
- 02/12/09 – 13/03/09:** **Fixed-term contract high school teacher** (13 hours per week) at the Liceo Scientifico “Brotzu” of Quartu S. E. (CA), Italy, for Mathematics (**A047**).
- 17/01/09 – 04/02/09:** **Fixed-term contract high school teacher** (5 hours per week) at the Liceo Magistrale “Baccaredda” of Cagliari (CA), Italy, for Mathematics (**A047**).
- 06/11/08 – 22/12/08:** **Fixed-term contract high school teacher** (13 hours per week) at the Liceo Scientifico “Brotzu” of Quartu S. E. (CA), Italy, for Mathematics (**A047**).
- A.A.2008–2009 (2° Semestre):** **Tutor**, “Fisica Generale”, Cagliari University, Facoltà di Architettura, Cagliari (CA), Italy.
- A.A.2008–2009 (1° Semestre):** **Tutor**, “Fisica Generale 1”, Cagliari University, Facoltà di Ingegneria, Cagliari (CA), Italy.
- 9/02/08 – 10/06/08:** **Fixed-term contract high school teacher** (2 hours per week) at the Liceo Scientifico “Alberti” of Cagliari (CA), Italy, for Mathematics and Physics (**A049**).
- 19/01/08 – 8/02/08:** **Fixed-term contract high school teacher** (10 hours per week) at the Liceo Classico “Siotto” of Cagliari (CA), Italy, for Mathematics and Physics (**A049**).
- 10/11/07 – 8/02/08:** **Fixed-term contract high school teacher** (6 hours per week) at the ITIS “Scano” of Monserrato (CA), Italy, for “Sistemi di elaborazione e trasmissione delle informazioni” (**A042**).
- 24/10/07 – 20/12/07:** **Fixed-term contract high school teacher** (6 hours per week) at the Liceo Classico “Siotto” of Cagliari (CA), Italy, for Mathematics and Physics (**A049**).
- 7/10/07 – 23/10/07:** **Fixed-term contract high school teacher** (13 hours per week) at the Liceo Scientifico “Pitagora” of Selargius (CA), Italy, for Mathematics (**A047**).
- 6/10/07 – 30/06/08:** **Fixed-term contract high school teacher** (4 hours per week) at the Liceo



- Scientifico “Alberti” of Cagliari (CA), Italy, for Mathematics (**A047**).
- A.A.2007–2008 (2° Semestre):** **Tutor**, “Fisica Generale”, Cagliari University, Facoltà di Architettura, Cagliari (CA), Italy.
- A.A.2007–2008 (1° Semestre):** **Tutor**, “Fisica Generale 1”, Cagliari University, Facoltà di Ingegneria Meccanica, Chimica ed Elettrica, Cagliari (CA), Italy
- A.A.2007–2008 (1° Semestre):** **Tutor**, “Fisica con Esercitazioni”, Cagliari University at Oristano (OR), Facoltà di Scienze MM. FF. NN., Corso di Laurea in Biotecnologie IndustrialiCagliari (CA), Italy.
- 16/04/07 – 09/06/07:** **Fixed-term contract high school teacher** (8 hours per week) at the ITIS “Scano” of Monserrato (CA), Italy, for “Physics” (**A038**).
- 29/03/07 – 04/04/07:** **Fixed-term contract high school teacher** (133 hours per week) at the Liceo Scientifico “Brotzu” of Quartu S. E. (CA), Italy, for Mathematics and Physics (**A049**).
- 17/03/07 – 11/04/07:** **Fixed-term contract high school teacher** (5 hours per week) at the Liceo Scientifico “Michelangelo” of Cagliari (CA), Italy, for Mathematics (**A047**).
- 12/01/07 – 9/06/07:** **Fixed-term contract high school teacher** (3 hours per week) at the Liceo Scientifico “Michelangelo” of Cagliari (CA), Italy, for Mathematics and Physics (**A049**).
- 9/01/07 – 2/02/07:** **Fixed-term contract high school teacher** (4 hours per week) at the ITIS “Marconi” of Cagliari (CA), Italy, for Electronics (**A034**).
- 13/12/06 – 16/12/06:** **Fixed-term contract high school teacher** (3 hours per week) at the Liceo Magistrale “Baccaredda” of Cagliari (CA), Italy, for Mathematics and Physics (**A049**).
- 28/11/06 – 13/07/07:** **Fixed-term contract high school teacher** (8 hours per week) at the Istituto Alberghiero “Azuni” of Cagliari (CA), Italy, for Mathematics (**A047**).
- A.A. 2006–2007 (1° Semestre):** **Tutor**, “Fisica Generale 1”, Cagliari University, Facoltà di Ingegneria Meccanica, Chimica e Biomedica, Cagliari (CA), Italy.
- A.A. 2006–2007 (2° Semestre):** **Tutor**, “Fisica Generale”, Cagliari University, Facoltà di Ingegneria Edile, Cagliari (CA), Italy.
- A.A. 2005 – 2006:** **Tutor**, “Fisica Generale 2”, Cagliari University, Facoltà di Ingegneria Elettronica, Cagliari (CA), Italy.
- 22/03/06 – 12/04/06:** **Fixed-term contract high school teacher** (6 hours per week) at the ITIS “Scano” of Monserrato (CA), Italy, for “Sistemi di elaborazione e trasmissione delle informazioni” (**A042**).

- 07/03/06 – 17/03/06:** **Fixed-term contract high school teacher** (8 hours per week) at the Istituto Professionale “Meucci” of Cagliari (CA), Italy, for Electronics and Electrotechnics (**A034**).
- 31/01/06 – 12/04/06:** **Fixed-term contract high school teacher** (6 hours per week) at the ITIS “Scano” of Monserrato (CA), Italy, for Computer Science (**A042**).
- 31/03/05 – 12/04/05:** **Fixed-term contract high school teacher** (9 hours per week) at the ITIS “Scano” of Monserrato (CA), Italy, for “Sistemi di elaborazione e trasmissione delle informazioni” (**A042**).
- 15/10/2001 – 12/06/2002**  
&  
**10/10/2002 – 13/06/2003:** **Fixed-term contract high school teacher** (8 hours per week) at the Liceo Scientifico “Pacinotti” of Cagliari (CA), Italy, for Computer Science (**A042**).
- A.A. 2001 – 2002:** **Tutor**, “Analisi Matematica 1”, Cagliari University, Facoltà di Ingegneria Meccanica, Chimica ed Elettrica, Cagliari (CA), Italy.

Cagliari, February 24th, 2014

Vincenzo De Leo

