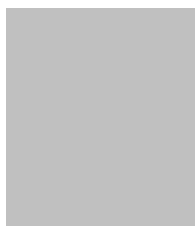








PERSONAL INFORMATION

Victor Sorin Martoiu



-  **IFIN-HH**
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-  [cern.ch/smartoiu](http://cern.ch/smartoiu)
- 

Sex M | Date of birth 10/08/1976 | Nationality RO

POSITION WITHIN THE PROJECT

Member

WORK EXPERIENCE

- 
- 2012 – present **Research Engineer (2012 – 2014), Senior Research Engineer – IDT I (since 2014)**  
 IFIN-HH, Bucharest - Magurele

    - Member of the ATLAS Collaboration at CERN LHC
    - Co-convenor of ECFA DRD1 Working Group 5 (Electronics); Liaison Person with DRD7
    - Development of front-end electronics for the New Small Wheel Upgrade of the ATLAS Detector
    - Development of the ATCA-based Trigger Processor Electronics for the New Small Wheel Detector
    - Design and realization of front-end electronics, ASICs and data acquisition systems for particle and radiation detectors.
    - Coordination of electronics activities of the Particle Physics Department within the collaboration with CERN (ATLAS, RD51)
    - Coordination of IFIN-HH activities within the RD51 Collaboration for the Development of Micro-Pattern Gas Detectors Technologies

[Business or sector](#) Research
  
  - 2009 – 2012 **Post-Doctoral Fellowship**  
 CERN, Switzerland

    - Definition, design and development of a complete scalable multi-application data acquisition system for gas or silicon detectors, within the RD51 Collaboration.
    - User support for application-driven front-end selection and data-acquisition scheme definition.
    - Participation to the definition process of new front-end integrated electronics for micro-pattern gas detectors

[Business or sector](#) Research
  
  - 2007 – 2009 **Post-Doctoral Fellowship**  
 INFN Torino, Italy

    - Design and test of deep-submicron integrated electronics for the NA62 experiment at CERN
    - System level study of high time-resolution front-end electronics for silicon pixel detectors.

[Business or sector](#) Research
  
  - 2004 – 2007 **Doctoral Research**  
 Univ. Torino/INFN Torino, Italy

    - Design of integrated front-end electronics for nuclear (PANDA, GSI) and HEP

- experiments (NA62, CERN)
  - System integration of the Silicon Drift Detector layers of the ALICE detector.
- [Business or sector](#) Research

2001 – 2003 **Student Fellowship**

Univ. Siegen, Germany - Detector Physics Group

- Development of a local trigger concept for gaseous detectors using interpolated resistive readout scheme.
- Design and realization of a FPGA-based multi-processor data acquisition system incorporating the local trigger concept.
- Gaseous detectors development using Micro-CAT and GEM as gas amplification devices and resistive interpolation readout. Laboratory characterization and optimization.
- Time resolved crystallography experiments using synchrotron radiation.

[Business or sector](#) Research

1999 – 2000 **Diploma Research**

NIPLR Bucharest

- He-Ne laser development, laser frequency control and stabilization, laser frequency measurement
- Digital and analog laser frequency-offset locked techniques.

[Business or sector](#) Research

EDUCATION AND TRAINING

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2003 – Feb. 2007 **Ph.D. Experimental Physics**

University of Turin, Italy

- Design, test and system integration of front-end electronics for particle detection in high-energy and nuclear physics experiments

1995 - 2000 **M.Sc. (5 years), Physics Engineering**

“Politehnica” University of Bucharest, Romania

- Diploma thesis: “Development of an accurate frequency-offset locked He-Ne/Iodine laser system by means of digital PLL”

PERSONAL SKILLS

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Mother tongue(s) Romanian

Other language(s)

	UNDERSTANDING		SPEAKING		WRITING
	Listening	Reading	Spoken interaction	Spoken production	
English	C1	C1	C1	C1	C1
Italian	C1	C1	C1	C1	C1
French	B2	B2	B2	B2	B2

Levels: A1/A2: Basic user - B1/B2: Independent user - C1/C2 Proficient user  
[Common European Framework of Reference for Languages](#)

Communication skills ▪ good communication skills gained through my experience as researcher

Organisational / managerial skills

- leadership (currently responsible for a team of 5 people)

Job-related skills

*Electronics and Microelectronics:*

- Analog integrated circuit design, low-noise and low-power design in deep sub-micron technology, from system-level or transistor-level simulation to layout design, DRC, LVS and post-layout verification. Radiation tolerance design and qualification.
- Mixed-mode integrated circuit design issues, time-to-digital converters, analog-to-digital converters, mixed-mode simulations.
- Custom digital design, both ASIC and FPGA level, VHDL or Verilog coding, behavioral simulation, constraint-driven synthesis and implementation, radiation hardness and single event upset protection methodologies.
- Discrete analog or digital design, PCB layout, design for manufacturability issues.
- Large-system integration, test and quality assurance. "Hands-on" experience in circuit verification and evaluation, prototype development.
- Knowledge of low-mass integration issues and integration technologies (flexible hybrid structures, TAB-bonding, etc.), IC packaging.

*Experimental Physics:*

- Design and integration of detector front-end electronics and data acquisition systems for gas or silicon detectors.
- Hardware-related experience in high-energy and nuclear physics experiments, laboratory X-ray experiments, synchrotron radiation experiments.
- Expertise with silicon-based detectors (in particular, hybrid pixels and silicon-drift detectors), gas detectors and micro-pattern gas-gain structures.
- Knowledge of MAPS and epitaxial pixel detectors.
- Knowledge of medical physics issues like imaging (X-ray double-frequency angiography, DEI, PET) and radiation treatment.
- Expertise with laser frequency stabilization.

Digital competence

SELF-ASSESSMENT				
Information processing	Communication	Content creation	Safety	Problem solving
Proficient user	Proficient user	Proficient user	Proficient user	Proficient user

Levels: Basic user - Independent user - Proficient user  
[Digital competences - Self-assessment grid](#)

- Engineering: Cadence Design Suite, PSpice, Spectre, BSIM3, BSIM4, Synopsis, ModelSim, OrCAD, Protel, Altium, Mathematica, Matlab, Simulink, LabView.
- Physics: Origin, Mathematica, ROOT, LabView.
- Programming Languages: C/C++, VHDL, Verilog

Driving licence

B

ADDITIONAL INFORMATION

Publications  
 Conferences  
 Seminars

- 900+ articles within ATLAS Collaboration
- "Electronics for Radiation Detectors", Krzysztof Iniewski (Ed.), CRC Press (2010), <http://www.crcpress.com/product/isbn/9781439816486> S. Martoiu and A. Rivetti, "Low-Power Integrated Front-End for Timing Applications with Semiconductor Radiation Detectors", (Chapter 12, pp 315 – 337).
- „The VMM3a ASIC”, Gianluigi de Geronimo (Unlisted, US), George Iakovidis (Brookhaven), Sorin Martoiu (Bucharest, IFIN-HH), Venetios Polychronakos

(Brookhaven), DOI: 10.1109/TNS.2022.3155818, Published in: IEEE Trans.Nucl.Sci. 69 (2022) 4, 976-985

- „Development of the scalable readout system for micro-pattern gas detectors and other applications”, S. Martoiu (Bucharest, IFIN-HH), H. Muller (CERN), A. Tarazona (CERN and Valencia, Polytechnic U.), J. Toledo (Valencia, Polytechnic U.), DOI: 10.1088/1748-0221/8/03/C03015, Published in: JINST 8 (2013), C03015
- „Front-end electronics for the Scalable Readout System of RD51”, S. Martoiu (CERN), H. Muller, J. Toledo, DOI: 10.1109/NSSMIC.2011.6154414
- „A low power front-end prototype for silicon pixel detectors with 100ps time resolution”, Sorin Martoiu, Angelo Rivetti, Gianni Mazza, Fadmar Osmic, Flavio Marchetto, DOI: 10.1109/NSSMIC.2008.4774984

## ANNEXES

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- publications list.