Greece Section   **Konstantina Nikita, Chair**

<u>**Section Vitality**</u>

The 2022-2024 Chapters elections procedure has started.

1 Newsletter has been released ([January issue,](#))
The IEEE Young Professionals Greece and the IEEE Greece Section have launched a Mentoring Activity in order to support young engineers at their first professional steps. The Mentors will share their experience and provide guidance in achieving specific professional goals, improving skills, and enhancing career development.

The IEEE Greece Section celebrated the 2021 IEEE Day by co-organizing the COVID-19 Data Hackathon during the IEEE Healthcare Summit: Integrating BHI and AI to Combat Pandemics. The IEEE Healthcare Summit was a virtual event held on 4-7 October 2021. The event reported progress made in the fight against COVID-19 and aimed at better preparations for future pandemics through the integration of Artificial Intelligence (AI) methods and tools with Biomedical and Health Informatics (BHI), including: Translational bioinformatics, Sensor informatics, Imaging informatics, Clinical informatics, Public health informatics, Mental health informatics, Mixed VR/AR and Robotics, Fairness and ethics.

The scientific program included 13 keynotes, 30 plenary talks, 4 lunch panels with 12 panelists, a best poster competition, and a hackathon competition with multiple COVID datasets. The Summit featured a truly international gathering of speakers and delegates from around the world including not only technology developers, but also representatives of the public health community, the medical community, policy makers. The keynote speakers covered a broad range of topics and themes and provided a comprehensive picture of the avalanche of new digital services and data-driven approaches that has emerged to aid pandemic response. The panel speakers included representatives from NIH, NSF and EC who stressed that Covid-19 significantly accelerated the digital healthcare transformation, and discussed how real-world data and AI/ML helped in augmenting scientific understanding of covid-19 and building a coordinated response to this pandemic.

The need for a holistic evaluation of AI use in the aftermath of the crisis was discussed among Summit participants. Issues related with data and trustworthiness of AI were pointed out in multiple sessions towards developing fair and inclusive AI systems. The possibility to share information within and between hospitals was mentioned as a key issue that should be addressed, while also an urgent need for interventions towards behavioral change and incentive-aligned approaches was identified. The data hackathon attracted the interest of many teams around the world and included six challenges with multiple datasets covering: Bioinformatics: Single Cell Sequencing; Bioinformatics: Drug Target; Imaging Informatics (CT Imaging); Sensor Informatics (Audio Signals); Public Health Informatics (Public Health Dynamics); AI for Knowledge Discovery (NLP). Several IEEE-sponsored and individual institution-sponsored awards were given to top-performing teams.

<u>**Students**</u>

List of Student Branches (16); University of Patras, University of Thessaly (Lamia), Aristotle University of Thessaloniki, National Technical University of Athens, Technical University of Crete, University of Western Macedonia,Kozani, Democritus University of Thrace, University of Western Macedonia (Kastoria), University of Peloponnese, University of West Attica, University of Ioannina, International Hellenic University (Thessaloniki), University of Thessaly (Larissa/Volos), University of Piraeus, International Hellenic University (Serres), Ionian University

Dissolved SBs (5); International Hellenic University, Technological Edu Inst of Ionian Islands, Hellenic Mediterranean University, University of Aegean, University of Peloponnese-Patras.

The IEEE National Technical University of Athens (NTUA) Student Branch is collecting food, water, clothes, and hygiene products for the homeless people of Athens. As the winter months get colder our thoughts lead to the less privileged, the people that have no homes and struggle in the streets during these hard times. As volunteers, they have decided to collect these basic need items to help these people and contribute to a better winter for them.

New Student Branch Chapter was formed at the University of Western Macedonia-Kozani Student Branch as new Power & Energy Society Chapter.

The IEEE Student Activities Awards for 2021 were given to the following student branches.

- National Technical University of Athens Student Branch
- Aristotle University of Thessaloniki Student Branch
- University of Patras Student Branch
- Democritus University of Thrace Student Branch
- University of Thessaly (Volos) Student Branch
- International Hellenic University (Serres) Student Branch

On 20 and 21 of November 2021, the 6th IEEE Hellenic Students and Young Professionals (HSYP) Congress was held by the IEEE Greece Section. It was the first time that this initiative was organized virtually, due to the extreme Covid-19 pandemic. The Congress was attended by IEEE Student Members from all the Student Branches of the Greece Section and Young Professionals. The Congress has started with an opening ceremony, in which greetings were addressed by the Head of the Organizing Committee, the Director of the IEEE Region 8, the Vice-Chair of the IEEE Region 8 Student Activities Committee, the Student Representative of the IEEE Region 8, and the Chair of the IEEE Greece Section Young Professionals Affinity Group. Many technical talks on different subjects in the fields of electrical and electronics engineering were conducted by distinguished professors and researchers. Furthermore, plenty of IEEE related talks and workshops were presented by representatives of IEEE Region 8 Committees. Throughout these proceedings, the social aspect of the congress was facilitated by the ample opportunity for continued networking and general socialization between the participants, through the means of an interactive environment (Spatial Chat). In the end, the conclusion of the happenings of the Congress was reached, which was marked by the holding of a closing ceremony. The next iteration of the Congress is scheduled in 2023.

On 11, 17, and 24 September online events were co-organized by the IEEE Student Branches of the National Technical University of Athens, the Aristotle University of Thessaloniki, the University of Patras, the Democritus University of Thrace, the Technical University of Crete, the International Hellenic University, the University of Ioannina, and the University of Thessaly. The Code Talks involved 2-hour long programming training preparing students for the 24-hour competition. With the help of professors and other students, the participants had the opportunity to familiarize themselves studying the solutions of old Xtreme problems and gaining experience in similar algorithmic problems.

On 15 and 19 October, the IEEE National Technical University of Athens (NTUA) Computer Society Chapter organized two training sessions in collaboration with Algoholics, a group of NTUA ECE students that are passionate about algorithms. The presenters, Charis Pipis, Vaggelis Pipis, and Miltiadis Stouras, are NTUA-ECE students who have taken part in many programming competitions and have been distinguished in previous IEEEXtreme competitions. These training sessions are not only an integral part of the preparation for the competition but also a tradition for NTUA students who want to participate. During the training, problems from past competitions are solved, illustrative solutions are discussed, and basic concepts in algorithms needed for the competition are covered.

Following the reopening of the University of Patras campus and the collaboration of the local Student Branch with several Student Branches of Greece Section in the organization of Code Talks, the IEEE University of Patras Student Branch organized a series of programming workshops exclusively for students at the University of Patras. This series of workshops marked the launch of the Competitive Programming Scientific Group events, which aim at enabling students at the University of Patras to prepare for programming competitions, by solving problems and exchanging ideas with other participants during their weekly meetings.

The IEEE National Technical University of Athens (NTUA) Student Branch and the IEEE National Technical University of Athens (NTUA) Computer Society Chapter together with the School of ECE in the National Technical University of Athens hosted the IEEEXtreme 15.0 competition, on October 23-24, 2021. In total, 49 NTUA teams participated in the competition, a record high for the competition. The competition was a huge success for the teams that represented NTUA and the School of ECE. Nationwide, the top 10 teams were all from NTUA, and 22 out of the top 25 teams were also from NTUA. The three first Greek teams ranked 17th, 79th, and 91st out of 5570 teams worldwide. All of the above teams consisted of ECE-NTUA students. Check more details here.

The IEEE University of Patras Student Branch hosted the IEEEXtreme 15.0 competition for local teams and participated actively with 10 teams, out of which, 5 accumulated points and got on the scoreboard. Moreover, the IEEE University of Patras Student Branch, respecting the COVID restrictions and prioritizing public health safety, gave the choice to the competitors to either participate remotely, as online proctoring was possible, or with physical presence. To provide the best experience to the participants, the teams gathered at the venue of the Technical Chamber of West Greece. The following teams were included in the scoreboard along with their corresponding scores: ItripleM (417.96 points), SkillzOverflowError (239.60 points), notWizards (236.70 points), PartIEEEAnimals (98.90 points), and Giagiades (61.19 points).

On Tuesday, 5 October 2021, the IEEE Student Branch of the University of Patras organized an event entitled "IEEEDAY: YOUTH, from Zero to Innovation", to celebrate the innovative spirit of young people and inspire the students at the University of Patras. The event program included the following invited talks: Smart Building, Smart Cities, and IoT by Pantelis Prousaloglou, Management Director of the company Smart Building Solutions; Award-winning projects from students at the University of Patras by Konstantinos Moustakas, professor in the ECE

department of the University of Patras. In addition, projects on Biomedical Engineering and Artificial Intelligence, successfully completed by student groups of the IEEE University of Patras Student Branch were presented.

On Friday, 15 October 2021, the IEEE Student Branch of the University of Thessaly - Lamia celebrated the IEEE Day, by organizing a day full of fun activities and events for Student Branch members, as well as students from all the departments of the School of Science in Lamia. The celebrations included a presentation of the local Student Branch delivered by the SB Chair, talks-interviews by renowned IEEE Members, a live webinar, an IEEEXtreme training workshop, a tech scavenger hunt, and delicious snacks provided by local sponsors.

On Friday 15 October 2021, the IEEE Student Branch of the Department of Informatics of the University of Western Macedonia in Kastoria celebrated the IEEE Day 2021 with a well attended event. The event started with a welcome address by the Chairperson of the Student Branch, Christos Anastasiou, who also presented the activities of the Student Branch. Furthermore, Cleopatra Gkola presented the activities of the Women in Engineering Affinity Group and Thanos Mourtzoukos talked about the benefits of the IEEE SB laboratory.

On Friday 5 November, the IEEE Student Branch University of Patras organized an event titled "Be your own Bank: E-Safety & Blockchain" which focused on the safety of online purchases, cryptocurrency, and blockchain. The event took place in the Science and Technology Museum of the University of Patras, with limited seating in accordance with COVID-19 restrictions. The program included invited talks by Dimitrios Serpanos, professor at ECE of the University of Patras, on the topic of security and privacy issues on cryptocurrency with bitcoin as the use case and Ioannis Stamatiou, professor at Business School of the University of Patras, on the topic of blockchain and cryptocurrency application.

On Friday 12 November, the IEEE National Technical University of Athens Computer Society chapter organized a workshop that aimed at learning the git tool for beginners. Participants learned what git is, how to use it, and how they can collaborate through GitHub. The workshop was presented by Christoforos Vardakis, Ioanna Sllakou, and Nikos Fryganiotis, all undergraduate NTUA-ECE students and active members of the IEEE Computer Society Chapter at the National Technical University of Athens.

On Thursday 16 December, the IEEE NTUA Student Branch made an open call event for new volunteers from NTUA. The event featured a presentation about IEEE, the mentality of an IEEE volunteer, as well as a presentation of all the chapters of the NTUA SB, including Engineering in Medicine and Biology Society, Communications Society, Computer Society, Robotics and Automation Society, and Power and Energy Society. Moreover, a presentation of the PR, FR, and Event Planning team of the NTUA SB was followed by a presentation abot the regional and global IEEE given by the Greece Section's Student Representative, Alkiviadis Michailitsis. The event was also broadcasted through WebEx and over 100 students expressed interest in joining as volunteers the NTUA SB and its chapters by filling the corresponding forms.

On 18 and 19 December 2021, the IEEE University of Thessaly - Lamia Student Branch organized for the second consecutive year the "Meet the Labs" event. The two-day conference aimed to present the research activities of the four School of Science departments in Lamia, so that students could get acquainted with the subjects of each laboratory of their department, discover their own interests, and participate in the respective research groups. The Departments of Computer Science and Biomedical Informatics, Computer Science and Telecommunications, Physics, and Mathematics of the University of Thessaly in Lamia with a total of seventeen (17) laboratories participated in the event.

Affinity Groups

On Monday 22 November at 13:00 ETT, an online webinar entitled "Towards Secure and Resilient Cyber-Physical Energy Systems" was delivered by Dr. Charalambos Konstantinou, Assistant Professor at King Abdullah University of Science and Technology (KAUST), Saudi Arabia. The webinar was organized by the IEEE Greece Young Professionals Affinity Group, the Smart Grids Research Unit (Smart-RUE) of ECE-NTUA, the IEEE Greece Section, the IEEE NTUA Student Branch, and the IEEE PES NTUA Student Chapter. The webinar highlighted how the transformation of critical grid infrastructures into cyber-physical energy systems contributes towards modernization allowing for better planning, more flexible control, and system-wide optimization.

Chapters

The IEEE Greece Section has 12 technical chapters (Power and Energy Chapter, Communications Chapter, Control Systems Chapter, Signal Processing Chapter, Computer Chapter, Consumer Electronics Chapter, Engineering in Medicine and Biology Chapter, Computational Intelligence Chapter, Electron Devices/Microwave Theory and Techniques/Antennas and Propagation Joint Chapter, Circuits and Systems/Solid-State Circuits Joint Chapter, Vehicular Technology/Aerospace and Electronic Systems Joint Chapter, Industrial Electronics/Industry Applications/Power Electronics Joint Chapter) and more than 20 technical student chapters.

Innovation for Health was a three day event held as part of the IEEE entrepreneurship week 2021 bringing together researchers, entrepreneurs, and students to debate and shape the future of research and innovation in Europe and beyond. Research and innovation will be the key to ensuring that the transition to a post-corona society is sustainable, inclusive, and resilient. This year's format provided an opportunity to connect, highlight research and innovative achievements in the field of global response to the pandemic, and build on the EU's response: worldwide coordination of excellent science for global health, social and economic recovery.

Innovation for Health was held for the first time in Greece, within the IEEE Entrepreneurship Week 2021, with the support of the IEEE Greece Section, IEEE Greece Young Professionals, IEEE EMB Greece Chapter, and IEEE Greece WIE. The contribution of the ambassadors, Chrysoula Tsimperi and Christos Roumeliotis was key to the event's success.

This event was the result of an amazing effort by young people working on different academic fields and students from different IEEE Greece Student Branches (IEEE AUTH Student Branch, IEEE University of Western Macedonia Student Branch, IEEE University of Thessaly (Lamia) Student Branch, IEEE International Hellenic University (Serres) Student Branch).

Within the framework of the event, a pitching competition was organized involving start-up companies with a global vision. Students were asked to provide different solutions to a topic related to health. Participants formed teams and were assigned a clinical need, then worked with faculty, advisors, and mentors to design a solution and build a business plan around their solution. Teams received didactic instruction, mentoring, and one-on-one advising throughout the program.

The Wei4H community is extremely honored for the privilege of organizing this event which was nominated for the best event award within the 2021 Region 8 IEEE Entrepreneurship Week.

Activities since the last report

On Wednesday 3 November, the IEEE Greece Section, in collaboration with the Laboratory of Biomedical Simulations and Imaging (BioSim) of the National Technical University of Athens, the IEEE Engineering in Medicine and Biology Society (EMBS) Greece Chapter, and the IEEE Computational Intelligence Society (CIS) Greece Chapter co-organized an online seminar titled "Beyond breast density: AI-driven breast cancer risk assessment from mammographic images.". The seminar, which was attended by 90 people, highlighted the crucial contribution of artificial intelligence and technology in the early detection and treatment of breast cancer.

A seasonal school titled "Innovation for Data Era: Power the Era of Artificial Intelligence (InnoAI)" took place in November 19-21, 2021 in Thessaloniki (https://innoai.web.auth.gr) with the financial support of the Circuits and Systems (CAS) Society. The CAS Seasonal School was organized by Professors Kostas Siozios, Dept. of Physics AUTh, Spyridon Nikolaidis, Dept. of Physics AUTh, and Alkis Hatzopoulos, ECE Dept., AUTh with the support of the IEEE Greece CAS/SSC Joint Chapter. The School included two days of invited talks and one day of a hands-on lab on Machine learning (ML) and Artificial Intelligence (AI) with Matlab. Invited speakers both from industry and academia across Europe presented and discussed with the audience recent advances in the areas of ML and AI. The School was attended by 75 people, mainly undergraduate and postgraduate students but also professionals and academics. The hybrid format of the School enabled participation from all around the world. The School was completed with a quiz based on the invited talks and a prize awarded to the participant with the highest score.