Damiano Bortolato

Account E-mail: damiano.bortolato@lnl.infn.it
PEC: damiano.bortolato@pec.it, damiano.bortolato@pec.infn.it

Date of birth: Nationality: Italian Mother tongue(s) : Italian

EDUCATION:

Graduated/MSc Student in Electronic Engineering
(University of Padova (Padua))
Start (94, 09)
End (02, 10)
Final Grade: 101 (over 110)
High School Diploma in Industrial Electronic, ITIS Max Planck Lancenigo di Villorba (TV)
Start (90, 09)
End (94, 06)
Grade: 48 (over 60)

OTHER:

RED HAT CERTIFIED SYSTEM ADMINISTRATOR (December 2014 CN 140-252-388)
- Corso di aggiornamento sull'operazione delle macchine acceleratrici 21-22/09/2015.

RELEVANT PROFESSIONAL EXPERIENCES:

- From 04/01/2019 to present, head of Accelerators Controls Service at LNL, it includes the position as head of the WP4 of the SPES project.
- From 10/01/2018 staff position al LNL as member of Accelerators Controls Service.
- From 02/01/2012 to 30/09/2019 temporary position at LNL: Hardware and Software developer at INFN-LNL as Tecnologo III Livello as member of Accelerators Controls Service. The work includes designing, developing, testing and producing the next generation electronics for the main Linac at LNL. This include also the developing of the software infrastructure (from HW drivers to Operator GUI) needed to operate the accelerator.
  This project includes a design of new generation of LLRF subsystem including a new FPGA based board to process the RF signals. Such a board uses the technique known as direct RF sampling to demodulate and modulate the RF signals.

- From 02/01/2010 to 02/01/2012 temporary position at LNL: Hardware and Software developer for AGATA and GALILEO Experiments. Demonstrator Phase of AGATA has been completed, and the experiment is ready to move from LNL to GSI (Darmstadt DE). At the same time the needing of a more scalable and less expensive electronics for AGATA arose, so I started a new HW development for the data acquisition system which would cover the needing for both AGATA and the new experiment GALILEO (another HPGe Gamma Spectrometer to be installed at LNL). The new DAQ system was a PCIe based board optically interconnected with on-field Digitizers capable of processing, through an FPGA, 40 channels at 100Ms/s. The readout capability was up to 1GB/s (on RAM) using advanced device drivers for Linux OS.
- From 02/01/2008 to 02/01/2010 Temporary Research Associateat LNL: AGATA demonstrator Phase at LNL. Several AGATA subsystems was assembled, integrated and tested al LNL. During this period I also developed the first GUI for the DAQ control system. In this phase AGATA was been equipped with 5 HPGe triple-cryostats for a total of 570 acquisition channels.
- From 09/01/2003 to 01/26/2008 Temporary Research Associate at INFN Padua: Hardware and Software developer at INFN-PD and INFN-LNL for the core development of Advanced GAmma ray Tracking Array (Segmented HPGe Spectrometer). The core of the 1 st generation of AGATA electronics has been developed, in collaboration with groups from other European Labs, during this period. This included:
  - GTS: Global Trigger System: a distributed Synchronization and Time-stamping System suitable for selecting interesting events captured from germanium detectors.
  - data acquisition system (DAQ), a data collector and formatting system interconnected with GTS.

  My personal contribution during this period was testing and validating the various board design and FPGA code development (for both, GTS and DAQ).

PERSONAL SKILLS

English

UNDERSTANDING		SPEAKING		WRITING
Listening	Reading	Spoken interaction	Spoken production	
B1/2	B1/2	B1/2	B1/2	B1/2
Levels: A1/2: Basic user - B1/2: Independent user - C1/2 Proficient user Common European Framework of Reference for Languages				

Other known language(s): German (A1/2)

Computer skills

Advanced:

- UNIX, Linux System Administration.
- C, C++, Python, VHDL, Programming.
- Linux OS kernel and Device Driver developing.
- Knowledge on Computer Networks and networking protocols and programming.

Intermediate:

- WEB Technologies and Languages (PHP, Javascript, HTML)
- MATLAB programming.

Other skills:

- Timing Synchronization Systems for Nuclear Physics experiments. Skills acquired while developing the Global Trigger System of AGATA experiment at LNL.
- Fast Data Acquisition Systems development based on PCI, PCIe, ATCA infrastructures. Skills acquired during the AGATA and GALILEO data acquisition system development at INFN-LNL.
- RF control and distribution and monitoring for super-conductive Particle Linear Accelerator. Skills acquired during the development of the next generation electronics for ALPI Linac at INFN-LNL.
- Multi-Threaded GUI and control system development. Skills acquired during the development of control software for AGATA and GALILEO experiment at LNL.
- EPICS based control system development for Particle Accelerators. Skills acquired during the development of the next generation electronics for ALPI Linac at INFN-LNL.
- Computer Network Infrastructure management.

ACCEPTED PUBLICATIONS

D. Bortolato, S. Pavinato, D. Pedretti, M. Betti, F. Gelain, D. Marcato, M. Bellato, R. Isocrate, M. Bertocco “New LLRF Control System at LNL” IEEE Real Time Conference 2016, DOI: 10.1109/RTC.2016.7543105

S. Pavinato ∗ , M. Betti, D. Bortolato, F. Gelain, D. Marcato, D. Pedretti, INFN, Laboratori Nazionali di Legnaro, 35020 Legnaro,Italy M. Bellato, R. Isocrate, INFN, Sezione di Padova, 35031 Padova, Italy M. Bertocco, Department of Information Engineering, University of Padova “DEVELOPMENT OF A DIGITAL LLRF CONTROL SYSTEM AT LNL ”, Proceedings of LINAC2016, East-Lansing, MI, USA

Barrientos, D.; Gonzalez, V.; Bellato, M.; Gadea, A.; Bazzacco, D.; Blasco, J.M.; Bortolato, D.; Egea, F.J.; Isocrate, R.; Pullia, A.; Rampazzo, G.; Sanchis, E.; Triossi, A. “Multiple Register Synchronization With a High-Speed Serial Link Using the Aurora Protocol”, Nuclear Science, IEEE Transactions on, Volume: 60, Issue: 5, Pages: 3521 – 3525, Year: 2013, DOI: 10.1109/TNS.2013.2273369

Bellato, M.; Berti, L.; Bortolato, D.; Coleman-Smith, P.J.; Edelbruck, P.; Grave, X.; Isocrate, R.; Lazarus, I.; Linget, D.; Medina, P.; Oziol, C.; Rampazzo, G.; Santos, C.; Travers, B.; Triossi, A., “Global Trigger and Readout System for the AGATA Experiment”, Nuclear Science, IEEE Transactions on, Volume: 55, Issue: 1 Pages: 91 - 98, Year: 2008, DOI: 10.1109/TNS.2007.910034

Ceschia, M.; Violante, M.; Reorda, M.S.; Paccagnella, A.; Bernardi, P.; Rebaudengo, M.; Bortolato, D.; Bellato, M.; Zambolin, P.; Candelori, A., “Identification and classification of single-event upsets in the configuration memory of SRAM-based FPGAs”; Nuclear Science, IEEE Transactions on, Volume 50, Issue 6, Part 1, Dec. 2003 Page(s):2088 – 2094

Barrientos, D.; Bellato, M.; Bazzacco, D.; Bortolato, D.; Cocconi, P.; Gadea, A.; Gonzalez, V.; Gulmini, M.; Isocrate, R.; Mengoni, D.; Pullia, A.; Recchia, F.; Rosso, D.; Sanchis, E.; Toniolo, N.; Ur, C.A.; Valiente-Dobon, J.J. “Fully digital FPGA-based Front-End Electronics for the GALILEO array” Real Time Conference (RT), 2014 19th IEEE-NPSS, Pages: 1 – 2, Year: 2014 DOI: 10.1109/RTC.2014.7097491

Barrientos, D.; Gonzalez, V.; Bellato, M.; Gadea, A.; Bazzacco, D.; Blasco, J.M.; Bortolato, D.; Egea, F.J.; Isocrate, R.; Pullia, A.; Rampazzo, G.; Sanchis, E.; Triossi, A.“Development of the control card for the digitizers of the second generation electronics of AGATA” Real Time Conference (RT), 2012 18th IEEE-NPSS Pages: 1 - 3, Year: 2012, DOI: 10.1109/RTC.2012.6418205

Barrientos, D.; Gonzalez, V.; Bellato, M.; Gadea, A.; Bazzacco, D.; Blasco, J.M.; Bortolato, D.; Egea, F.J.; Isocrate, R.; Pullia, A.; Rampazzo, G.; Sanchis, E.; Triossi, A. “Graphical user interface for serial protocols through a USB link”, Real Time Conference (RT), 2012 18th IEEE-NPSS, Pages: 1 - 4, Year: 2012 DOI: 10.1109/RTC.2012.6418111

Pullia, A.; Barrientos, D.; Bazzacco, D.; Bellato, M.; Bortolato, D.; Isocrate, R. “A 12-channel 14/16-bit 100/125-MS/s digitizer with 24-Gb/s optical output for AGATA/GALILEO”, Nuclear Science Symposium and Medical Imaging Conference (NSS/MIC), 2012 IEEE Pages: 819 - 823, Year: 2012,
DOI: 10.1109/NSSMIC.2012.6551218

Bellato, M.; Berti, L.; Bortolato, D.; Coleman-Smith, P.J.; Edelbruck, P.; Grave, X.; Isocrate, R.; Lazarus, I.; Linget, D.; Medina, P.; Oziol, C.; Rampazzo, G.; Santos, C.; Travers, B.; Triossi, A. “Global Trigger and Readout System for the AGATA experiment, Real-Time Conference, 2007 15th IEEE-NPSS, Pages: 1 - 5, Year: 2007, DOI: 10.1109/RTC.2007.4382847

Violante, M.; Sterpone, L.; Ceschia, M.; Bortolato, D.; Bernardi, P.; Reorda, M.S.; “Simulation-based analysis of SEU effects in SRAM-based FPGAs”, Paccagnella, A.; Nuclear Science, IEEE Transactions on, Volume 51, Issue 6, Part 2, Page(s):3354 – 43359, Dec. 2004

Bellato, M.; Bernardi, P.; Bortolato, D.; Candelori, A.; Ceschia, M.; Paccagnella, A.; Rebaudengo, M.; Reorda, M.S.; Violante, M.; Zambolin, P.; “Evaluating the effects of SEUs affecting the configuration memory of an SRAM-based FPGA” VoDesign, Automation and Test in Europe Conference and Exhibition, 2004. Proceedings lume 1, Page(s):584 - 589 Vol.1, 16-20 Feb. 2004

Violante, M.; Ceschia, M.; Sonza Reorda, M.; Paccagnella, A.; Bernardi, P.; “Analyzing SEU effects is SRAM-based FPGAsb”, Rebaudengo, M.; Bortolato, D.; Bellato, M.; Zambolin, P.; Candelori, A.;On-Line Testing Symposium, 2003. IOLTS 2003. 9th IEEE, Page(s):119 – 123, 7-9 July 2003.

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Damiano
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Curriculum Vitae di Stefania Canella

Dati Anagrafici

Nome e Cognome: Stefania Canella

Sede di lavoro: Viale dell'Università, 2 – INFN-LNL, 35020 Legnaro (PD)
E-mail: canella@lnl.infn.it

Istruzione e Formazione

Laurea in Ingegneria Elettronica all'Università degli Studi di Padova – 1982
Corso di perfezionamento in Matematica Applicata e Programmazione annesso alla Facoltà di Ingegneria dell'Università degli Studi di Padova - 1984
Abilitazione all'esercizio della professione di ingegnere – 1984
Buona conoscenza della lingua inglese, parlata e scritta

Esperienze professionali

1983-1985: analista nella Divisione Informatica Distribuita e Automazione dell'Ufficio (DIDAU) presso OLIVETTI S.p.A. - Ivrea (TO)
1985-1990: tecnologo specialista in Matematica Applicata e Programmazione nella società di ingegneria Tecnomare S.p.A. (gruppo ENI) - Venezia
Dal 1990: tecnologo in INFN-LNL (Istituto Nazionale di Fisica Nucleare - Laboratori Nazionali di Legnaro) nel Servizio Sistemi di Controllo per Acceleratori
Dal 2015: in INFN-LNL, responsabile nel Servizio Acceleratori per la Fisica Interdisciplinare.

Attività professionale in INFN-LNL

1990-1997: realizzazione del sistema di controllo dell'acceleratore superconduttivo ALPI di LNL
1997-1998: partecipazione alla collaborazione EUROBALL
2000-2009; supporto all'analisi di dati con tecniche statistiche bayesiane in esperimenti di micro-dosimetria
2000-2010: realizzazione del sistema di controllo dell'iniettore superconduttivo PIAVE di LNL collaborazione alla predisposizione del controllo della sorgente ECR dello stesso iniettore
1995-2014: supporto al mantenimento in esercizio degli acceleratori superconduttivi di LNL
2001-2014: collaborazione nel progetto SPES di LNL
2015-2019: editor di Annual Report LNL
1995-2021: collaborazione in esperimenti di CSN3 e CSN5
2015-2017: presenza in commissioni di concorso per borse di studio e assegni di ricerca INFN
2015-2021: presenza in commissioni di concorso per selezione di tecnici e tecnologi INFN
2015-2021: responsabile di servizio nelle attività di Fisica Interdisciplinare con Acceleratori LNL
2000-2021: attività didattiche e divulgative di INFN-LNL e di ente.

LNL, 8 luglio 2021

Padova, July 28th 2021

Curriculum Vitae of Prof. Gianmaria Collazuol

Gianmaria Collazuol is Associate Professor at the Department of Physics and Astronomy of the University of Padova since April 2017, where he lectures on "Analogue Electronics" and on "Applied Electronics", he teaches "Physics Laboratory II (Electromagnetism)" and "Advanced Laboratory techniques" to students in Physics and "Management and Analysis of Physical Datasets" to students in Physics of Data.

G.Collazuol graduated in 1997 with first-class honors in Physics (University of Padova). He defended his PhD thesis in 2001 (University of Firenze). He was Research Fellow with the Scuola Normale Superiore in Pisa (2002-09) and with INFN in Pisa and in Padova (2010-11). He was Assistant Professor with the Department of Physics and Astronomy of the University of Padova in the years 2011-2017.

G.Collazuol contributed to the fields of experimental High Energy Particle Physics, Nuclear Physics, Astro-Particle Physics and Medical Physics, working within various international collaborations. His activities include Neutrino Physics and Leptonic CP violation - experiments NOMAD at CERN, ENUBET (ERC project and INFN), T2K at JPARC (Tokai, Japan) and Super-Kamiokande (Kamioka observatory, Japan), CP violation with quarks and Flavour Physics - NA48, NA62 and LHCb experiments at CERN, high energy Gamma and Cosmic-ray Physics and searches for Dark Matter - CALET experiment on the ISS (JAXA, NASA and ASI collaboration, low energy nuclear cross-sections and neutron physics – various experiments at the INFN Laboratories (Legnaro, Italy) and Medical Physics - development of small PET pre-clinical systems. At the moment his main activity is devoted to the T2K, Super-Kamiokande, ENUBET and CALET experiments. His activities in Japan related to Neutrino Physics are seconded by the Jennifer MSCA-RISE EU project.

He gained hands-on experience on a broad set of experimental techniques, from cryogenics to detector physics and technology, from electronics to statistical data analysis and simulation. He contributed to design and build various type of detectors including Liquefied Noble Gases and Cherenkov based Calorimeters, differential Cherenkov and RICH detectors, particle tracking detectors based on semiconductors and on gaseous materials, instrumentation for high energy particle beams and low energy ion beams. He studied new types of organic and inorganic scintillators for low energy gamma and neutron detection and various types of radiation-matter interaction effects, including atomic charge exchange radiation or bremsstrahlung and Cherenkov micro-wave emission, to be exploited for new detection techniques.

Prof. Gianmaria Collazuol, Dip. di Fisica e Astronomia "G. Galilei", - via F.Marzolo, 8 - 35131 Padova
Tel +39 049 827 7134 - FAX +39 049 662263 - e-mail: gianmaria.collazuol@unipd.it

He masters analogue and digital electronics and has been responsible of projects for developing high performance trigger and data acquisition systems, including ultra-fast on-line reconstruction with GPUs for high energy experiments (NA62 and LHCb experiments).

He is an internationally recognized expert in the field of photo-detectors and in particular concerning silicon photon-multipliers (SiPM). At the moment he is involved in the development new types of silicon photon-multipliers (SiPM) for applications involving extreme UV light readout and Cherenkov detectors.
He is also developing innovative silicon pixel detectors and related electronics for tracking charged particles based on Avalanche diodes working in Geiger mode.

G.Collazuol is head of the T2K / Super-Kamiokande and of the CALET research groups in Padova. He is Coordinator of the "Space Weather" analysis for the CALET Experiment. He is Project Coordinator for the development of the new TPCs for the upgrade of the T2K Near Detector.

He has been advisor and tutor of several Bachelor and Master Theses and of five PhD theses. He is member of the International Advisory Committes of NDIP and PhotoDet conference series and of the SNRI INFN School series on advanced detectors. He is referee of the Journals "NIM A" and "IEEE TNS". He contributed with over 30 talks at international conferences and authored more than 350 papers in international peer-reviewed journals.

Gianmaria Collazuol

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