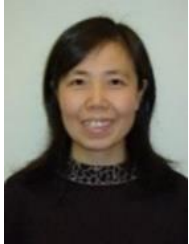




THE IEEE NORTH JERSEY SECTION NEWSLETTER

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Message from the IEEE North Jersey Section Chair Prof. Hong Zhao

As we are entering the summer months of June and July, I would like to remind you that we still have some important events on our calendar. While the pace of activities may slow down a bit during this time, our commitment to fostering professional growth and creating opportunities for connection remains steadfast. First and foremost, I would like to inform you that despite the summer season, we will continue hosting seminars, and training throughout June and July. These seminars serve as a valuable platform for sharing knowledge, exploring emerging technologies, and networking with fellow IEEE members. We encourage all of you to attend these sessions and make the most of the expertise and insights being shared.

Additionally, I am delighted to announce that we have an exciting event planned for August—the much-anticipated annual IEEE North Jersey picnic! This event has become a highlight of our calendar, providing an excellent opportunity for IEEE members, their families, and friends to come together in a relaxed and enjoyable setting. We look forward to a day filled with laughter, companionship, and the chance to create lasting memories. Please stay tuned for more details coming soon!

Wishing you all a wonderful summer filled with productivity, relaxation, and enjoyable moments!

Best wishes,

Hong Zhao, IEEE North Jersey Section Chair

IEEE – IMPORTANT EVENTS, ARTICLES, ANNOUNCEMENTS AND REMINDERS:

- [This Month's Communications Society News from Around the World](#)
- [IEEE North Jersey Section's MTT/AP Chapter – MTT-S Best Chapter Award 2023](#)
- [2-day offshore wind bootcamp training, 20-21 June 2023, NJIT:](#)
- [“Economic Value STEM Workforce” - An article by Harry Roman](#)

IEEE North Jersey Section's MTT-S/AP-S Chapter – MTT-S Best Chapter Award 2023

It is a pleasure to inform you all that the IEEE MTT-S/AP-S North Jersey Chapter, North Jersey Section, has been awarded the 2023 IEEE MTT-S Outstanding Chapter Award as decided by the IEEE MTT-S Outstanding Chapter Award Committee and approved by MTT-S AdCom.

Congratulations for this outstanding achievement and we hope that our chapter will continue to do exciting activities for the members' benefit. Our Chapter will receive the award plaque during the Chapter Chair's meeting at the EuMW conference in Berlin.

Our thanks to the IEEE MTT-S President for considering our North Jersey Chapter third time in the past 10 years for the Best Chapter award, mandating 1st place globally, and thank you North Jersey Section ExCom members and Section Chair for their help and continued support. A big shout-out to all the members, volunteers, and chapter officers working under the proactive leadership of Dr. Ajay Poddar.



2-day offshore wind bootcamp training, 20-21 June 2023, NJIT:

The New Jersey Economic Development Authority (NJEDA) and the New Jersey Institute of Technology (NJIT) are organizing a 2-day offshore wind training bootcamp (20-21 June 2023) to provide a short-term, rigorous, fast-paced, and focused fundamental training to help practicing engineers, researchers, and students to transition into offshore wind industry. There are no pre-requisite course requirements. Participants are expected to have college-level or advanced-placement level of engineering or physical sciences. The event will be open to the general public. The event aims to cover the general aspects of offshore wind farms including generation, cabling, offshore substation, grid interconnection, wind policy, and operation & maintenance. This bootcamp training will issue certificate of completion with 14 hours of PDH. If a participant passes the examination (multiple-

choice questions) at the end of the bootcamp, this course can constitute as one credit towards a graduate certificate in the offshore wind education program under planning at NJIT. The \$10 registration fee includes the parking, food, and refreshment for the two days.

Information and Registration: <https://web.njit.edu/~wp24/oswbootcamp/>

Economic Value STEM Work Force

A new and powerful study has just hit the streets, entitled, "Science is US" --an inclusive analysis of the U.S. STEM workforce and its economic impact. It was produced with support from the David and Lucile Packard Foundation (Copyright 2023). Here are the salient points of this study.

- STEM Jobs Pay More, Produce More and Contribute More than Non-STEM Jobs.
- More than 67 million workers in the United States are STEM professionals, making up 34.3% of the nation's workforce---up from 64 million workers in 2017 comprising 32.7% of the nation's workforce.
- The majority of U.S. STEM professionals, 55.4 percent, do not hold a bachelor's degree.
- Direct STEM economic activity accounted for \$9.45 trillion in 2021 equating to 40.5% of U.S. GDP. Up from \$7.66 trillion and 39.3 % of U.S. GDP in 2017.
- The Bureau of Labor Statistics predicts that by 2031 STEM employment will increase by more than twice the rate of non-STEM employment.

To keep this economic juggernaut on the rails, our country will need to make sure we engage, motivate, and inspire the next generation of STEM professionals, with a focus and investment in STEM education in PK-12 schools along with expanded opportunities for continuing education. Our position in strategic global markets will be at stake if we let this important need lapse.

Talk to you again soon...

Harry

(Harry T. Roman: Life Senior Member (htroman49@aol.com))

(Author & Advisor, Edison Innovation Foundation), (Retired-PSE&G Co.), (htroman49@aol.com)

Robotics Showcase

– A report by **Weitian Wang, Ph.D.**, Assistant Professor, Department of Computer Science, Montclair State University, **IEEE STEM Champion MSU Site, STEAM (science, technology, engineering, art & math) Fair at Bradford Elementary School, MONTCLAIR COLLABORATIVE ROBOTICS AND SMART SYSTEMS LABORATORY, (CROSS LAB)**

Our robotics showcase and hands-on projects were very successful on June 5th, 2023, at Bradford Elementary School.



Picture shows the organizing team on the left and the participants during previous robotics events on the right

CRoSS Lab is founded by Dr. Weitian Wang and located in the Department of Computer Science at Montclair State University. The theme of CRoSS Lab's research is to release robots from cages and empower human-robot interaction to be high-quality, easy-to-implement, and cost-competitive in human-centered collaborative contexts. CRoSS Lab devotes both to theoretical formulation and experimental validation with the goal of structuring a systematic research framework containing human factors, task models, and robot autonomy for human-robot interaction. CRoSS Lab's research focuses on collaborative robotics, smart systems, and their synergistic **CRoSS**-disciplinary applications in smart manufacturing, healthcare, aerospace, intelligent transportation, sustainable energy, smart agriculture, daily assistance, computing engineering, cybersecurity, data science, and interactive learning.

About this robotics event on June 5th:

1. 5 IEEE members from Montclair State University organized this event.
2. Over 60 students attended our robotics showcases.
3. Students engaged in our robotics hands-on projects to program and control the NAO robots to walk, dance, talk, and mimic animals.
4. About 15 teachers attended our robotics showcases.
5. About 10 parents attended our robotics showcases.

Picture shows my team at the event. The Elementary School will also have an official news article soon.

News from North Jersey Joint Chapter of MagSoc/Sensors/UFFC

We are excited to share the success of the 1st North Jersey Research Student Conference, organized by the North Jersey Joint Chapter of MagSoc/Sensors/UFFC.



This event on 9 December 2022 brought together a diverse group of participants, including postdoctoral researchers, PhD candidates, master's and undergraduate students, as well as high school students, all eager to showcase their research and engage in valuable discussions.

Held at the Department of Electrical and Computer Engineering of the New Jersey Institute of Technology in Newark, the conference provided an excellent platform for students and scholars to present their work and gain insights from esteemed speakers. Notable speakers included Dr. Brian Fricke from Oak Ridge National Laboratory, who delivered a compelling plenary talk, and Dr. Panayiotis Moutis from Carnegie Mellon University, who delivered an inspiring keynote address. Additionally, the conference featured insightful invited talks from Dr. Abdellatif El Mouatamid of the New Jersey Institute of Technology and Adam Kemp from the Princeton International School of Mathematics and Science.

The conference focused on a wide range of research areas, such as energy, power, sensors, machine learning, smart cities, computing, and future research needs and directions. Presenters seized the opportunity to showcase their innovative research projects and share their latest findings. This platform allowed students to not only present their work but also engage in discussions, exploring the potential and challenges in their respective fields. The conference fostered an environment conducive to collaboration, encouraging scholars to connect and establish valuable partnerships. During the event, exceptional presenters were recognized for their outstanding contributions. Best presentation awards and certificates of merit were bestowed upon these individuals, acknowledging their remarkable achievements in their respective fields of research.

We eagerly look forward to future editions of this conference, as it continues to contribute to the advancement of research and academic excellence in our region.

Event website: <https://web.njit.edu/~sa2564/studentconf.html>

“IEEE Electron Device Society and Circuit and Systems Society One-Day Summer Camp for Female High School Students: SHE in ECE”



IEEE EDS/CASS sponsored “One-Day Summer Camp for Female High School Students” to join engineering especially in electrical engineering and computer engineering.

SHE@IEEE is Soaring High-powered Excellence in Electrical and Computer Engineering (ECE): SHE in ECE. The participants will be high school students entering 9th to 12th grades in the IEEE North Jersey Section and the surrounding community.

You do not have to be an IEEE member, but prior registration is encouraged to attend any event. [IEEE North Jersey Section Website](#) [The Section Executive Committee Roster](#)

Participants will:

- Learn about various IEEE activities.
- Students will meet current and present female undergraduate and graduate students in ECE program.
- The student will visit the ECE Research laboratories related to robotics, electronics, and communication/network research.
- Female faculty members will address the students describing their career growth.
- Students will be addressed by female industry leaders in ECE disciplines with ECE degrees.
- Former female ECE students who are working in Industry will address
- Students will discover the current trends and the future Electron Device technology by interacting with the female guest speakers.
- ECE Program advisors will also present the academic activities and requirements.
- Students will carry out a few hands-on activities that will include circuits boards and

Participants are encouraged to [Register Here](#)

Calendar of Events

Upcoming Events: The month of June 2023 Onwards

Title	Date	Hosts	Location
STEAM (science, technology, engineering, art & math) Fair at Bradford Elementary School : Montclair State Univ	05 Jun 2023 09:00 AM	STB21201 - Montclair State Univ, R10327 - North Jersey Section, CH01092 - North Jersey Section Jt Chapter, AP03/MTT17, SIGHT177 - North Jersey Section SIGHT	Montclair, New Jersey
Understanding Quantum Computing: North Jersey Section Jt Chapter, AP03/MTT17	06 Jun 2023 12:00 PM	CH01092 - North Jersey Section Jt Chapter, AP03/MTT17, CH01178 - North Jersey Section Chapter, PHO36	Virtual
Voltage controlled oscillator (VCO) verification: North Jersey Section Jt Chapter, AP03/MTT17	07 Jun 2023 01:00 PM	CH01092 - North Jersey Section Jt Chapter, AP03/MTT17, CH01178 - North Jersey Section Chapter, PHO36, SIGHT177 - North Jersey Section SIGHT	Virtual
IEEE North Jersey Section EXCOM - Meeting 6:30 PM: North Jersey Section	07 Jun 2023 06:30 PM	R10327 - North Jersey Section	Virtual

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Distributed beamforming aided wireless energy transfer: North Jersey Section Jt Chapter, AP03/MTT17	12 Jun 2023 06:00 PM	CH01092 - North Jersey Section Jt Chapter, AP03/MTT17, CH01184 - North Jersey Section Jt Chapter, CAS04/ED15, CH01153 - North Jersey Section Chapter, VT06, CH01178 - North Jersey Section Chapter, PHO36, SIGHT177 - North Jersey Section SIGHT, CH01095 - North Jersey Section Chapter, CS23, SIGHT056 - AP-S SIGHT	Newark, New Jersey
Human System Engineering: From Human Views to Human Readiness Levels: North Jersey Section Chapter, SYS45	13 Jun 2023 12:00 AM	CH01294 - North Jersey Section Chapter, SYS45	Virtual
Towards 6G: The role of photonics in THz communications: North Jersey Section Jt Chapter, AP03/MTT17	15 Jun 2023 01:00 PM	CH01092 - North Jersey Section Jt Chapter, AP03/MTT17, CH01178 - North Jersey Section Chapter, PHO36, CH01184 - North Jersey Section Jt Chapter, CAS04/ED15, SIGHT177 - North Jersey Section SIGHT	Virtual
New Jersey Offshore Wind Bootcamp Training: North Jersey Section Chapter, MAG33/UFFC20/SEN39	20 Jun 2023 09:00 AM	CH01290 - North Jersey Section Chapter, MAG33/UFFC20/SEN39	Newark, New Jersey
Careers at the Rapidly Shifting Human-Technology Frontier By Dr. Fahmida N. Choudhary: North Jersey Section Chapter, SIT30	21 Jun 2023 06:45 PM	CH01285 - North Jersey Section Chapter, SIT30	Virtual
One-Day Summer Camp for Female High School Students: SHE in ECE: North Jersey Section Jt Chapter, CAS04/ED15	27 Jun 2023 08:00 AM	CH01184 - North Jersey Section Jt Chapter, CAS04/ED15, R10327 - North Jersey Section, SIGHT177 - North Jersey Section SIGHT, CH01092 - North Jersey Section Jt Chapter, AP03/MTT17, WE10327 - North Jersey Section Affinity Group, WIE, CH01178 - North Jersey Section Chapter, PHO36	Newark, New Jersey
Seminar: Commercialization of Hard Tech: Bringing Innovation from Lab to Market: North Jersey Section Chapter, MAG33/UFFC20/SEN39	28 Jun 2023 03:00 PM	CH01290 - North Jersey Section Chapter, MAG33/UFFC20/SEN39	Newark, New Jersey

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Understanding Quantum Computing: North Jersey Section Jt Chapter, AP03/MTT17	11 Jul 2023 12:00 PM	CH01092 - North Jersey Section Jt Chapter, AP03/MTT17, CH01178 - North Jersey Section Chapter, PHO36	Virtual
37th ANNUAL SYMPOSIUM AND MINI-SHOW: North Jersey Section Jt Chapter, AP03/MTT17	04 Oct 2023 09:00 AM	CH01092 - North Jersey Section Jt Chapter, AP03/MTT17	E. Hanover, New Jersey

Past Month's Events: The month of May 2023

Title	Date	Hosts	Location
Face Video Compression with Generative Models: North Jersey Section Chapter, SP01	03 May 2023 12:00 PM	CH01091 - North Jersey Section Chapter, SP01, CH01177 - North Jersey Section Chapter, C16, CH01092 - North Jersey Section Jt Chapter, AP03/MTT17	Virtual
2023 IEEE North Jersey AI Workshop of Undergraduate and Graduate Students (IEEE NJ-AIW-UGS-2023): North Jersey Section	06 May 2023 09:00 AM	R10327 - North Jersey Section, CH01081 - North Jersey Section, EMB18, CH01092 - North Jersey Section Jt Chapter, AP03/MTT17, CH01178 - North Jersey Section Chapter, PHO36, CH01153 - North Jersey Section Chapter, VT06	Hoboken, New Jersey
Introduction To Machine Learning : North Jersey Section Chapter, COM 19	06 May 2023 01:30 PM	CH01156 - North Jersey Section Chapter, COM 19, R10327 - North Jersey Section	Teaneck, New Jersey
2023 IEEE North Jersey Section Awards Banquet: North Jersey Section	07 May 2023 03:00 PM	R10327 - North Jersey Section	Whippany, New Jersey
Tailoring Electromagnetic Waves from RF to the IR: Theory and Applications: North Jersey Section Jt Chapter, AP03/MTT17	09 May 2023 12:00 PM	CH01092 - North Jersey Section Jt Chapter, AP03/MTT17, CH01178 - North Jersey Section Chapter, PHO36	Virtual
Ensuring NB-IoT Device NTN Performance: North Jersey Section Jt Chapter, AP03/MTT17	09 May 2023 01:00 PM	CH01092 - North Jersey Section Jt Chapter, AP03/MTT17, CH01178 - North Jersey Section Chapter, PHO36, CH01184 - North Jersey Section Jt Chapter, CAS04/ED15, SIGHT177 - North Jersey Section SIGHT, CH01153 - North Jersey Section Chapter, VT06	Virtual

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Grid Optimization: Private LTE Provides the Optimal Foundation for Utilities: North Jersey Section Chapter, PE31	12 May 2023 09:00 AM	CH01097 - North Jersey Section Chapter, PE31, CH01092 - North Jersey Section Jt Chapter, AP03/MTT17	South Plainfield, New Jersey
Terahertz-chip-scale Systems for Intelligent Sensing and 6G Communication webinar: North Jersey Section	17 May 2023 11:00 AM	R10327 - North Jersey Section	Virtual
Wireless Device Testing Fundamentals: North Jersey Section Jt Chapter, AP03/MTT17	17 May 2023 02:00 PM	CH01092 - North Jersey Section Jt Chapter, AP03/MTT17, CH01178 - North Jersey Section Chapter, PHO36, CH01184 - North Jersey Section Jt Chapter, CAS04/ED15	Virtual
Manipulando Ondas Electromagnéticas: Fundamentos Teóricos y Aplicaciones Prácticas: North Jersey Section Jt Chapter, AP03/MTT17	23 May 2023 12:00 PM	CH01092 - North Jersey Section Jt Chapter, AP03/MTT17, CH01178 - North Jersey Section Chapter, PHO36	Virtual
De-embedding test fixtures for high-speed digital applications: North Jersey Section Jt Chapter, AP03/MTT17	24 May 2023 02:00 PM	CH01092 - North Jersey Section Jt Chapter, AP03/MTT17, CH01178 - North Jersey Section Chapter, PHO36, CH01184 - North Jersey Section Jt Chapter, CAS04/ED15	Virtual
Understanding Coexistence testing: How RF receivers reacts to Interference signals: North Jersey Section Jt Chapter, AP03/MTT17	31 May 2023 02:00 PM	CH01092 - North Jersey Section Jt Chapter, AP03/MTT17, CH01178 - North Jersey Section Chapter, PHO36, CH01184 - North Jersey Section Jt Chapter, CAS04/ED15	Virtual

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GRADUATE SCHOOL VIRTUAL OPEN HOUSE!

Wednesday, June 14, 2023, 5 p.m.

Fairleigh Dickinson University

Gildart Haase School of Computer Sciences & Engineering (GHSCSE)

Cybersecurity Leadership: "National Center of Academic Excellence for Cyber Defense Education (CAE-CDE)" by NSA

18 cutting-edge labs, among the best in the North and Mid-Atlantic Regions

Offers 6 Masters of Science (MS) Programs

<p>*Cybersecurity & Information Assurance</p> <p>*Electrical Engineering</p> <p>*E-Commerce</p>	<p>*Management Information Systems</p> <p>*Computer Engineering</p> <p>*Computer Science (Data Science, Cloud Computing and more)</p>
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Scan Zoom Registration



Scan Grad Program Info







GRADUATE SCHOOL VIRTUAL OPEN HOUSE!

Wednesday, July 19, 2023, 5 p.m.

Fairleigh Dickinson University

Gildart Haase School of Computer Sciences & Engineering (GHSCSE)

Cybersecurity Leadership: "National Center of Academic Excellence for Cyber Defense Education (CAE-CDE)" by NSA

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