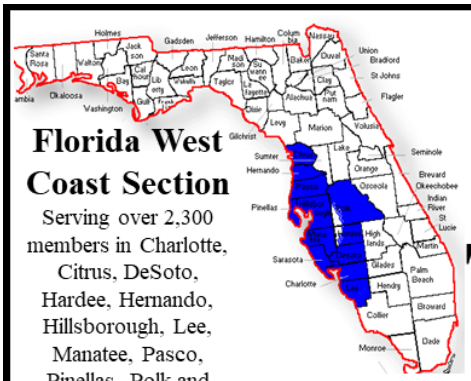
http://www.ieee.org/fwcs



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The Suncoast Signal

The Institute of Electrical and Electronic Engineers, Inc

Volume 66, No. 9, September 2020

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UPCOMING MEETINGS

EXCOM
Tuesday, September 1st, 2020
Google Meet
Register with vTools
https://events.vtools.ieee.org/m/237452

IEEE CONSULTANTS NETWORK AFFINITY GROUP OF FWCS

In an attempt to promote membership in the Consultants Network and to make it known to all as a professional organization I am publishing information, to allow everyone to become familiar with our group. The charter of the Consultants Network Affinity Group of the Florida West Coast is to support all IEEE Members who are practicing their profession as independent consultants and to provide them with ideas In the organization and management style of their businesses, the type of business they should operate under and other administrative tasks pertinent to the well being and operation of their practice.

The object of the Network shall be to foster and promote the interests of its members with respect to the business of providing professional and technical consulting services to the public; to maintain, publish and distribute a directory of the members and the consulting services offered by each; to arrange for and provide technical and management talks, tutorials, and special seminars and workshops on subjects of interest to members; and to provide a forum for personal interaction through meetings, social functions and other events. Membership in the Network is available to individuals who are interested in promoting the objects of the Network.

Memberships shall be in the names of individuals, not in the names of or as the representatives of companies or other organizations; however, the names of companies and other organizations and contacts within the same may be maintained on mailing lists and in data bases as non-members, as deemed appropriate. Members need not be members of the IEEE. Residence in or professional practice in the area served by the IEEE Florida West Coast Section shall not be a requirement for any member grade.

Continued on Page 2

THE SUNCOAST SIGNAL is published monthly by the Florida West Coast Section (FWCS) of the Institute of Electrical and Electronics Engineers, Inc. (IEEE). THE SUNCOAST SIGNAL is sent each month to members of the IEEE on Florida's West Coast. Annual subscription is included in the IEEE membership dues.

All material for THE SUNCOAST SIGNAL is due in electronic form by 1st Friday after the 1st Tuesday of the month preceding the issue month.

Address all correspondence to: Michael Mayor, 10006 Cross Creek Blvd., PMB 140, Tampa, FL 33647, michael.mayor@ieee.org (484) 524-3264

Continued from Page 1

The Consultants Network Affinity Group (CNAG) has been in existence since 18 March 2009 and during this time we have offered training, presentations, seminars and education with our monthly meetings which normally take place the last Tuesday of each month and touch on every pertinent topic. However, with the COVID19 pandemia, our activities have been disrupted and we are on a holding pattern but available for consultations through email.

If you are a Consultant, you should become a member of CNAG by login into the IEEE.org site using your credentials and subscribing to the membership there. We also have a database where all consultants can register and post your resume and expertise so others across the world can see and know what you have to offer and provide leads to your practice at https://ieee-collabratec.ieee.org/ieee-usa-consultants.

If you have any questions we are ready to assist you at the addresses below. Jim Stosic is our Vice-Chair and he is very dynamic person with leading ideas on this field. Welcome to the Consultants Network.

Hermann Amaya – hamaya@tampabay.rr.com
Jim Stosic - jstosic@geniuminc.com

Successful GPS Satellite Presentation

On Wednesday, July 29th 2020, Michael Mayor, Vice Chair of the joint Chapter AESS/CS, presented "How Do You Know Where You Are?", part of the Global Navigation Satellite Systems GNSS series, to the Florida West Coast Section of the IEEE. The presentation was made by the FWCS Joint Chapter AESS/CS.

There were over 50 member in attendance to this online virtual presentation. Michael covered how satellites maintain their position, how they communicate with the ground, and how our cell phones are able to use them in order to determine where we currently are!

Michael also took the time to talk about GPS systems that have been put up by other countries including Europe's Galileo, the USA's NAVSTAR Global Positioning System (GPS), Russia's Global'naya Navigatsionnaya Sputnikovaya Sistema (GLONASS) and China's BeiDou Navigation Satellite System. When Michael completed his presentation, there were a number of very good questions from the attentive audience.

Jim Anderson, Chair AESS/CS,
jim.anderson@ieee.org

Safe and Reliable Critical Infrastructure Cybersecurity

Date: Friday, October 16th, 2020
Time: 9:00 AM – 11:00 AM
Speaker: Rhett Smith, Development Manager for the Security Solutions Group at Schweitzer.
Location: Google Meet, Link will be provided to Registrants a day before the meeting
Registration: https://events.vtools.ieee.org/m/237553
Questions: Steve Antman 813.460.5434l, steveantman@ieee.org

Abstract:

During this session, participants will:

- Gain insights into the goals of OT cybersecurity.
- Learn how to analyze your attack surface.
- Learn the security challenges and requirement differences between IT and OT security
- Hear about next generation OT network security controls that obsolete the attackers' toolkits
- Link how a good cybersecurity program simplifies CIP compliance

Biography

Rhett Smith joined SEL in early 2006 and is a Principal Engineer in the R&D Communications Department. He has led various R&D teams and product portfolios focused on critical infrastructure networking and cybersecurity technologies and solutions. Rhett has been the principal investigator on 8 multimillion-dollar Department of Energy cooperative cybersecurity contracts. He holds 14 patents with many more pending, published over 20 papers and has been key in the design and delivery of more than 12 SEL products.

IEEE Engineering in Medicine & Biology Society (EMB, https://www.embs.org/)

EMB benefits society by advancing the knowledge of medicine, biology, healthcare and humanity's well-being through the application of engineering, data sciences and technology and promoting the biomedical engineering profession across multiple sectors to address complex global challenges. The IEEE Florida West Coast Section of the Engineering in Medicine and Biology Society is looking to offer an IEEE EMBS Virtual Speaker Series for 2020 to bring back some of the "Hot Topics" such as *Non-Invasive Glucose Biosensing for Diabetic Patients, Flying a Drone with Your Brain, Brain-Machine Interface (BMI) Innovations, Multiaxial Combination Drug Delivery for Lung Cancer* and *Biomanufacturing*. The Section will also be exploring ways to inform its members of *Bio Innovations for COVID-19 and Future Pandemics*. The FWCS of EMBS is seeking members to engage in sessions, take leadership roles, and become more active in bringing innovative ideas for engagement to the society. Watch out for Virtual Speaker Series dates in the near future!

Please contact Dr. Sylvia W. Thomas, FWCS EMBS President at sylvia@usf.edu with inquiries.

Signal Processing History and Applications I
The CT Scan – Medical and Industrial Applications

Presented by the Joint chapters AESS/CS, SP/Comm and Life Senior Members

Date: Thursday, October 29, 2020

Time: 6:00 PM – 7:30 PM

Speaker: Michael A. Mayor, MSE, PE

Location: Google Meet

Link will be provided to Registrants the day before the meting

Registration: https://events.vtools.ieee.org/m/237552

Questions: Michael Mayor; 484-524-3264 michael.mayor@ieee.org

Abstract: This is an overview of the development of the Computed Tomography (CT) Scan, formerly known as Computed Axial Tomography (CAT) Scan and two of the major applications, Medical Imaging and Industrial Applications. The CT scan is one of the many key applications of Signal Processing and it is unique because it merited one of its inventors, Sir Godfrey Hounsfield a British Electrical Engineer, the Nobel Prize in Physiology or Medicine 1979. After a brief historical introduction I will cover the basic principles of Signal Processing as Applied to Computer Imaging in Medical and Industrial Applications. Finally, I will give a brief overview of Artificial Intelligence applied to CT Scans to reduce the amount of emitted radiation.

Biography: Michael A. Mayor is a Consulting Scientist providing services in the areas of Secure Telecommunications, Precision Geolocation, Digital Instrumentation and RF Propagation Modeling and Analysis. Formerly, he was Vice President / Chief Scientist, Advanced Technology Research, in the Aerospace/ Communications Division of ITT Defense Electronics. In this capacity, he conducted Research and Directed the Development and Deployment of a wide range of Mobile Secure Wireless Communications and Emitter Geolocation Systems and their components. These included: Radio Frequency Transceivers, Software Defined and Cognitive Radio Systems, Digital Receivers and Digital Signal Processing algorithms. These activities extended to the application of Digital Instrumentation to System Test and Validation. He authored six patents in Spread Spectrum Communications and Digital Instrumentation. He received the ITT Defense & Electronics Engineered for Life Award, for his technical contributions in Communications, Geolocation and Microelectronics. He is an IEEE Life Senior Member and Vice Chair of the Joint chapter AESS/CS and a Licensed Professional Engineer (State of Virginia). He holds a Master of Science in Engineering (MSE) in Systems Engineering (Communications and Signal Processing), from the School of Engineering and Applied Science, University of Pennsylvania.

Machine Learning Overview with the Artificial Intelligence Landscape

Date: **Friday, November 13th, 2020**

Time: **9:00 AM – 11:00 AM**

Speaker: **Stephen Skrzypkowiak, PhD., P.E.**

Location: **Google Meet**
Link will be provided to Registrants the day before the meting

Registration: **https://events.vtools.ieee.org/m/237573**

Questions: **Steve Antman 813-460-5434, steveantman@ieee.org**

Abstract:

Machine Learning (ML), Deep Learning (DL), and Artificial Intelligence (AI) are the current hot topics (and buzzwords) in science and engineering and will be a big part of future technologies. This has been made possible with the reduction of hardware cost over the years and the development of scripting languages and Software Development Kits (SDKs). This presentation will concentrate on ML and its' applications. Today ML is being used for everything from threat automatic target recognition (ATR), Facebook News Feed, and to present related items on your Amazon page to purchase when you login. Billion of dollars are being invested by the US government, industry (Amazon, Microsoft, Google, Apple, etc.) and universities (CMI, MIT, Standard, etc.) to arrive at the best and most accurate algorithms, methods, and applications.

Biography:

Stephen Skrzypkowiak is a Subject Matter Expert (SME) in the areas of X-ray physics, Image and Signal Processing, and Machine Learning. Since 2002 Steve has been a domain expert lead in various capacities to the Department of Homeland Security (DHS), the Transportation Security Administration (TSA), the Transportation Security Laboratory (TSL) and various National Laboratories. He supports various US government agencies in the technical review of various threat detection systems, revising the explosive certification standards, and developing various detection and procurement specifications. He also provides technical support for various research projects including Differential Phase Contrast (DPC) Imaging. He is the Co-Chairman of the DICOS (Digital Imaging and Communications in Security) version 02A and 03 and technical member of the IEEE N42.45 Explosive Detection Standard (EDS) imaging standard. Prior to 2002, Steve was the L-3 Technologies Project Engineer for the eXaminer 3DX6000 EDS (the first 3-D imaging baggage system) that successfully passed the TSL certification operational readiness test.

Steve earned his Ph.D. in Electrical Engineer from the University of South Florida, where he also held various staff and research positions. He has published papers in the areas of Digital Signal Processing (DSP) algorithm implementation, neural networks, and video coding algorithms. He is a Senior Member of the Institute of Electrical and Electronics Engineers (IEEE), a member of the International Society for Optical Engineering (SPIE), Florida Engineering Society (FES), and a Florida Professional Engineer.

PE Corner
Art Nordlinger, PE, Senior Member
The Rule-Change Process

The Florida Statutes are the laws that have been passed by the legislature, including the practice of licensed professions. Chapter 471 of the Florida Statutes governs the practice of engineering in the state. In some areas, the Statutes are very specific, and maybe even prescriptive. For example, Section 471.017 F.S. contains the continuing education requirements for engineers' license renewal. This section specifies that the number of continuing education hours required for license renewal is 18, and the mix of those hours. The statute says (verbatim):

1. One hour must relate to this chapter and the rules adopted under this chapter.
2. One hour must relate to professional ethics.
3. Four hours must relate to the licensee's area of practice.
4. The remaining hours may relate to any topic pertinent to the practice of engineering.

It is up to the agency or board that administers each part of the law to craft detailed rules that put the law into practice. These rules constitute the Florida Administrative Code. In our case, the Florida Board of Professional Engineers (FBPE) is tasked with that responsibility. Chapter 61G15 FAC contains the rules governing the practice of engineering. In the case of continuing education, the FBPE's rules specify, among other things, who qualifies to provide this continuing education and what level of instruction the content must be to qualify, i.e. basic math courses don't qualify for continuing education hours.

The rule creation process is not done in a vacuum but rather in a public forum with input invited from any interested party. Practice of Engineering rule changes may begin in a number of ways, including as a result of a change to the Florida Statutes, or from a suggestion from an engineer or other interested party. The FBPE often assigns a committee, chaired by a Board member and including participation from interested parties and FBPE staff, to review the suggested change and come up with new rule language as a starting point. Once the committee process is completed, a rule change is proposed to the full Board. This rule is then published for comment. The process is somewhat iterative, with the FBPE proposing changes to the rules, followed by a comment period, followed by more proposed changes, etc. until consensus is reached on a final new rule which is voted on and passed by the Board.

The FBPE has recently enacted several rule changes to implement Florida Statute changes passed by the legislature in 2020. These include reducing the number of years a Professional Engineer must be licensed in another jurisdiction in order to be deemed to have passed the licensure examinations for a license by endorsement, and limitations on indemnification in Design Professional Contracts.

Whether you are a PE looking to attain required CEHs, or an engineer looking to learn something new or keep current with the latest trends in the profession, IEEE has seminars that will meet your needs. With the renewal deadline only 5 months away seminar demand is high. Sign up now!

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September 2020 Calendar of Events *(For more information see Page 1 in this Signal)*

Sun	Mon	Tue	Wed	Thu	Fri	Sat
		1	2	3	4	5
		*EXCOM Google Meet			*Signal Inputs Due	
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30			