IEEE REGION 8 MEETING CAIRO

IN THIS ISSUE

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Region 8 Committee

Director's Column

Antonio Luque,
IEEE Region 8 Director

Dear IEEE members in Region 8,

My term as Director is coming to an end. It has been my pleasure to serve you all as Director of this Region during 2021 and 2022. They have been tough years in many ways but also full of satisfaction and of great moments shared with members and volunteers in all the virtual and physical events where I have had the privilege of participating.

Region 8 is a vibrant community of nearly 70,000 members in more than 100 countries all over Africa, Middle East, and Europe. They are organized in 59 Sections, 11 Subsections and one Council, in addition to more than 600 technical Chapters, more than 600 Student Branches in colleges and universities, and more than 100 Affinity Groups. Each of these units serve a subset of the members based on geography or technical or affinity interests.

The Region 8 Committee, composed by Section Chairs and Region-level volunteers, had its 119th meeting in Cairo, Egypt, on 15 and 16 October. During these two days, more than 100 volunteer leaders discussed how to better serve the members in the Region and how to prepare for the challenges that will come in the future. Thanks to the Egypt Section for hosting the meeting and for helping to its success.

The different IEEE units in the Region and worldwide aim to serve our members and the society in general through different programs and initiatives, like supporting local Chapters of technical Societies that deliver technical content through conferences, seminars, workshops, lectures, etc., collaborating in public policy programs, developing humanitarian technological activities directed to help those in need, supporting research and innovation by disseminating knowledge, helping entrepreneurs, promoting general awareness of technology throughout the appreciation of our history, engaging university and pre-university students, and encouraging inclusiveness in all these programs.

Among many other things, IEEE is a professional organization, and the professional home of the engineering and technology community all over Region 8. Even though in the era of social media it could appear otherwise, professional organizations are now as important as ever. They can provide the necessary continuing education, access to common resources, or networking options that are essential in every professional career. Becoming a member supports the goals of the organization but is also a resource for our own professional development. No other organization can provide this combination of benefits for humanity in general and for each individual member in the technology and engineering fields in particular.

IEEE is also unique because of our volunteer model. All the activities mentioned above are oriented to members, organized and designed by volunteers, and supported by professional staff. Without the wonderful IEEE volunteers everywhere, who devote their time and effort to our shared mission of advancing technology for the benefit of humanity, none of this, including you reading this issue of R8News, could happen.

Individuals who volunteer for IEEE do it because they believe in our mission and values, but at the same time they get the reward of learning new skills, interacting with other people, or getting to know different technical areas to which they would never be exposed otherwise. If you are considering volunteering, which I personally

IEEE Region 8 Strategy Retreat

Vinko Lesic, IEEE Region 8 News, with Vincenzo Piuri,
IEEE R8 Director-Elect

From left to right: Magdalena Salazar Palma (IEEE R8 Past-Director), Bruno Meyer (Vice-President for IEEE Technical Activities), Antonio Luque (IEEE R8 Director) and Vincenzo Piuri (IEEE R8 Director-Elect). Image credits: IEEE Region 8.

The global challenges imposed by pandemics, travel and in-person restrictions during the past two years reflected significantly on volunteering, requiring agile adapting, and revisiting previously established approaches and IEEE tradition. With this period falling finally behind, IEEE Region 8 starts to look forward, re-igniting volunteering efforts, reinforcing capabilities and organization structure to meet the future requirements of members and communities. With this goal, R8 OpCom members, chairs of subcommittees, programs and initiatives, counting the total of 39 volunteers, all gathered at IEEE Region 8 Strategy Retreat meeting held in Geneva, Switzerland, 10-11 September 2022, to discuss, brainstorm and set the strategy for the upcoming times. The goal was to engage the volunteers and together think about the future of our Region.

Preparations for the Retreat started more than two months prior the meeting, by examining prepared presentations and video recordings, investigating the current status and possible potential, identifying success stories and points of concerns, all in the categories of volunteer pipeline, student retention and income sources. With the best practices and highest challenges identified in pre- and post-COVID era, as well as those of virtual times, the participants started the series of intensive discussions.

The main goal was to understand how to better serve our members and the entire scientific and professional community in our Region, addressing the evolving and emerging needs of people and making the IEEE membership and the services provided by the Region valuable for every individual adopting a human-centric approach. Besides, the aim is to further engage many more volunteers, providing them a unique experience for personal and professional growth, as well as to contribute to the social and economic development and the UN Sustainable Development Goals of the Millennium for the benefit of humanity.

Meeting

The meeting was held in the form of two intensive days of talks between the participants split to eight tables of pre-assigned seats to ensure as much diversity as possible, in order to favor discussion and emergence of different points of view. Participants were welcomed by Antonio Luque, IEEE R8 Director, and Vincezno Piuri, IEEE R8 Director-Elect, emphasizing the importance of the meeting outcomes and wishing the productive and joyful process. Prior to discussions, introductory presentations were held to provide focus and steer the brainstorming phase, divided into three topics occurring as three half-day sessions. The topics were Volunteer Pipeline initiated by R8 MA VC Sara Pena Barros, Students Retention, prepared by R8 SA VC Simay Akar and presented by R8 Student Representative Theodoros Chatzinikolaou, and Financial Sources initiated by Bruno Meyer, Vice President for IEEE Technical Activities and Vincenzo Piuri, Region 8 Director-elect.

Participants analyzed the specific areas of each topic using their diverse experience of the tables comprising of both fresher and long-standing volunteers, from students to life members, from various technical backgrounds and volunteering domains, from different geographical origins of Europe, Middle East and Africa. Participants have been aggregated to ensure several diversities in each group and therefore to be inclusive of different points of view and experiences.

The participants thought about possible approaches to address in our Region the following: Topic 1—Volunteer Pipeline in the areas of local, regional and worldwide IEEE levels, Topic 2—Students Retention in the areas of educational activities, internships and other interactions, and hands-on learning, and Topic 3—Financial Sources in the areas of meetings, educational activities, services to community and society.

At the end of the discussion about corresponding topics, each table delivered their conclusions, represented by a rapporteur who, in cooperation with all participants of that table, summarized the feedback and ideas. Each group identified a single most important approach according to their discussions and provided two additional ones. In total, 24 such summaries were given by corresponding rapporteurs, drafting thus the strategy in spoken and written form.

Conclusions

The complex organizational structure of IEEE and Region 8, numerous programs and initiatives, well-established or newly emerging ones, local, regional or global, all were given a re-evaluation of our volunteers and thoughts on how to proceed. The spontaneously identified, a self-emerging core characteristic is given to collaboration and synergy between various IEEE organizational units. After the retreat, each group has prepared a longer presentation on the summary of the topics and areas, pinpointing the most important approaches. All materials are collected and are being compiled in the final report of the Strategy Retreat and will be used to define together a plan for the coming years and will percolate ideas and opportunities for improving the actions both at local level in Sections, Chapters and Affinity Groups, as well as Regional level. Opportunities for cooperation among Sections and with other organizational units in IEEE, as well as other associations and institutions, have been explored for mutual benefit. Together we can make the difference in our Region and the world.

recommend, please be in touch with us to know more about the many opportunities available. Everyone is welcome to participate.

To finish, I would like to wish the best to IEEE Region 8 and its members in the coming years. A new team of volunteers, led by the 2023 Director Vincenzo Piuri, will manage the Region activities starting next January. They will be serving our members in the best possible way and I have the security that the Region will be in good hands. For me, it has been the honor of my life to serve in the position of Region Director for two years that I will never forget.

Let me wish you all a prosperous year 2023 full of IEEE activities where everybody is welcome to participate.

Antonio Luque

Director, IEEE Region 8

Book review: Introduction to Scientific Programming with Python

Zoran Kalafatić and Siniša Šegvić, professors at the University of Zagreb Faculty of Electrical Engineering and Computing, Croatia

For the editorial/intro: With applications ranging from web design to data science to robotics, Python is one of the most popular programming languages to learn (according to TechRepublic, DevOps, Wired, and alike). In this issue, we provide a review of an open access book about using Python for scientific programming.

Python is one of the most exciting and popular programming languages today. Its main fortes are high expressiveness, novice-friendliness, and a strong community that ensures support in very diverse fields such as natural sciences, web development, and artificial intelligence. However, the language has only recently entered the curricula of high schools and universities. Hence, there are many potential professional users who have not yet had an opportunity to receive formal training. This gap has been addressed by Introduction to Scientific Programming with Python by Joakim Sundnes. The book well suited for the intended audience because it is easily accessible, moderate in size, assumes no prior programming experience and is very easy to read.

The book is divided into nine chapters that gradually introduce the reader to the tricks of the trade through simple, motivating examples. The author covers the main programming constructs such as variables, built-in data types, loops, branching and functions. The basics of the textual user interface are also covered, including formatting text output by using the f-strings introduced in Python 3.6. At the same time, some more advanced ideas are introduced, such as writing test functions and function plotting. All ideas are presented with motivating examples from various science fields: financial mathematics, physics, and numerical mathematics.

Chapter 1 introduces the language through the usual "Hello world!" program and description of various ways for running the Python code. Chapter 2 describes the basic elements of the language: expressions, variables, and typing. It also introduces simple string formatting and usage of modules.

Chapter 3 covers the most frequently used elements of programming: looping and sequential collections. We appreciate the bold decision to present list comprehensions early in the text and defer conditional statements to chapter 4. Indeed, list comprehensions often make the code much more compact and clear, while explicit branching should be avoided to improve code flexibility. The chapter also introduces nesting and slicing as important ingredients for effective and clear programming.

Chapter 4 deals with functions. It presents the basic set of skills for calling existing functions and writing the new ones. Pythonic style is encouraged by introducing anonymous functions (lambdas) and demonstrating simplicity of using functions as arguments of a function call. The chapter presents several algorithms for numerical solving of algebraic equations. These examples are a good fit to the intended audience - engineers and scientists without formal education in computer science. The chapter concludes by a description of unit-testing and thus introduces an important idea of test-driven design.

Chapter 5 deals with reading the user's data from standard input, command-line arguments and files. It covers the problem of converting the textual input to other data types and explains how to use eval and exec functions to make the conversion more flexible. The problem of dealing with errors in programs is also discussed and the
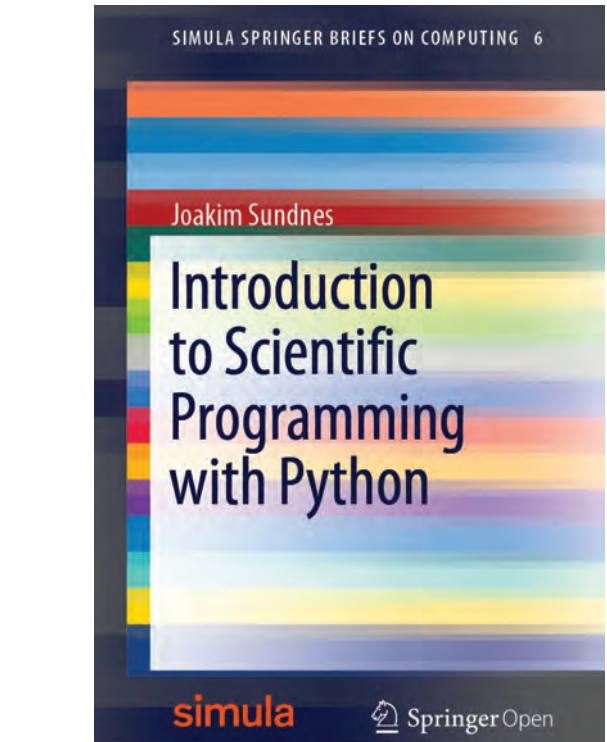
basics of exception handling are explained. The chapter completes by emphasizing importance of proper organization of the source code into modules.

Chapter 6 introduces two invaluable tools for scientific computing: the NumPy library for array computing and the Matplotlib visualization library. The author explains why are vectorized expressions more efficient than writing loops in Python. A special care is devoted to plotting graphs since this is a common daily task for many practitioners. The chapter also includes some recipes for generating animated graphs.

Chapter 7 introduces dictionaries and shows how to use them to represent sparse data. The chapter also revisits text processing by describing the methods for string manipulation.

The last two chapters introduce the ideas of object-oriented programming. Classes and methods are explained and illustrated by several very interesting examples. One of these examples presents a class which encapsulates simple operations on polynomials such as addition, multiplication, and differentiation. The chapter introduces inheritance on the problem of maintaining various formulas for numerical differentiation and integration. The example illustrates advantage of factoring the common code to the base class.

Considering its moderate size (less than 150 pages), the book covers a surprisingly wide range of topics. Although the book format does not allow it to go into depth, the author manages to present the most important concepts of scientific programming in Python. The book is also well suited for readers outside the computer science profession. Computer science professionals can use it as a light introduction to Python, but they should be prepared to consult other sources for deeper coverage.

The book Introduction to Scientific Programming with Python, by Joakim Sundnes (Simula Research Laboratory, Lysaker, Norway) is an open access book, licensed under the terms of the Creative Commons Attribution 4.0. (Simula SpringerBriefs on Computing, January 2020). It is available at: https://link.springer.com/book/10.1007/978-3-030-50356-7

Supporting Social Engagement and Skills Development of Autistic Children

Miriam Cunningham, IEEE R8 Humanitarian Activities Committee, with Eduardo Audiche, IEEE UK and Ireland Section SIGHT

Image credits: Eduardo Audiche

The IEEE UK and Ireland Section Special Interest Group on Humanitarian Technology (SIGHT) identified an opportunity to cooperate with the Stepping Stones Play and Learn Group Charity in Colchester, Essex, UK, to ascertain how technological solutions can support skills development and social interaction among autistic and special needs children. Stepping Stones has an integrated nursery in an economically deprived area that serves 2-5 year old children with additional needs (Cerebral Palsy, Autism, Down Syndrome, various syndromes which result in developmental delay and limited lifespan, sensory impairments and children with little or no language skills) alongside main streamers. It also supports older children with special needs through After Schools Clubs, Saturday Clubs and Holiday Clubs.

The SIGHT volunteers identified lack of speech and language therapy and sensor occupational therapy, and were granted a $9,815 from IEEE HAC for project "Inclusive multi-sensor platform for autistic kids that encourage social interaction", led by Eduardo Audiche, aiming to create an inclusive multi-sensory space that encourages active engagement through motion for children with disabilities, improving their social and cognitive development. Following a comprehensive comparative review, an integrated platform supporting sensory activity of autistic children, provided by OM Interactive, was selected. The solution incorporates the use of projectors with motion-activated sensory technology and over 200 applications designed for autistic children, which can be programmed based on the curriculum related needs and expectations of participating children. A fixed ceiling projector projects the learning activity onto a table or the floor. Depending on the required skill, the carer uses the remote control to select the most appropriate app. Autistic children can interact with other children through movement, exploration and collaboration in a safe environment, learning skills directly. The project provided insight into specific apps to assist development in different areas, complemented by a detailed manual and teacher notes. Staff could determine which apps to use depending on the

developmental aspects they wish to focus on, with specific groupings of children as part of individual education plans or as part of group social skills learning.

In the short term, the direct impact of this SIGHT project was providing a mechanism to address an existing gap in public health services being provided to autistic children in this locality. This integrated solution facilitates carers to engage with autistic children through non-invasive interaction and for autistic children to develop skills and respond to self-paced learning programs through sensory exploration with the objectives of increased independence and ability to co-operate with other people building positive relationships. In the medium to longer term it would be beneficial to expand this initiative to similar centres and schools supporting special needs children within Essex and continue to analyse project results in different settings.

The project was granted IEEE Region 8 Outstanding Section SIGHT of the Year 2022 Award at R8 Committee Meeting Fall 2022 in Cairo on 15 October 2022.

Student Symposium on AI for Good

Sayed Amin Atabak, Vice Chair of Newsletter Committee, IEEE Iran Section

Image credits: IEEE Student Branch at Ferdowsi University of Mashhad

The IEEE Student Branch of Ferdowsi University of Mashhad (FUM) held the first national Student Symposium on Artificial Intelligence (AI) for Good during May 10-12, 2022, in collaboration with the Electrical Engineering Society at this university. The main aim of holding this student symposium was to promote the application of AI in human services, and to encourage students to think about performing original and novel research activities on the use of AI in human society.

The symposium was held in the Faculty of Engineering in the presence of academic members of the Faculties of Electrical Engineering and Computer Engineering at Ferdowsi University of Mashhad (FUM) in Iran. Dr. Mohammadreza Akbarzadeh Totonchi was the scientific chair and the main sponsor of this event, and approximately 400 participants attended this symposium in person, and virtually. This considerably large event included 8 keynote speeches, 3 workshops, and 3 visits to the Robotics Research Centre of FUM and the Green Web company.

A special workshop concerned with industry collaborations was held on the last day of the symposium, which offered a panel for very useful discussions of two academic members of FUM with industry experts from Khorasan Razavi Science and Innovation Park. These events are expected to create a new realistic vision in the minds of students towards AI. Sponsors of this symposium included the

MELECON 2022 held in Palermo, Italy

Tiziana Tambosso, IEEE MELECON 2022 General Co-Chair

Student Paper Contest Awards Ceremony (image credits: IEEE Italy Section)

The R8 flagship conference MELECON 2022 (https://melecon2022. org), chaired by Guido Ala (University of Palermo), Sergio Rapuano (IEEE Italy Section Chair) and Tiziana Tambosso (IEEE R8 Conf. Committee Representative) was held in Palermo on June 14-16, 2022, as a hybrid event. The technical program was organized into 4 main tracks: Smart Energy, Smart Industry, Smart Healthcare and Smart Digital Communities. These themes have been developed across 37 technical sessions, 1 plenary speech, 6 keynotes, 15 invited talks, 7 tutorials. 224 contributed papers, whose authors came from 49 countries and were distributed as follows: 79,3% from Europe, 8,2% from Asia Pacific, 6,8% from Africa and Middle-East, 4% from Latin America, and 1,6% from USA. Female authors were about 18%. The conference was well participated: 269 people onsite and 80 connected online for a total of 349 participants, plus free participation to the tutorial session for 30 students from University of Palermo.

The program was enriched by four special events with six panels: a Special Meeting with Industries, a WIE Special Event, a Special Meeting on Innovative Startups and Entrepreneurs and a Workshop on the EIRIE platform of Pantera European Project. Moreover, four competitions were held during the three days program: the R8 Student Paper Contest, a Competition for Young Startups, a Competition for the best Female High School Student Projects and a Competition for SYP Research Activity.

The Welcome Reception was hosted by the University of Palermo Rectorate in its historic building Palazzo Chiaramonte – Steri (1307). A visit of Palazzo Steri Museum preceded the Reception. The Gala dinner has taken place at Villa Chiaramonte Bordonaro. Two Award Ceremonies were organized during the Gala Dinner and during the Closing Session with the announcement of the winners of the various competitions and of the best paper award. The conference had the Technical sponsorship of IEEE Industry Application Society, IEEE EMB Society and 8 chapters of the Italy Section and the financial sponsorship of ABB and Pantera European Project.

Center of Excellence on Soft Computing and Intelligent Information Processing, the National Society of Smart Systems, and the Green Web Holding group.

Keynote speakers were Dr. Masoud Mazloom, Dr. Seyed Kamaledin Ghiasi Shirazi, Dr. Mohammadreza Akbarzadeh Totonchi, Dr. Mojtaba Rouhani, and Dr. Saeid Abrishami. Finally, members of the special workshop on industry relations were Dr. Habib Rajabi Mashhadi, Dr. Hamidreza Pourreza, Dr. Reza Ghanbari, and Eng. Mohammad Mozafari.

STEM projects in Nis, Serbia

Sandra Veljkovic, Milos Marjanovic and Danijel Dankovic, IEEE Serbia and Montenegro Section

For more than 15 years, the IEEE Electron Devices/ Solid-State Circuits Chapter, the Student Branch (SB) Chapter Nis, and University of Nis ED/SSC Student Branch Chapter are organizing workshops and educations for high school students. The results of that work were systematized and described in the paper "The Importance of Students' Practical Work in High Schools for Higher Education in Electronic Engineering" published in the IEEE Transactions on Education.

Students often underachieve when they are asked to apply theoretical knowledge in the real world, whether in laboratory exercises or in smaller projects. Following the collected experience and findings from earlier studies, a high school course has been devised to promote practical work. The goal was to monitor the students' development not just throughout the course but also during their time at the university. A distinctive course "Let's Put the Knowledge into Practical Work" is designed and implemented by the Serbia and Montenegro Chapter Chair Prof. Danijel Dankovic, and SB Nis Chapter Chair Milos Marjanovic. It demonstrates that students with practical experience in high school are more self-confident and do better later university education.

The chapters organized IEEESTEC Conference (http://ieee.elfak.ni.ac. rs/) as a collaborative effort between local IEEE and EESTEC students. Two STEM Projects were realized: "STEM visits IEEESTEC conference" and "Let STEM visit again IEEESTEC." Three projects of The Center for the Promotion of Science: "Toward the 15th IEEESTEC," "Get Ready for IEEESTEC" and "Let's visit IEEESTEC again." One-day and multi-day workshops and educations were organized for high school students and professors in the topics of Arduino, ARM, basics application of electronic components, different sensors, 3D printing, etc.

Additionally, a lot of activities at local and international conferences were attended. The SSCS Chapter organized a webinar entitled "Inspiring and Grooming Tomorrow's Circuit Stars," and the EDS Chapter organized the hybrid meeting - "EDS SRC R8 Chapters Meeting and MQ in Tarragona." Great honor was the invitation from Technical University of Sofia for participation in Microelectronics & Mechatronics Forum. On these events, the Chapter presented its engagement with high school students, workshops, and motivation for work in this field.

At the end of the year, the participants from all workshops will meet again for the final event of IEEESTEC Conference, international students' projects conference, to discuss about ideas, ambitions, and experiences. This will be the 15th edition of this long-tradition event. Traditionally, the best paper from the Conference participates in the IEEE R8 Student Paper Contest.
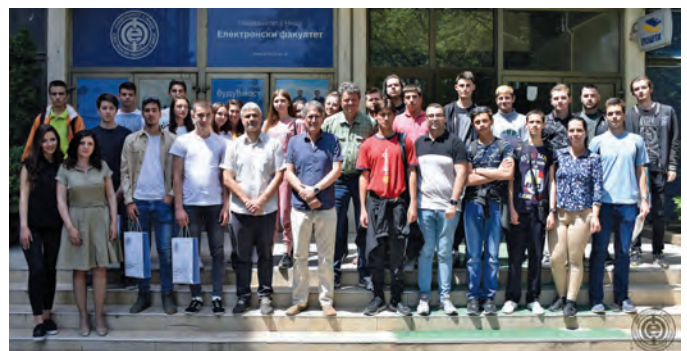

Image credits: IEEE SB University of Nis

IEEE Day in Bahrain Section

Khalil Abdulhusain, IEEE Bahrain Section

Bahrain Polytechnic's IEEE Student Branch celebration of IEEE day was held for 500 attendees from various student branches in Bahrain, joined by interested students from the Polytechnic and beyond. The opening ceremony began with an insightful welcoming speech from dean of EDICT, Dr. Christina Georgantopoulou, followed by a great story-filled speech by the IEEE Bahrain Section founder Prof. Isa Qambar, further joined by Dr. Ali Zolait, the Chair of the IEEE Bahrain Section, Dr. Abdulrahman Sayed, the Student Activities Chair, and Ahliya University's dean Dr. Ahmed Jedidi discussing IEEE and its influence in Bahrain and around the world.

A custom-designed cake made in celebration of IEEE day was brought on stage to be cut by the founder, Prof. Isa Qambar, joined by the high officials. The cake was provided courtesy of our sponsor, Vala Café. A group photo of the event organizers and VIPs was taken to commemorate the event and the organizational effort. Finally, before the activities and carnival began, a Kahoot with valuable prizes courtesy of Think Smart took place. A Bingo game consisting of various custom carnival games was available for attendees to participate and celebrate with the winners, receiving coupons and prizes provided by sponsors. Some of the more prominent inclusions in the event were the booths set up by sponsors such as 7amdaan.io with a robot that roamed around in addition to a customized photobooth for the attendees to take pictures at. Moreover, a showcase of some student projects was held where senior students got to showcase their innovative engineering projects to the VIPs and other students. A quiz with prizes was held by FZ at the closing of the event where some valuable prizes were given away to the students that answered the quiz questions.

The event was a success thanks to the help and support that was received from the following sponsors:

Bahrain Polytechnic, Adhari Park, Vala Café, IEEE Bahrain Women Section, Think Smart, FZ, Melfaa, Sada, Electronics Empire, Merino, Pamba Beauty, Bella Abaya, Elegance Empire, Fiore Gifts, Noon, Cooking, The Nail Hut, and Ghusan Abaya.

Image credits: IEEE Bahrain Section

The 119th IEEE Region 8 Committee Meeting held in Cairo

Vinko Lesic, IEEE Region 8 News

The 119th IEEE Region 8 Committee Meeting was held in Cairo, Egypt, during 15-16 October 2022. The Fall meeting gathered nearly 100 Region 8 Committee members, this time occurring as a fully in-person event. At the date, Region 8 counted 72,383 members in over 100 countries of Europe, Middle East and Africa, including 59 IEEE Sections and 11 Subsections. The representatives were received with the great hospitality of the IEEE Egypt Section and the local volunteers, starting with the Welcome Ceremony.

Welcome Ceremony

Mohammad Amin welcomed participants to the land of ancient engineering and technology and announced the high IEEE officials. Antonio Luque, IEEE R8 Director, welcomed the R8 Committee back to Cairo after 20 years and wished them a joyful and productive meeting. Saifur Rahman, 2022 IEEE President-Elect, continued the greeting with a historical note of 140 years of IEEE. Ahmed Hassan Youssef, IEEE Egypt Section Chair, concluded with a warm welcome of the guests. Following the official part, Zahi Hawass, renowned Egyptian archeologist and former Minister of State for Antiquities Affairs, spoke about 200 years of Egyptology, sharing personal stories from Saqqara to Valley of the Kings, from surface dust deep down to the underground discoveries.

Day 1

The official meeting started with the welcome words of IEEE R8 Director Antonio Luque, followed by a moment of silence to pay respect for Abdulrahman Khalid Al-Ghunaim, IEEE Kuwait Section founder, Chair and Honorary chair, who passed away peacefully on Wednesday, August 17, 2022. The meeting continued in the enthusiastic spirit of the significant membership growth in R8, at the time the highest in IEEE. Antonio further listed prestigious awards to R8 members, highlighted recent regional activities and shared updates in IEEE. Saifur Rahman, IEEE President-Elect, addressed the R8 Committee with welcoming words. He emphasized the global significance of IEEE as an association, and potential to accomplish a technological impact on global challenges, specifically pointing to climate change. Presentation of Member and Geographic Activities (MGA) followed, given by MGA Vice President David Koehler and Managing Director Cecelia Jankowski, who focused on significance of geographic unit vitality, volunteering resources and priority projects. They presented the current status of

Image credits: IEEE Egypt Section

the region realignment process and future IEEE goals. Emre Ayranci proceeded with presenting significance of Young Professionals and fresh programs that community introduces, focusing on micro-volunteering platform as a meeting portal for advertising and searching for volunteering opportunities. Sampathkumar Veeraraghavan, Chair of IEEE Humanitarian Activities Committee, presented humanitarian programs and events, putting focus on the ones held in R8. He offered the possibility of sponsoring 1-5k$ for up to 6-month projects with humanitarian focus, where 172 proposals are already received this year. Paul Cunningham, Director of Division VI comprising several societies, and Yousef Ibrahim, MA Vice-President of the Industrial Electronics Society, offered collaboration opportunities. Bruce Krogh presented the "IEEE Continu>ED" initiative for strengthening continuing education for technical professionals in Africa. The highlights from other IEEE Regions were presented by Barry Tilton, Rob Anderson, Enrique Tejera and Deepak Mathur, Region Directors from R2, R7, R9 and R10, respectively. Peter Nagy, R8 Vice-Chair of Technical Activities, continued with announcing individual reports from his team: John Matogo (Chair, R8 Action for Industry), Andrejs Romanovs (Chair, R8 Chapter Coordination), Habib Kammoun (Chair, R8 Conference Coordination), Tuncer Baykas (Chair, R8 Standard coordination) and Conrad Attard (Chair, R8 Professional and Educational Activities).

After lunch break, Ali Hessami, VC & Process Architect of IEEE AI Ethics Certification under IEEE Standard Association, spoke about the social responsibility in emerging autonomous intelligent systems. Abdullateef Aliyu, Vice President of IEEE Smart Village and Chair of Africa Working Group, presented IEEE Smart Village initiative and recent efforts in bringing renewable electrification and communication networks, increasing computer literacy and education in general to African countries. Student Activities presentation followed by Theodoros Chatzinikolaou, R8 Student Representative, with focus on student contests, training, new initiatives, and awards. He outlined the Student and Young Professional (SYP) Congresses with focus on recently held SYP 2022, additionally announcing an open call for cross-sectional SYPs for 2022. Khaldoun Taktak, Chair of SYP Congress 2022, provided a summary of the SYP Congress held in Tunis, Tunisia, 3-7 August, which gathered over 220 participants from over 40 countries. Lee Crudgington, R8 SAC member, presented results of AdHoc on student contests with focus on IEEEDuino contest. Sara Pena Barros, Vice-Chair of R8 Membership Activities, continued and announced her committee, followed by individual presentations of Mike Hinchey (Chair, R8 Membership Development), Almedin Kavaz (Chair, R8 Young Professionals), Peter Magyar (Chair, R8 Life Members), Abdullateef

Aliyu (Chair, R8 Humanitarian Activities), Maria-Alexandra Paun (Chair, R8 Women in Engineering) and Martin Bastiaans (Chair, R8 History Activities). Mohamed Amin, Chair of R8 Career Services, further presented the progress in Careers New Initiative Ad Hoc. Sara Pena Barros continued with presenting the progress of IEEE R8 Entrepreneurship Ad Hoc. The official part of Day 1 of the Meeting was concluded by a group photo, followed by the social program with a tour of Cairo, awards ceremony, and the gala dinner.

Day 2

After the call to order, Antonio Luque introduced Day 2 of the Meeting, and the R8 finance update was presented by Adam Jastrzebski, IEEE R8 Treasurer, followed by the proposal and approval of the 2023 budget. Vincenzo Piuri, R8 Director Elect, presented the preliminary report from the R8 Strategic Retreat held in Geneva, Switzerland, during 10-11 September 2022. Adel M. Alimi, Chair of R8 Africa Council, presented IEEE in Africa Strategy and Africa Council Strategy 2022-2025, pinpointing opportunities for IEEE representation in 37 additional countries in Africa. Magdalena Salazar-Palma, R8 Director 2019-2020, led the suggestion and approval of changes to R8 Operations Manual, newly forming R8 Diversity, Equity and Inclusion Committee and R8 Entrepreneurship Committee. She continued with initiating discussion on extension of the term of R8 Zone representative. The R8 Committee voted to extend the currently serving Zone representative until the end of 2024. She further proceeded with the process of election of 2023-24 OpCom and N&A members, followed by presentations and voting, finally electing Ljupco Karadzinov as R8 Secretary, Adam Jastrzebski as R8 Treasurer, Vinko Lesic as R8 VC for Member Activities, Abdullateef Aliyu as R8 VC for Student Activities, Marios Antoniou as R8 VC for Technical Activities, and Vicent Egessa, Jan Haase and Ilhem Kallel as members of the R8 N&A Committee. Vera Markovic, R8 SAC member, presented the Student Paper Contest program. Costas Stasopoulos, R8 Sections Congress Coordinator, announced the next Section Congress on 11-13 August 2023 in Ottawa, Canada. Antonio Luque further announced the 120th IEEE Region 8 Committee Meeting to be held in Bucharest, Romania, in Spring 2023.

Antonio Luque finally concluded the meeting, his last one as the Region 8 Director, with a warm thank you note to all OpCom members, Section Chairs, Subcommittee Chairs and members, and all volunteers in general, for their outstanding efforts and dedication during the unprecedented challenges faced in his term. All the participants stood up clapping and solemnly sharing their respect to his great effort in leading Region 8 and volunteers during the past two years.

Image credits: IEEE Egypt Section

Student Activities Column

FOSSCOMM 2022

Iliana Platona, IEEE University of Thessaly (Lamia) Student Branch Chair, IEEE Greece Section

Following the initiative and partnership of the IEEE Student Branch University of Thessaly Lamia and the IEEE Student Branch University of Thessaly Volos, and under the auspices of the University of Thessaly, together in collaboration with the Department of Computer Science and Biomedical Informatics and the Open Technologies Organization ELLAK, our University and the IEEE Student Branches held the FOSSCOMM 2022 Free and Open-Source Software Communities Conference in Lamia on November 18-20, 2022, at the premises of the Department of Informatics with Biomedical Applications.

FOSSCOMM is an annual national conference of Free and Open-Source Software Communities. It is addressed to developers, students and generally anyone interested in Open Source and Open Technologies regardless of their background. It involves open-source communities, developer groups and project contributors. The content is of broad interest, from technical issues and workshops, to translations, legal issues, free/open-source policy issues, etc. The main topics this year were the application of Open Technologies in the field of healthcare and their application in the fields of Artificial Intelligence and Machine Learning, as well as talks on their applications in other scientific disciplines. The conference included an open discussion on Open Technologies in which questions from the audience were answered, workshops in which participants had the opportunity to learn about Open Technologies and the application of Open Technologies in the field of Science and Technology, and a discussion on Open Technologies in the field of Education.

Lead Your SB Camp event in Greece

Alkiviadis Michalitsis, IEEE Greece Section Student Representative

On the 8-9 of October 2022, IEEE Greece Section co-organized the "Lead your SB Camp", which took place at the Campus of the University of Thessaly in Lamia, with IEEE University of Thessaly Student Branch Lamia. Attending and actively participating the event were the IEEE Greece Section Young Professionals Affinity Group, the IEEE Greece Section Women in Engineering Affinity Group, the IEEE Greece Section Student Representative as well as the IEEE R8 Student Representative, Theodoros Chatzinikolaou.

The aim of the event was to meet the Student Branches Executive Committees, as well as to facilitate the communication and networking among them and to provide them with guidance on the organization and management of their Student Branch throughout the officers' tenure. 40 Officers from a total of 10 Student Branches, attended the event, while during the event, a variety of presentations, workshops, open discussions, and poster sessions took place.

PhD Forum at the 30th SoftCOM conference in Split, Croatia

Maja Matijasevic, IEEE Croatia Section Past-Chair

The 30th International Conference on Software, Telecommunications and Computer Networks (SoftCOM) took place on 22-24 September 2022 in Split, Croatia, in a hybrid format. The PhD Forum, hosted by SoftCOM 2022, was organized as an event dedicated to PhD students. The goal of the Forum was to give students the opportunity to present their dissertation topics and work-in-progress to a diverse community of researchers from academia and industry, as well as to network with their peers.

To be included in the SoftCOM 2022 PhD Forum, doctoral students were invited to submit a two-page extended abstract for review. The submissions were reviewed by the members of the Program & Organizing Committee and the members of the SoftCOM Technical Program Committee, based on relevance to the conference, innovativeness, and quality of (written) presentation. A total of 9 submissions were accepted and presented at the conference by PhD students from Croatia, Bosnia and Herzegovina, and Italy.

The PhD Forum session began with a series of fast-paced introductory pitch talks in which each student gave a brief outline of one's doctoral research work in a 2-minute time slot. This part of the program was chaired and moderated by Maja Škiljo (University of Split) and Petar Krivić (University of Zagreb) as members of the Program & Organizing Committee. After the pitch talks, the students and the audience moved to the poster display area to further discuss individual posters.

The winner of the best presentation contest, as determined by the audience through a ballot, was Katarina Mandarić, a PhD student at the University of Zagreb Faculty of Electrical Engineering and Computing. The title of her presentation was "Multi-Agent System for Service Provisioning in an Internet of Things Smart Space based on User Preferences".

SoftCOM 2022 was organized by the University of Split, FESB and the Croatian Communications and Information Society (CCIS), and technically co-sponsored by the IEEE Communications Society, IEEE Croatia Section and the IEEE Croatia Section COM Chapter. The general chairs were Dinko Begusic (University of Split) and Sinisa Krajnovic (McKinsey & Company); and the Technical Program Committee Chairs were Nikola Rozic (University of Split) and Pascal Lorenz (University of Haute Alsace, France).

Lead Your SB Camp group photo (image credits: event organizing team)

Participants of the SoftCOM 2022 PhD Forum (image credits: Maja Matijasevic)

IEEE Uganda Section Bringing Industry Closer

Vincent Olema, Chair of IEEE Uganda Section Action for Industry

As a follow up of the "IEEE Continu>ED" program July meeting in Kampala, Uganda, which gathered stakeholders from government, regulators and industry, Action for Industry (AfI) of IEEE Uganda Section established joint collaboration with MTN Uganda and organized regular meetings, finally participating jointly at "MTN 2022 Career Fair" in September. The AfI Uganda was one of the exhibitors with booth committed to promoting IEEE and establishing more partnerships with industry, attracting many members to join IEEE.

"IEEE Continu>ED" program is a new initiative to design and deliver industry-driven continuing education programs in Africa for practicing electrical, telecommunications engineers and IT professionals. In 2019, IEEE carried out research using focus groups to determine where the continuing education content offered by the IEEE overlapped with the needs of electrical, telecommunications engineers, and IT professionals. Sessions were held in several African countries including Kenya, Uganda, and Zambia. The stakeholders who attended these meetings were practicing engineers, scientists, from industry and academia.

The program is now running in Ghana, Kenya, Nigeria, Rwanda, Uganda and Zambia. The goal is to make "Continu>ED" a scalable and sustainable initiative that will continue to develop and grow in the future with support from other partners. The project is funded by the IEEE New Initiatives Committee with support from the Africa Council. Lucy Muchira, "IEEE Continu>ED" program specialist for African Region, held strategic meetings in May 2022 with key partners in Uganda who themselves enrolled in the program.

Image credits: IEEE Uganda Section

Image credits: IEEE Uganda Section

Sudanese Students and Young Professionals Congress 2022

Neemat Abdelrahim, IEEE Sudan Sub-Section SAC Representative

IEEE Sudan Subsection is pleased to report that the first Sudanese edition of students and young professional (SYP) congress was held in Sudan on August 18-20, 2022. The Sudanese SYP Congress, (SSYP) was designed to provide a place for students and young professionals

to network and to prepare them for the new world ahead by raising awareness of the current technological advances introduced by the 4th industrial revolution. As we stand on the brink of a technological revolution, the Fourth Industrial Revolution is a way of describing the blurring of boundaries between the physical, digital, and biological worlds. It's a fusion of advances in artificial intelligence (AI), robotics, the Internet of Things (IoT), 3D printing, and other technologies; therefore, it's the collective force behind many products and services that are fast becoming indispensable to modern life.

The IEEE SYP congress consisted of four different parts sessions and workshops, exhibitions and projects, discussion panels and debates, and smart city exhibition, each day with own topic (i.e. Metaverse, Blockchain and Web 3.0.), and each topic with demonstrated related projects. The SSYP exhibitions featured solutions provided by students, professionals and companies, offering a chance to showcase backgrounds, achievements and contribution, moreover, the exhibitions provided the first experience with real technological applications.

The exhibitions were held in five categories: Discover with us!, to introduce the audience to the latest fields of work that have emerged in recent years; A World of Opportunities, to provide current job opportunities in a variety of fields delivered by SSYP sponsors and partners; Student Branches Achievements, to showcase and celebrate IEEE-Sudan Subsections and their communities and achievements; Applications pool, to present useful applications for students and young professionals; What's Trending?, served as a visual and tangible representation to topics presented in the sessions; Make learning visible! to showcase students innovative projects that they had developed, either as an industry-defined problem or as a custom problem.

The SSYP also incorporated session-related discussion Panels and Debates where participants sided regarding an opinion related to the session's topic, then SSYP team will divide the voters into two teams which communicated, discussed, and sorted out their ideas to be expressed the following day.

Furthermore, the IEEE Sudan's Smart City is a 4-by-4 meters, 3D printed smart city model located inside the exhibition's area. The smart city meets international standards with eight sub-models, each focusing on technologies used in one of the following areas: Clean Energy, Water Supply, Food Security, Health, Security, Telecommunication, Transportation and Recycling, all covered by an e-guide technology working synchronously with the location of the guests informing them of all what is related to the icon or screen the visitor or guest is standing next to.

Image credits: IEEE Sudan Sub-Section

Magnetics in Lebanese High Schools

Ernst Huijer, Chair of IEEE Lebanon Section AP03/MTT17/MAG33 VJoint Chapter

Image credits: Ernst Huijer

With the aim of developing an educational experience for high school students in Lebanon to familiarize them with the basics of magnetism and major applications of magnetics, our joint AP/MTT/MAG Chapter received a $2,000 grant from the IEEE Magnetics Society. Materials for lab experiments were purchased and a manual was written in the framework of a final-year-project at City University in Tripoli, Lebanon. The experiments, so defined, were conducted during a demonstration at Iman High School in Tripoli to a class of 11th grade students. Arrangements were made with St Mary's Orthodox College in Beirut, Lebanon, to conduct such lab experiments already back in 2019 but then severe economic troubles coming after COVID-19 restrictions aggravated our efforts.

With the help of student volunteers, we conducted lab sessions for total of 135 students from 11th and 12th grades during Feb-Jun, 2022. After the introduction of IEEE and the Magnetics Society, students tested forces between pieces of different hard magnetic and soft magnetic materials and observed the response of a compass needle to electric current and induced a voltage by inserting a magnet rapidly into a coil. They also experienced the lifting force of an electromagnet, and a simple model revealed to them the concept of an electric motor. The project resulted in great enthusiasm of the students and volunteers: "In the first experiment, students really enjoyed testing the different magnets. They seemed intrigued by the lines of the magnetic field in the third part. The students visualized the attraction and repulsion forces much more clearly while using the transparent smooth sheet and the iron powder than while using the magnetic sheet.", and the teachers themselves: "Throughout the experiments, junior and senior learners were actively engaged in posing questions, investigating, experimenting and reflecting on learning which is an integral component of the learning process. It helped learners notice the connections between one context and another, between theory and the experience." The author would like to tribute the tireless work and engagement of Walid Kamali, Ahmad Trad, Sabine Farhat, Sara Khalifeh, and Mohamad Abadi, Rima Timani.

IEEE Smart Village at Power Africa 2022

Abdullateef Aliyu, Chair of the Africa Working Group of IEEE Smart Village

The week of the 22nd of August was filled with numerous activities in Kigali, Rwanda, as the city of 1000 hills hosted the leadership, developers, and volunteers of IEEE Smart Village from around the world who attended the Power Africa 2022 Conference, counting over 250 delegates consisting approximately 70% from Africa, 15% from the United States, and 15% from other parts of the world, listing the total of over 20 countries. Over 59 IEEE smart village delegates were supported by the IEEE smart village leadership as a tradition to bring various stakeholders involved in developing communities globally. This is to aid interaction, sharing of updates, and experiences on various impactful and meaningful funded projects being executed around the globe.

The energy, passion, and mode of engagement this year were special after 2 years of COVID forcing the conference into virtual forms. Several in-person activities were carried out to further reinforce the relationship and opportunities for new partnerships to get the program going at various crannies of the globe. Power Africa was last held as a virtual conference in Nairobi, Kenya, as the 9th edition that joined the list of successful conferences with 26 IEEE Smart Village (ISV) sessions, 9 keynote addresses, 170 technical papers presentations, and more than 300 virtual participants. The 10th edition started with 3 full-day tutorials at the higher-education centers of excellence in teaching and research held at the University of Rwanda, and later transferred to the Carnegie Mellon University of Africa, Kigali. ISV held 24 sessions for developers, 7 leadership sessions, and 8 sessions from invited experts. A panel session with panelists from representatives of ISV leadership, developers, and the regional working groups featured for the first time at the Power Africa conference to educate the community on the future direction titled: "ISV 101- the present and the future", moderated by the ISV senior program manager Mike Wilson. The official closing ceremony was held on Thursday 28th August with the official handover of the banner to the next host of the Power Africa Conference – Morocco, October/November 2023.

The ISV special dinner and award ceremony was held at The-Hut in the city center where developers, volunteers, and leadership were awarded for outstanding performance. Prof. Morgan Kiani, Mike Wilson, Renea Wilson, and Bai Blyden helped with the presentation of awards to exceptional volunteers and developers. The awardees for the Excellence in Leadership Award for 2022 are John Nelson, President of ISV, Abdullateef Aliyu, Chair of the Africa Working Group,

IEEE Smart Village Delegates at Power Africa 2022, Kigali (image credits: IEEE Smart Village)

Robotics in Tunisian Public Schools

Miriam Cunningham, IEEE R8 Humanitarian Activities Committee, with Nizar Rokbani, IEEE Tunisia Section SIGHT Past Chair

The IEEE Tunisia Section SIGHT identified opportunities to initiate Science, Technology, Engineering and Math (STEM) skills and capacity building initiatives focused around setting up Robotics Clubs in public schools across Tunisia. This initiative builds on the "Robotics for Democracy" project, 2017-2018, supported by IEEE Robotics and Automation Society (RAS), aiming to promote access to educational robotics and STEM education to primary schools and colleges, support training educators, local activities, and robotic challenges competitions. It was succeeded by "IEEE HAC Robotics for Equality & Democracy" (R4E&D) program with a grant of $8100 from the IEEE Humanitarian Activities Committee (HAC) received in 2018, led by Nizar Rokbani, to procure the robotics starter kits, run trainings, capacity building workshops and promotional events.

Capacity building was organised in three phases: initial capacity building workshops with educators as Try Engineering Sessions, followed by IEEE Volunteer organised training with pupils in classrooms and events with local educators, and finally workshops organised by newly empowered educators at local level and supported by IEEE Volunteers. The R4E&D project provided educators and workshop participants with access to starter kits (Arduino kits, Try Engineering kits) as a low-cost STEM experience sustainable after the project end. During 2019-2020, over 40 Capacity Building workshops were organised as a mix of student focused workshops, educator training, competitions, other events, and a Robotic Summer Camp. More than 60 educators were trained in Robotics during this initial phase. A Project Exhibition, organised to facilitate pupils to share their results as extra curricula activities, attracted 400 pupils. During 2020-2021, 20 more workshops were organised in the Dar Chabane locality as a consolidation phase: 13 standalone training workshops with local educators, and 7 workshops organised by local educators with IEEE Volunteer support. The short-term impact of this initiative was to provide public primary schools in different regions of Tunisia with access to new skills and kits, to establish robotics curricula. Longer term impact envisioned transferring practical skills and experience to students in early age to boost confidence and encourage an engineering career.

Since September 2021, educator training has been consolidated with over 30 new STEM educators trained in Bouargoub and Ben Arous. Extra curricula clubs have been deployed in 11 public primary schools in urban and rural areas of Tunisia. On the state level, thanks to the support of academic inspector Khaled Shabou and to the alignment with local technology teaching objectives for level 6 of Tunisia Primary Education, experimental weekly workshops are run in two localities as part of the regular curriculum. A partnership with "Madrassaty *(en. my school)* association" facilitated the activity to be sustained and extended in that locality to include a robotic competition. A strategic development plan was approved with the Tunisia Primary Schools Inspectors Association for classroom curricula. New deployments in Manaret Hammamet, Benarous and Bouargoub schools started in February 2022, with the objective of achieving sustainability. Today, the plan is to deploy the program in 23 regions across starting with 2023 as a collaborating between RAS Education Initiative, Tunisia Inspectors Association, and local companies.

Given the success of the presented SIGHT project, other R8 SIGHTs and sections are encouraged to collaborate with the R4E&D program

organisers to consider how to adapt this capacity building skills program to support STEM education at primary school level in other R8 locations. More information on R4D are available at https://cmte.ieee.org/hac-red.

Pupils' results demonstration and educators training (Image credits: R4E&D Tunisia)

UAV Competition at ICUAS 2022

Ana Milas, IEEE Croatia Section Treasurer, and Maja Matijasevic, IEEE Croatia Section Past Chair

The 2022 International Conference on Unmanned Aircraft Systems (ICUAS) took place on June 21-24, 2022, in Dubrovnik, Croatia. Having been established in 2008 as a workshop, and becoming a conference in 2011, ICUAS has been technically cosponsored by the IEEE Robotics and Automation Society and the IEEE Control Systems Society since 2012.

ICUAS 2022 was the first to include an Unmanned Aerial Vehicles (UAV) competition as a new feature in the conference series. The competition was geared toward student teams, challenging them to sharpen their skills and compare them with those of their peers.

The use case scenario set forth by the organizers was inspired by fire-fighting UAVs in a complex urban environment. The scenario required the drone to:

1) explore its environment (3D area map),
2) detect the target ("fire"), and
3) plan and execute the appropriate launch trajectory to hit the target with the "fire extinguishing ball" from the side (not just dropping it onto the target from above),

all this without stopping, landing, or manual intervention by the student team (hence, autonomously). In technical terms, each team had to solve a set of complex problems involving computer vision, trajectory planning and navigation for the drone to successfully accomplish its mission. One of the scenarios, e.g., required the drone

UAV indoor arena at ICUAS 2022 (image credits: ICUAS 2022 committee)

to locate the target (marked by an AR Tag placed on a box) and hit it with a tennis ball released from the drone.

To encourage participation and lower the entry barrier, the competition was organized in two phases. The first phase ("qualifiers") involved simulation and took place remotely, with the rules, the technical description and software shared on GitHub. The second phase ("finals") took place at the conference venue, and it involved live trials in an indoor arena set up with a motion capture system. To further motivate and support the students, the cost of accommodation and registration for the finalists was sponsored by the conference.

A total of 53 teams from 22 countries had registered for the competition. Of these, 15 teams submitted their solutions for the simulation phase of the competition, and five teams qualified for the finals at the conference:

- CVAR, Universidad Politécnica de Madrid, Escuela Técnica Superior Ingenieros Industriales ETSII, Spain;
- Fire-RISC, New York University – New York University Abu Dhabi , RISC Lab, UAE;
- Q-FORGE, McGill University, Canada;
- SUPAERO'S ION lab, Institut Supérieur de l'Aéronautique et de l'Espace, ISAE-SUPAERO, France; and
- SantDrone, Scoula Superiore Sant'Anna – Institute of Mechanical Intelligence (IIM), Italy.

After a full day of intense live competition, the winner was team CVAR, with Miguel Fernandez Cortizas as team leader, and David Perez Saura, Pedro Arias Perez and Rafael Perez Segui as team members.

The next ICUAS 2023 will take place in Warsaw, Poland in June 2023.

UAV competition winners and organizers at ICUAS 2022 gala dinner (image credits: ICUAS 2022 committee)

Mario Aleman, Chair of the Latin America Working Group, and David Kankam, Chair of the Project Development Committee.

Participants had the opportunity to take part in technical and cultural tours, including visiting the Zipline and Kigali genocide memorial. A special trip with 55 delegates to Kanazi, a remote village in Rwanda, was organized by Monica L. Brown, the CEO and founder of Africa Development Promise (ADP). The place is a sustainable greenhouse managed by women who grow special farms with effective use of energy, cooperated by ADP. You can join the ISV community by visiting https://smartvillage.ieee.org.

IEEE RTSI 2022 held in Paris

Gérard-André Capolino, Pascal Lorenz and Frédérique Vallée, RTSI 2022 Technical and Organization Committee

Image credits: RTSI2022 Organizing Committee

After 6 editions of being the flagship conference of the IEEE Italy Section, the RTSI2022 (Research and Technologies for Society and Industry) forum was held August 24-26, 2022, in the Jussieu Campus of Sorbonne University Paris, France. It was organized by IEEE France Section and co-sponsored by IEEE Region 8, Italy and UKRI Sections. The RTSI2022 gathered around 100 participants coming from all around the world.

The main objective of RTSI2022 was to bring together researchers and industry practitioners in the technical fields covered by IEEE to promote and strengthen partnerships and cooperation between academia and industry, increase understanding and awareness of how engineering and technology can have a positive impact on the quality of life, promote discussion in between the research community and government agencies on effective and successful research policies, disseminate the latest progress, discoveries and innovative applications, and promote cooperation between researchers working in different fields of research.

Then RTSI2022 hosted special sessions in topics of antennas design for communication, sensing and characterization methods, AI and the COVID, sensors for a smarter world and smart medical devices.

The panels were held on topics of prediction of failures in the industrial sector, R8 Action for Industry, ethical assurance of autonomous algorithmic systems, and future directions of communications. The conference offered additional five technical tracks, four tutorials and a student forum.

Smart Kibanda Project

*Kithinji Muriungi, Vice Chair of IEEE Kenya Section and
Chair of IEEE Young Professionals Kenya*

The Smart Kibanda (kiosks) aims to solve the major problems in traditional kiosk outlets: no access to a reliable electricity source, poor security, lack of proper storage facilities, and poor inventory control, which results in post-harvest food wastages, theft, and small profit margins for the owners. The smart Kibanda is a solar-powered modern Kibanda, with sufficient lighting, storage units, and enhanced security systems. The concept is the result of a $5000 grant "Smart Kibanda" by IEEE Humanitarian Activities Committee (HAC), Special Interest Group on Humanitarian Technology (SIGHT), led by Kithinji Muriungi and Chris Murimi and kicked off in 2021, which developed and delivered five kiosks in Kenya.

The core team consisted of teams for electrical and smartness, mechanical, research and finance team who conducted volunteers training, concept development and real pilot implementation. The core underwent intense professional and technical development throughout the project design and development phases conducted by additionally involved volunteers from IEEE and beyond. Technical workshop sessions were held on product design and development, and design thinking to facilitate effective planning, design, development and deployment of the project. These sessions utilized the use of product design, development and management tools and practices focused on developing project work plan, tracker, budget, online collaboration and documentation.

The team researched and adopted innovative features to improve the shelf life of the groceries, including natural ventilation, interior color, size of the openings and shape of the shelves, relying on passive elements and natural phenomena. The kibandas were also equipped with 100 W solar panel and 75Ah battery with corresponding DC power converters also ensuring steady power source for lighting and AC loads, as well as security locks. The project

Image credits: Kithinji Muriungi and Chris Murimi

was also conducted in partnership with Uplands Fabricators who operates in the Jua Kali (Technical & Engineering Informal) Sector. Four units were deployed. Two were given individual sellers: Hellem Mutai in Moi University Mabs area with 20 years of greengrocery supporting her family of 7, and Monica Koech ("Mama Carol") in Moi University Kesses area, an elderly woman whose kibanda is the main source of income for her family of 5. Two more were given to the organizations: Tumaini Innovation Center in Kapsoya area of Eldoret committed to imparting technical skills to street children, and Kimumu People Living with AIDS organization in Kimumu area of Eldoret, which is taking care of street children and orphans with HIV and AIDS.

More can be found in the project documentary trailer or full documentary at IEEE Moi YouTube channel. A special thanks to everyone who made this multidisciplinary project a success!
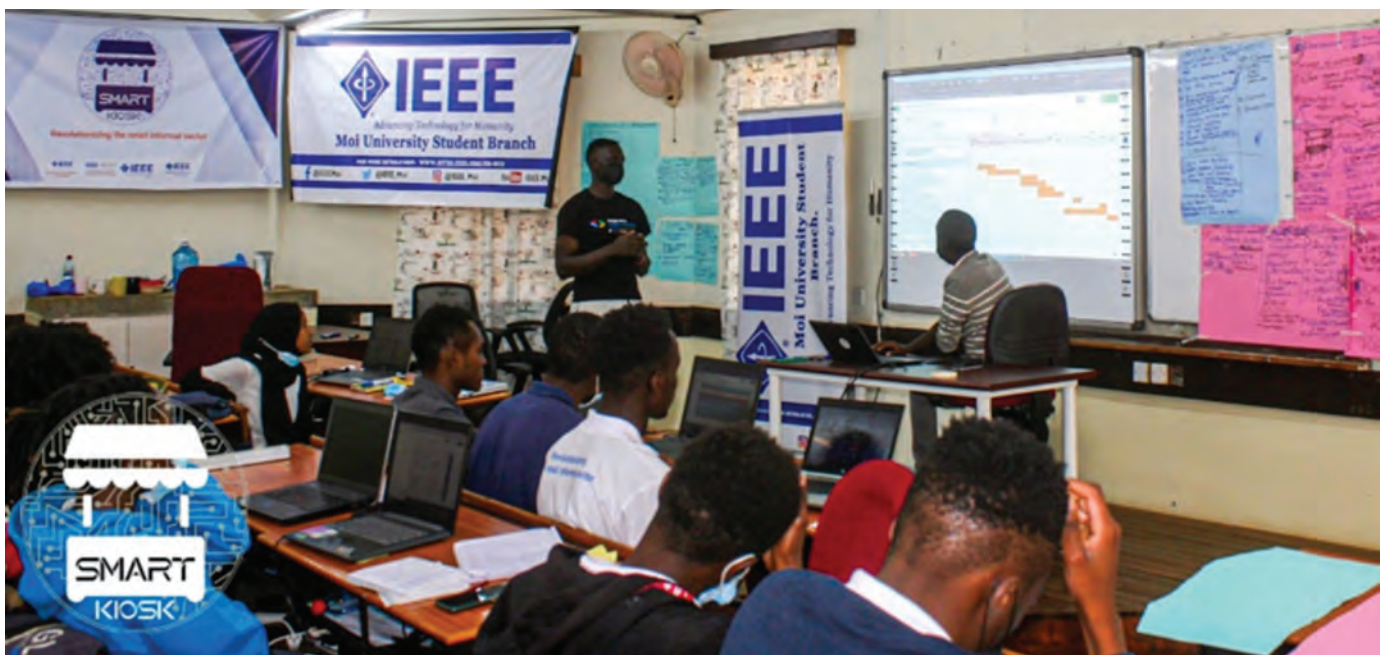

Image credits: Kithinji Muriungi and Chris Murimi

News in IEEE Iran Section

Sayed Amin Atabak, Vice Chair of Newsletter Committee, IEEE Iran Section

Research-Industry Award established in honor to Prof. Morteza Anvari

Towards promoting the scientific and industrial aspects of Electrical and Computer Engineering in the country, every year the IEEE Iran Section awards more than 17 prizes to honor the pioneers, researchers and students in the field. The awards are traditionally named after the prominent people from the Section's history to honor both the recipients and the memory of these nobles. Some of these prizes, such as the Education Award of Prof. Parviz Jabbedar Maralani, Research Award of Prof. Mohammad Hakkak, Research Award of Prof. Caro Lucas, Research Award of Prof. Seyed Mahdi Fakhraei, are awarded to the exemplary candidates in education, research and industry.

This year, a new award is established "Research-Industry Award Prof. Morteza Anvari", proposed by the Computer Society of the IEEE Iran Section to acknowledge and reward the efforts of those who have impacted sustainable development in the field of computer and information technology. This prestigious award is given to candidates with high reputation in teaching and research, significance in publication and dissemination, impact, diversity, innovativeness, internationality, technical management, investments, and other remarkable achievements in the categories of educational, research and industry activities.

Bringing IEEE Standards to Industry

The Standards Development Committee of the IEEE Iran Section established a Memorandum of Understanding (MoU) on "Development and Promotion of IEEE Standards" between IEEE Iran Section and Tavanir and Power Research Institute with subject areas of planning and implementation of conducting education-oriented courses and holding seminars, training courses and specialized workshops, monitoring and evaluation of scientific and educational activities, collaboration in the preparation, compilation and implementation of the educational roadmap in the field of development and promotion of IEEE standards and related to the activities of Tavanir Institute.

Lebanese Electromagnetics Day 2022

Ernst Huijer, Chair of IEEE Lebanon Section AP03/MTT17/MAG33 Joint Chapter

On June 16, 2022, our chapter held the 2nd edition of Lebanese Electromagnetics Day. In light of the dire economic situation, the event aimed to support with cash prizes the best student projects on magnetics at Lebanese universities. Students competed in undergraduate, graduate and post graduate categories by submitting digests on their projects, and seven were distinguished to give a presentation.

After a word of welcome by the chapter chair, the day started with a presentation and demonstration by American University of Beirut engineer Bassam Jadayel, member of Radio Amateurs Lebanon, a club with which our chapter has concluded a MoU with the aim to organize common activities. The introduction to HAM radio was followed by RAL members passionately discussing their hobby. They have initiated and maintained contacts all around the world with like-minded hobbyists. Technological advancement into the digital domain (DMR) was described and the talk was concluded with a live demonstration. Additional talks were given by Youssef Tawk on personal teaching methods to motivate and inspire students to appreciate the beauty of electricity, magnetism, and electromagnetics, and by Oleg Seroff about the industry efforts to limit the exposure to radiation in 5G systems.

Image credits: IEEE Lebanon Section

1st Kenyan SYP Congress

Lavender Ndunya, IEEE Kenya Section Treasurer

The 1st ever IEEE Kenya SYP Congress (KSYP) occurred on the 10th and 11th of November 2022 at the most renowned hotel in Nairobi, Kenya. The conference was organized by Technical University of Kenya Student Branch and IEEE Kenya Young Professionals, in collaboration with Kenya Section. It established a significant networking impact by bringing together industries, professionals and students from within and outside Nairobi.

The congress witnessed a consolidation of students from across the country and neighbouring countries of Uganda and Rwanda. The students gathered from different fields: engineering, information technologies and medical studies. The engineering branches were the flying Aeronautical, rotating Mechanical, detoxifying Chemical, circulating Electrical and Electronics Engineering with a tinge of the towering Civil Engineering. Together with them, gathered young professionals from equally various fields, with IEEE memberships spanning from graduate students to senior members. Some participated as speakers, both from Kenya and abroad, spanning to as far as different continents.

The speakers, renowned professors and industry experts, came as representatives of various associations, NGOs and IEEE organizational units. Those were Geraldine Sande from BDM Access to Energy - Anglophone Africa, David Njugi from East Africa for GOGLA, Maureen Njue-Musau from Kenya Education Network, Olivia Etyang' from VISA Sub-Saharan Africa, Donna Phoebe Rege from Safaricom Women In Technology, Dr. Kanika Singh from American Bureau of Shipping, Prof. Yousef Ibrahim, Vice President of IEEE Industrial Electronics Society, Dr. Heinrich Laue from IEEE Antennas and Propagation Society Young Professionals, Prof. Athina Petropulu, president of IEEE Signals Processing Society, Prof. Marek Jasinski, Chair of IEEE Industrial Electronics Society Students and Young Professionals.

Day 1 – the Panels

On the 1st day there were major panel discussions facilitated by the most compelling of the listed speakers. Moderation of the sessions also involved inclusive engagements between the audience and other guest speakers. The Rump Session was well-versed and involved provocative thoughts, both in the parlance of sarcasm and charisma.

There were presentations of various inventions and developments of students from engineering, social work and computer technology networks. Personal stories and perspectives were shared by individuals, ranging from early stages of learning to the apex of industrial competence.

Day 2 – the Tales

The second day involved the direct presentations from diverse speakers on various topics of professional and personal advice. The congress culminated with gala dinner in the twilight moments of the day. Awards sessions accompanied, giving a spotlight to prominent volunteers: various competition winners, speakers, facilitators and student' volunteers with the IEEE KSYP ambassadors. The Congress sponsor awarded various teams and the IEEE KSYP organizing committee. The dinner was offering local and exotic cuisine and drinks that soothed the participants. The delicacies relieved the barricades of despondency from many souls and brought the accolades of joy; a reality that showed the possibility of the above activities.

Our thanks within IEEE goes to Power and Energy Society, Engineering in Medicine & Biology Society, Student Professional Activities, Signal Processing Society, Computer Society, Antennas and Propagation Society, R8 Student Activities Committee, R8 Action for Industry, „Continu>ED" initiative, as well as Engineers Board of Kenya and e-Mentoring Africa. The event was termed a success with knowledge shared, networks built, members satisfied, and revenue generated to support students and young professionals. With everyone feeling motivated to volunteer, it is certain that such a congress will be hosted again in the later years.

Check more at https://ieee-kenyaconference.org.

Image credits: WBt CREATIVE

Image credits: WBt CREATIVE