



IEEE Italy Section

Exemplary Student Branch Award

Politecnico di Torino IEEE SB Nomination

STB06971

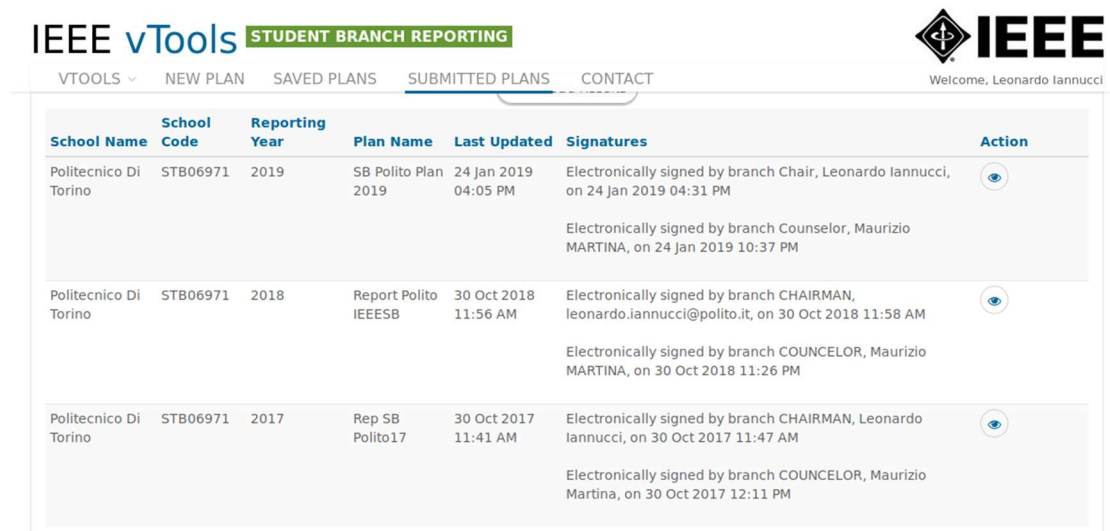
The present report provides an overview of the documents that have been sent for the evaluation of the PoliTo IEEE SB as Exemplary Student Branch.

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2. Student Branch Online Activity Report

The annual Activity Report has been submitted on 24th of January. Actually, since this year the annual report is due by the beginning of February and no more before the 1st of November.



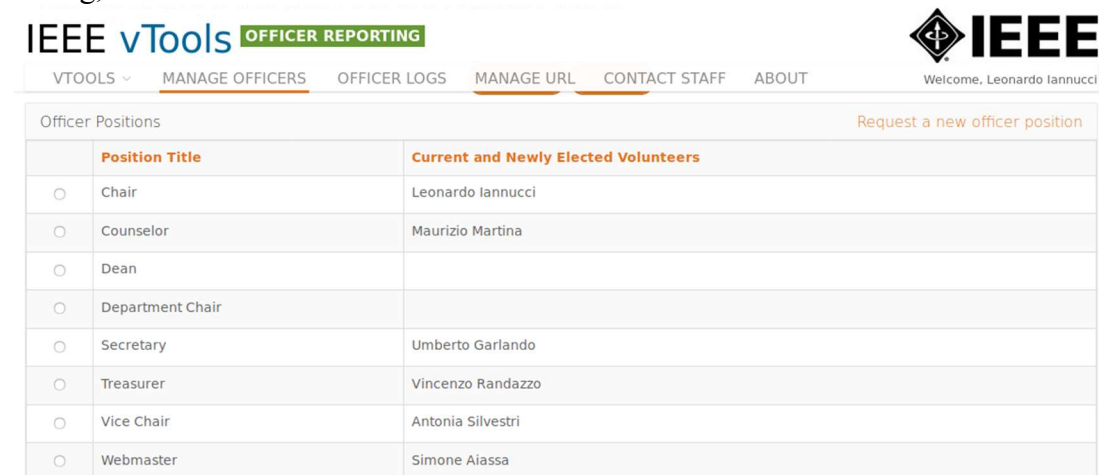
The screenshot shows the IEEE vTools Student Branch Reporting interface. The top navigation bar includes 'VTOOLS', 'NEW PLAN', 'SAVED PLANS', 'SUBMITTED PLANS' (which is highlighted), and 'CONTACT'. The user is logged in as 'Welcome, Leonardo Iannucci'. The main table displays submitted activity reports for the Politecnico Di Torino school.

School Name	School Code	Reporting Year	Plan Name	Last Updated	Signatures	Action
Politecnico Di Torino	STB06971	2019	SB Polito Plan 2019	24 Jan 2019 04:05 PM	Electronically signed by branch Chair, Leonardo Iannucci, on 24 Jan 2019 04:31 PM Electronically signed by branch Counselor, Maurizio MARTINA, on 24 Jan 2019 10:37 PM	
Politecnico Di Torino	STB06971	2018	Report Polito IEEE SB	30 Oct 2018 11:56 AM	Electronically signed by branch CHAIRMAN, leonardo.iannucci@polito.it, on 30 Oct 2018 11:58 AM Electronically signed by branch COUNSELOR, Maurizio MARTINA, on 30 Oct 2018 11:26 PM	
Politecnico Di Torino	STB06971	2017	Rep SB Polito17	30 Oct 2017 11:41 AM	Electronically signed by branch CHAIRMAN, Leonardo Iannucci, on 30 Oct 2017 11:47 AM Electronically signed by branch COUNSELOR, Maurizio Martina, on 30 Oct 2017 12:11 PM	

In the Appendix, the submitted Activity Report is present.

3. Student Branch Officer Reporting

Student Branch Officers have been regularly reported when elected. Current Executive Committee is the following, as shown on Vtools website:



The screenshot shows the IEEE vTools Officer Reporting interface. The top navigation bar includes 'VTOOLS', 'MANAGE OFFICERS' (which is highlighted), 'OFFICER LOGS', 'MANAGE URL', 'CONTACT STAFF', and 'ABOUT'. The user is logged in as 'Welcome, Leonardo Iannucci'. The main table displays the current and newly elected volunteers for various officer positions.

Officer Positions		Request a new officer position
	Position Title	Current and Newly Elected Volunteers
<input type="radio"/>	Chair	Leonardo Iannucci
<input type="radio"/>	Counselor	Maurizio Martina
<input type="radio"/>	Dean	
<input type="radio"/>	Department Chair	
<input type="radio"/>	Secretary	Umberto Garlando
<input type="radio"/>	Treasurer	Vincenzo Randazzo
<input type="radio"/>	Vice Chair	Antonia Silvestri
<input type="radio"/>	Webmaster	Simone Aiassa

All positions of the Executive Committee are covered and regular meetings have been organized to manage the Student Branch.

4. List of Current Members

Total number of IEEE Student Members is 139, 108 of them Graduate Student members and 31 Student members. Statistics downloaded from IEEE OU Analytics are attached in Appendix.

Last year, the number of Student Members in the Student Branch was 98, so a great result has been obtained from this point of view.

5. Student Branch Website

The Student Branch has established different communication channels in order to inform students about the activities and to interact with them. The SB website is the following:

<http://sites.ieee.org/sb-polito>

It is regularly updated by the webmaster of the SB, Simone Aiassa, as well as the Facebook page

<https://it-it.facebook.com/IEEE SB PoliTO>

and the LinkedIn account

https://www.linkedin.com/company/ieeesbpolito?trk=ppro_cprof

Since this year, the Youtube channel has been created

<https://www.youtube.com/channel/UC0HzR55tE1oCOahCin3dOrA>

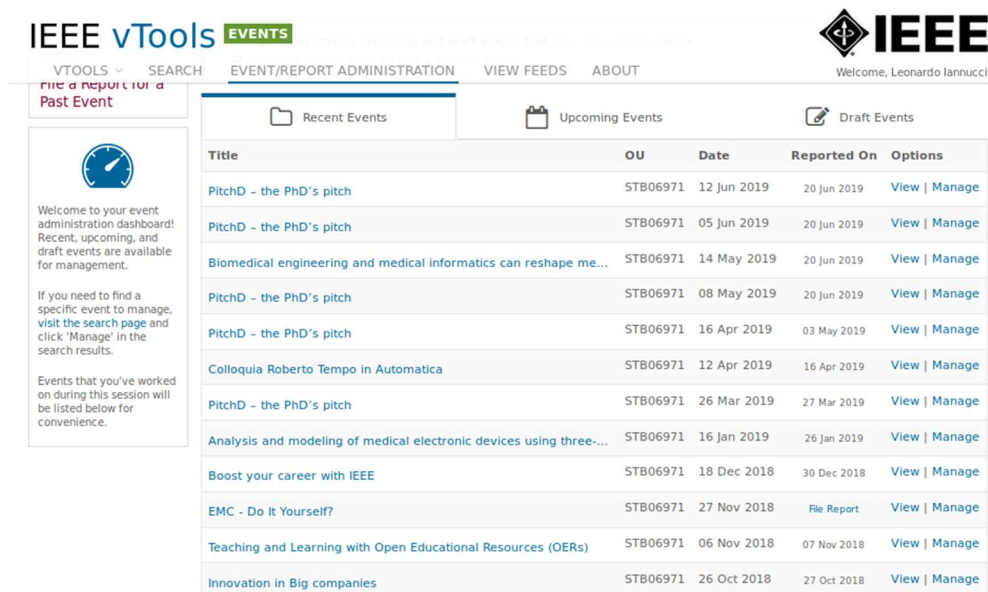
as well as the Instagram account

[IEEE SB PoliTO](#)

[@ieeesbpolito](#)

6. Student Branch IEEE Activity

Different activities have been organized during the year, mainly seminars and lectures. All events have been reported on <https://events.vtools.ieee.org>, as shown in the following screenshot.



The screenshot shows the IEEE vTools EVENTS page. The page has a header with the IEEE logo and a welcome message. Below the header, there are tabs for 'EVENT/REPORT ADMINISTRATION', 'VIEW FEEDS', and 'ABOUT'. The 'EVENT/REPORT ADMINISTRATION' tab is active, showing a list of events. The list has columns for Title, OU, Date, Reported On, and Options. The events listed are:

Title	OU	Date	Reported On	Options
PitchD - the PhD's pitch	STB06971	12 Jun 2019	20 Jun 2019	View Manage
PitchD - the PhD's pitch	STB06971	05 Jun 2019	20 Jun 2019	View Manage
Biomedical engineering and medical informatics can reshape me...	STB06971	14 May 2019	20 Jun 2019	View Manage
PitchD - the PhD's pitch	STB06971	08 May 2019	20 Jun 2019	View Manage
PitchD - the PhD's pitch	STB06971	16 Apr 2019	03 May 2019	View Manage
Colloquia Roberto Tempo in Automatica	STB06971	12 Apr 2019	16 Apr 2019	View Manage
PitchD - the PhD's pitch	STB06971	26 Mar 2019	27 Mar 2019	View Manage
Analysis and modeling of medical electronic devices using three...	STB06971	16 Jan 2019	26 Jan 2019	View Manage
Boost your career with IEEE	STB06971	18 Dec 2018	30 Dec 2018	View Manage
EMC - Do It Yourself?	STB06971	27 Nov 2018	File Report	View Manage
Teaching and Learning with Open Educational Resources (OERs)	STB06971	06 Nov 2018	07 Nov 2018	View Manage
Innovation in Big companies	STB06971	26 Oct 2018	27 Oct 2018	View Manage

The first event of the academic year was an Industrial Distinguished Lecture, given by **Benedetto Vigna** and sponsored by the IEEE Italy Section. Then, a seminar about Open Educational Resources has been organized in October. This even has been important both for the relevance of the speaker

(**Sorel Reisman**, 2011 IEEE Computer Society President) and for the opportunity of collaboration with the IEEE-HKN Chapter. Actually, at Politecnico di Torino the first Italian HKN Chapter is present, so great advantages can arise from a strong collaboration between the SB and the HKN group.

After that, a seminar about advantages related to IEEE membership has been organized; prof. **Gianluca Setti** (IEEE Fellow and 2010 IEEE CAS Society President), explained advantages and opportunities related to a direct involvement in the IEEE. In January, a seminar about medical devices has been given by Dr. **Maria-Alexandra Paun**, researcher at EPFL (Lausanne, Switzerland).

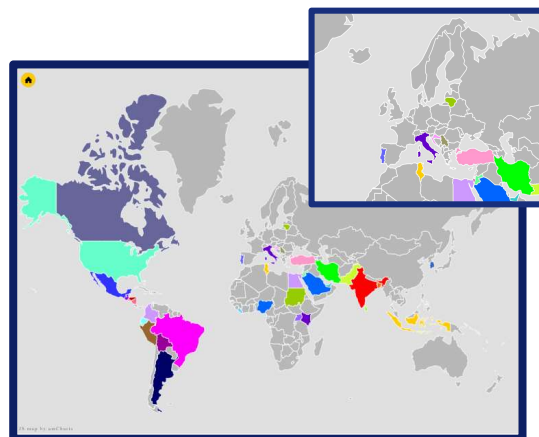
From March to June, a new original initiative has been proposed and set up by the SB. The name is ‘**PitchD – The PhD Pitch**’ and aims at giving to PhD student the opportunity to present their research activity to a public made of other students, both MD students and PhD students, professors and researchers. Five events have been organized and in total 10 PhD students (both from Politecnico and from other Italian or foreign universities) took part to it as speakers. A certificate of participation has been provided to all students that gave a presentation. The ‘PitchD’ presentations have been recorded and then uploaded on our Youtube channel, in order to make them available also to people that were not able to attend the event or to students from other universities. We received good feedbacks about this initiative.

Last seminar organised in this academic year was a lecture given by prof. **Franco Simini**, visiting professor from Universidad de la Republica (Uruguay) at Politecnico in that period.

All seminars had a good participation, demonstrating the increasing interest in the IEEE SB from the students. Moreover, in the next year the organization of the ‘PitchD’ events will further improve and awards will be given for the best presenters.

In April the SB co-sponsored the seminar ‘Network Systems: Theory and Applications to Synchronous Power Flows’ given by **Francesco Bullo** (University of California, Santa Barbara) and organized by the IEEE CSS Chapter.

The Student Branch contributed to the advertising of the **IEEE MadC Contest** 2018. Actually, on behalf of the SB, the Chair was selected as MadC Ambassador for the University and the Italy Section (no other applications were sent by people from other universities).



World map showing countries with MadC ambassadors

2018 SELECTED AMBASSADORS

SHOW ENTRIES

SEARCH:

Ambassadors ID	Full name	Country	Field of Study	University Name
IEEEMADC-2018-093	Leonardo Iannucci	Italy	Instrumentation and Measurement	Politecnico di Torino

Previous Next

Part of the SB funds have been used to buy personalised t-shirt. They have been used during the year to advertise the SB between Politecnico Students and to use them as gifts for new members and invited speakers. Moreover, a delegation from the SB took part to the event '**Open Day @ Polito**', organized by Politecnico to present Master Degree Courses. It has been a fruitful opportunity to present again our group and to find new members eager to participate.

In march, the SB sent its candidature to the R8 Exemplary Student Branch Award Committee.

Finally, a Distinguished Lecture, sponsored by IEEE CAS Society, is planned in October. It will be organized by our SB in collaboration with the IEEE North Italy CAS Chapter and it will be hosted in Politecnico and at Università di Pavia. Prof. Michael Tse will give his DL entitled 'How did Facebook grow? Did Twitter, LinkedIn, WeChat and others grow in the same way? - A Network-Based Universal Growth Law'.

Flyers prepared for all events can be found in the Appendix.

7. Appendix – Attached documents

- Student Branch Online Activity Report
- List of current members (from IEEE OU Analytics
<http://www.ieee.org/ouanalytics>)
- Flyers of events

STUDENT BRANCH ANNUAL PLAN

* Denotes a required field

Student Branch Chair Name * ?

Leonardo Iannucci

Student Branch Chair Email * ?

leonardo.iannucci@polito.it

Reporting Year * ?

2019

Student Branch Code / Name * ?

STB06971 - Politecnico Di Torino

Student Branch URL ?

http://sites.ieee.org/sb-polito/

Student Branch Email Address ?

sb.polito@ieee.org

BRANCH OPERATIONS AND FUNDING

Branch Operations and Funding Information * ?



Total funds at the beginning of 2018: 0 \$

Incomes:

- Most Improved SB Award from Italy Section: 300.0 €

Powered by TinyMCE

In the textbox above, describe your branch operations and how you obtain funding for activities. Include information such as total funds on hand at the beginning of the year, total income received during the year, links to fundraising activities, if applicable.

Complete text:

Total funds at the beginning of 2018: 0 \$

Incomes:

- Most Improved SB Award from Italy Section: 300.0 €

- SB Rebate 2018 from IEEE: 298.0 \$ (261.39 €)

Total income at the end of the year: 561.39 €

Total expences during the years: 366.74 €

Net balance at the end of 2018: 194.65 €

ACTIVITIES

In the table below, indicate if your Student Branch sponsored the following activities. Activities might include technical meetings, special tours, panel discussions or speakers, S-PAC's and other professional activities, or even social meetings and fund-raising events. The information you provide will enable both Headquarters and the Regional Student Activities Committee Chair to gain valuable insight into your Student Branch and its progress. This record of your activities will also be of use to succeeding officers in organizing their programs. Please provide total number of meetings in each category in the space provided below.

Technical

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1	0	0	0	2	0	0	0	0	1	1	1

Non-technical

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0	0	1	0	0	0	0	0	0	1	0	1

Administrative

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1	1	1	1	1	1	1	0	1	1	1	1

Other

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0	0	0	0	0	0	0	0	0	0	0	0

GOALS

Yearly Goals *

What are the specific goals of the branch for the coming year?







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 Font Family
 



The SB will mainly focus on organizing more events for the members and increasing members number. The board members will work to establish new international collaborations with other SB. To foster technology advancements among the members several Distinguished Lecturers from IEEE society will be invited. Finally, the committee will try to promote the women in engineering affinity group within the university.

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SIGNATURES

Please provide an email address for the officers listed below. A request will be forwarded to the Branch officers to provide their electronic signature for the submitted plan.

Visit <https://www.ieee.org/about/volunteers/rosters.html> for this information.

Please be certain to submit your officer reporting at <https://officers.vtools.ieee.org>.

Branch Chair *

leonardo.iannucci@polito.it

Branch Counselor *

maurizio.martina@polito.it

Section Chair *

tiziana.tambosso@gmail.com

Section Student Activities Committee Chair

marco.santambrogio@polimi.it

Section Student Representative

andrea.rossi.it@ieee.org

Regional Student Activities Committee Chair *

earvaniti@ieee.org

Regional Student Representative *

r8sac@ieee.org

Students - Dashboard

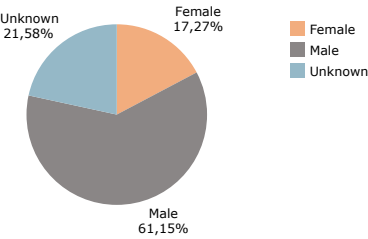
This dashboard provides interactive views for the members attending educational institutions in your organizational unit.

- Refine data through filters or click within a visualization to view results and details.
- Hover over a visualization to display a tooltip with statistical facts.

Region All **Grade** All **IEEE Status** Active

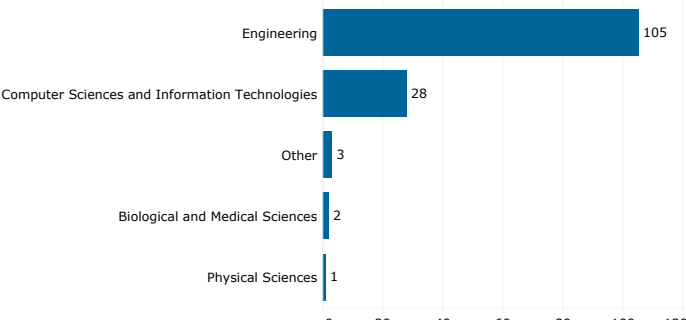
Student Count by Section and School				
School Section	School Name	Total		
Italy Section	Politecnico Di Torino	139		
		50	100	150

Student Count by Gender



Student Count by Grade				
Region	Council	Section	Grade	Total
R8	Region 8 - No Council	France Section	Graduate Student Member	1
		Italy Section	Graduate Student Member	107
			Student Member	31
		Total		139
Grand Total				139

Student Count by Field of Study



Note: Data displayed is based upon volunteer access privileges.
Data made available through this platform is IEEE Confidential Information. Please review the [IEEE Guide to Classification of Documents policy](#) for more information.

Innovation in Big Companies

Politecnico di Torino, LAQ Room
October 26, 2018 - 11.00

FREE ENTRY

Benedetto VIGNA

STMicroelectronics
President, Analog, MEMS and Sensors Group
Industrial Distinguished Lecturer



life.augmented



Bio

Benedetto Vigna is STMicroelectronics' President, Analog, MEMS and Sensors Group, and has held this position since January 2016. He is a member of ST's Executive Team.

Vigna joined STMicroelectronics in 1995 and launched the Company's efforts in MEMS. Under his guidance, ST's MEMS sensors established the Company's leadership with large OEMs in motion-activated user interfaces. Vigna has piloted ST's successful moves into microphones, e-compasses, and touch-screen controllers, as well as environmental sensors, micro-actuators, industrial and automotive sensors, and low-power radios for IoT. Vigna's mandate was further expanded with analog ICs and RF products (2011) and smart-power devices for OEMs and mass market (2016). ST's Imaging division moved under his management in the fourth quarter of 2017.

Abstract

The process for promoting innovation will be discussed in details, with specific reference to the practical case of MEMS in STMicroelectronics.

Innovation starts with a good idea, but it can only go forward if the corresponding product roadmap can quickly adapt to the market evolution. The role of the people involved in the process, and not only that of the technology is key for the success of innovation..

Location

LAQ ROOM



Cittadella
Politecnica,
ISMB building,
back entrance

offered by:



Politecnico di Torino
IEEE Student Branch



Industrial
Distinguished
Italy Section Lecture



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Teaching and Learning with Open Educational Resources (OERs)

Politecnico di Torino - Maxwell Room
6 November 2018 - 17.30



Prof. Sorel Reisman **California State University**

MERLOT Project Managing Director, 2011 IEEE Computer Society President.

ABSTRACT

Today, administrators and instructors are beginning to understand the value and benefits of online learning, and are starting to use and develop OER-based instructional materials and programs at all levels and in all disciplines of education.

This seminar will present examples of different kinds of "open" resources in education, discuss quality issues, address intellectual property and licensing considerations, describe how MERLOT (the Multimedia Educational Resource for Learning and Online Teaching) may be used as a gateway to finding and developing Open Educational Resources.

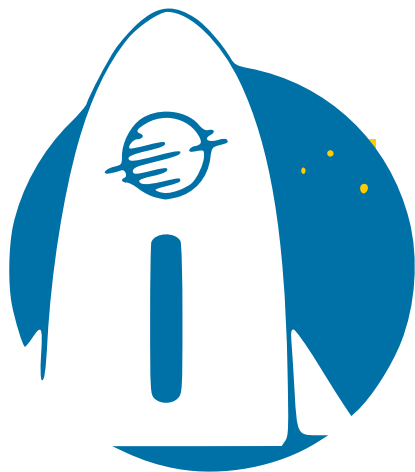
Offered by HKN Polito,
supported by Polito IEEE SB



hknpolito.org

sites.ieee@org/sb-polito





Boost your career with



IEEE

*Advancing Technology
for Humanity*

**Politecnico di Torino - Maxwell Room
18 december 2018 - 17.30**



Prof. Gianluca Setti,

**IEEE Fellow Member,
Politecnico di Torino**

How the IEEE can support your career? What is the role IEEE plays in an engineer's education and career.

Bio

Gianluca Setti is currently Professor at Politecnico di Torino, former professor at University of Ferrara. He held various visiting positions, at University of Washington, at IBM T. J. Watson Laboratories, and at EPFL (Lausanne).

Setti has served as Editor-in-Chief for both IEEE TCAS-I and IEEE TCAS-II and as the 2010 President of the CAS Society. In 2013-2014 he served as the Vice President for Publication Services and Products for the IEEE. He is also a Fellow of the IEEE.



Politecnico di Torino
IEEE Student Branch



POLITECNICO
DI TORINO



IEEE

*Advancing Technology
for Humanity*



Analysis and modeling of medical electronic devices using three-dimensional simulations

Emphasis on cochlear implants and insulin pens

Politecnico di Torino - Maxwell Room

16 January 2019 - 17.30



***Dr. Maria-Alexandra Paun,
EPFL, Switzerland***

ABSTRACT

The recent advances in MedTech have seen an interest for accurate modeling and high-precision simulations in order to characterize and predict the behaviour of medical devices employed in various applications. The presentation will focus on the analysis of modeling using three-dimensional simulations of medical electronic devices such as cochlear implants and insulin pens. To this purpose ANSYS simulator has been used in HFSS and Maxwell 3D modules respectively. Firstly, to characterize the antennas in cochlear implants a multi-tissue model has been prepared and high-frequency analysis has been performed providing amongst other radiation patterns, Smith charts and contour plots of the total radiated field. Secondly, a three-dimensional model for the capacitive measurement in an insulin pen used by diabetic persons has been studied, where a fully parametrized model allowing for capacitance evaluation has been proposed. In the latter case, a multi-electrode configuration for a real-life insulin pen has been investigated.

BIO

Dr. Maria-Alexandra Paun is researcher at EPFL-Switzerland, she works in the development of electronics for medical devices (MedTech). She is currently Chair of IEEE Switzerland Section, Chair of IEEE Women in Engineering (WIE) Affinity Group in Switzerland and Corresponding Member in the IEEE R8 WIE Subcommittee.

Dr. Maria-Alexandra Paun received the Engineer Diploma in 2008 from Politehnica University of Bucharest, Romania. During 2008-2009, she was postgraduate researcher at University of Kent, UK. She received her PhD degree in June 2013 on the subject of Hall Effect sensors at EPFL. During 2013-2015, Maria-Alexandra was Visiting Researcher at University of Cambridge, UK.



BIOMEDICAL ENGINEERING AND MEDICAL INFORMATICS CAN RESHAPE MEDICAL CARE

The cases of ABDOPRE to lower intra-abdominal pressure, MPETOM for electrical impedance tomography, DINABANG to monitor lower limb rehabilitation and SIMIC & SEPEPE as chronic condition and pregnancy follow-up systems as precursors of “mental orteis”



Prof. Dr. Ing. Franco Simini
Universidad de la República
URUGUAY

Politecnico di Torino - Maxwell Room
May 14, 2019 - 16:00

ABSTRACT

Sensors, actuators and digital control allow to respond to clinical needs in terms of diagnostic, therapeutic and prosthetic devices. ABDOPRE is a vacuum bell to modify intra-abdominal pressure for critical patients, in lieu of routine invasive decompression methods used today. IMPETOM is a bedside low cost tomographic equipment to display water and air content graphically based on 16 cutaneous electrodes. DINABANG displays force and torque in real time as the lower limb performs rehabilitation exercises under physical therapist control to avoid lesions or inefficient movements. “SIMIC-App” is prescribed by the physician to cardiac failure patients who need constant follow-up at home. Interaction with the patient is based on clinical guidelines and allows a first level of alerts at home. A second level involves alerts to the Health Care Team. SIMIC also has an Electronic Clinical Record System (ECR) where the App information since the previous visit is displayed, giving quality, meaningfulness and efficiency to the patient-physician relationship. SEPEPE is a similar system devoted to pregnancy follow-up. Medical Informatics has forced Medicine to adopt information capture and processing methods from office and production environments. PRAXIS (Informed Ltd.) may change things as it is designed as a mental orteis for the physician, build up by the accumulation of his treated cases and his professional decisions.

BIOGRAPHY

Franco Simini is Professor of Biomedical Engineering and Medical Informatics, Universidad de la República Oriental del Uruguay where he founded in 1985 the “Núcleo de Ingeniería Biomédica”, joint project of the Medical and Engineering Faculties. Co-designer in the 1980's of the first stored program controlled Telex Switching Exchange for the national communications company ANTEL. Designer of pioneering Perinatal Information System (SIP) to record pregnancies and births in the Americas for PAHO/WHO since 1982. Active in Technology Transfer Simini has directed 130 students in Biomedical Engineering instrumentation and medical informatics projects and master's theses, created 9 courses, holds medical applications patents and published two books. Founding co-Manager (2008-2013) of the “Espacio Interdisciplinario” to foster interdisciplinarity, IEEE Senior Member, Simini was Bioimpedance Congress CLABIO2015 chairman, and is presently organizing SABI 2020, biomedical engineering Congress in March 2020, as well as active in University government and outreach.



Politecnico di Torino
IEEE Student Branch



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Politecnico di Torino - Maxwell Room
26 march 2019 - 17.30

Our PhD members explain to students, colleagues and professors...

Embedded Radar Prototyping for Collision Avoidance and Real-Time Localization



Mr. Stefano Bottigliero, PhD student, DET

The presentation exhibits my present and future work as Ph.D. student in the field of embedded radar system prototyping.

The focus is on the design and prototyping of a collision avoidance system for Automated Guided Vehicles (AGV) based on a Time Of Flight sensor and of a Real Time Localization System (RTLS) based on Ultra Wide Band (UWB) signals. It is shown how these two systems can be used in an integrated Simultaneous Locating and Mapping (SLAM) system.

Combined microwave and Eliashberg analysis of the effects of disorder in Iron Based Superconductors

Mr. Daniele Torsello, PhD student, DISAT

In this seminar I will present a combined experimental and theoretical approach toward reaching new insights into the mechanisms of superconductivity through the analysis of the effects of disorder in Iron Based Superconductors (IBS). We investigate the critical temperature, penetration depth, quasiparticle conductivity and surface impedance of high-quality IBS single crystals by a planar waveguide resonator technique, in a cavity perturbation approach.



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Politecnico di Torino
IEEE Student Branch





Politecnico di Torino - Maxwell Room
16 april 2019 -17.30

Our PhD members explain to students, colleagues and professors...

Measuring human movement using magneto-inertial sensors: is it possible to assess our motor ability outside the clinic?

Mr. Marco Caruso, PhD student, DET



The aim of my research activity is to design and validate advanced algorithms of signal processing to estimate the joint kinematics starting from the inertial and magnetic data collected by IMUs. I will introduce the main projects in which our research group is involved. In particular, we are focusing on a tele-rehabilitation project and a European research to assess the digital mobility of population with and without motor impairments in real-world settings. Master thesis proposals and open research themes will be also presented.

Navigating a Ph.D. - Squeezing the last drop of information from the Global Navigation Satellite Systems

Mr. Alex Minetto, PhD student, DET

To date, I have spent almost three years involved in a challenging topic in the area of satellite navigation systems. My work in the context of cooperative positioning is investigating theory and implementation aspects of the positioning problem using a network of receivers treated as a sensor network, thus collecting and processing multi-agent data to improve localization performances. It is not just a question of exceptional results in your topic, but it is also the opportunity to learn how the world of research works.



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Politecnico di Torino
IEEE Student Branch





Politecnico di Torino - Maxwell Room
8 May 2019 -17.30

Special Session: beyond the Twilight Zone

Beyond the PhD: what's your next step?



Dr. Alessandra Neri,
Technology System Engineer, General Motors

She received her doctoral degree in Metrology from PoliTo with a thesis entitled 'Development of innovative low cost sensors based on optical technologies'. She has been working in General Motors for almost 6 years, first as Hardware Electrical Architecture Development Engineer and now as Technology System Engineer, dealing with connected vehicles and big data. She will present her professional experience, providing an interesting insight on opportunities and challenges facing PhD students after the degree.

Gravitational Waves: understanding Black Holes, Neutron Stars and exotic phenomena in the observable universe

Mr. Gunnar Riemenschneider,
PhD student, Physics Department, Torino University

With the first detection of Gravitational Waves on September 14th, 2015 a new era of Astronomy has begun. In my talk I will discuss these questions and give a brief overview of the field of Gravitational Wave Astronomy. I will discuss the basic ideas of what are Gravitational Waves, how can they be detected, how can they be generated by Black Holes, Neutron Stars and other more exotic phenomena in the observable universe, and what can be understood from studying them.



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Politecnico di Torino
IEEE Student Branch





Politecnico di Torino - Maxwell Room
5 June 2019 - 17.30

Our PhD members explain to students, colleagues and professors...

SoCNNet: An Optimized Sobel Filter based Convolutional Neural Network for SEM images Classification of Nanomaterials



Miss Annunziata Paviglianiti, PhD student, DET.

This presentation provides an insight into optimized deep Convolutional Neural Network (CNN) for the automatic classification of Scanning Electron Microscope (SEM) images of homogeneous (HNF) and nonhomogeneous nanofibers (NHNF) produced by electrospinning process. Specifically, SEM images are used as input of a deep learning framework consisting of a Sobel filter based pre-processing stage followed by a CNN classifier (SoCNNet). Experimental results demonstrate the potential effectiveness of SoCNNet in the industrial chain of nanofibers production.

Metasurfaces for mantle cloaking applications and scattering reduction

Miss Barbara Cappello, PhD student, DET.

Among the different applications of metamaterials, cloaking is one of the most fascinating. In particular, mantle cloaking, differently from other techniques, has the advantage of suppressing the scattered field from the target object by using a 2D thin patterned metasurface, therefore reducing the cloak weight and thickness. The seminar will present an overview of electromagnetic metamaterials and cloaking problems, showing the design and analysis of a particular metasurface based on a width modulated microstrip line.



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Politecnico di Torino
IEEE Student Branch





Politecnico di Torino - Ciminiera Room
12 june 2019 -17.30

Special Session: Visiting the Knowledge

Plant Electronics for Biosensors and Communication



Miss Lee Bar-On, PhD student, Tel Aviv University.

The concepts of a complete plant “Internet of Things” with direct data collection from the plant, is a novel approach. Extensive plant research is available. However, study of plants in terms of electronics and electrical conduction mechanisms are not well defined. Here would like to establish an improved understanding of the electronic conduction within the plant and deploy it for sensing and communication applications. Using this new approach, we seek to establish whether a measurable electrical change, will allow detection of biological and physiological changes within the plant.

Electrochemical Sensing Platforms for Wearable Physiology

Mr Ivan Ny Hanitra, PhD student, EPFL.

Wearable electrochemical sensors play a significant role in physiology and health status monitoring. In sports applications, it is crucial to assess muscle fatigue, mineral loss, dehydration in order to foresee muscle cramping or other physiological dysfunction. Within a multi-sensing context, efficient data processing tools are needed to predict reliably the concentration of each biomarker and to cope with interference. In this talk, electrochemical sensing platforms dedicated to wearable physiology applications are presented. The programmability and versatility of the sensing front-end enables its use for broader biomedical applications.



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