Valid criticism does you a favor –

Carl Sagan (1934 – 1996)

Astronomer
Principal officers of the
IEEE New York Section
2018

Chair: David K Horn
Vice Chair, Chapter operations: Robert M Pellegrino
Vice Chair, Section Activities: Wilson M Milian
Treasurer: Thomas Villani
Secretary: Amy Batalones

EDITOR NY MONITOR: DR. AMITAVA DUTTA-ROY
Currently, the New York Section of IEEE comprises of the following

**Active Chapters of the IEEE Societies:**

- Broadcast Technology Society
- Computational Intelligence Society
- Computer Society
- Communications Society
- Technology Management Society
- Engineering in Medicine and Biology Society
- Instrumentation and Measurement Society
- Power and Energy Society
- Industrial Applications Society
- Solid State Circuits/Electron Devices Societies
- Systems, Man and Cybernetics Society
- Vehicular Technology Society

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**The following Affinity Groups as defined by IEEE**

- Consultants’ Network
- Life Members
- Women in Engineering
- Young Professionals
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The following are the presumed dates for the 2017 Executive Committee meetings at IEEE NY Section (unless otherwise notified in advance, always held on the second Wednesday of the month):

- 10 January
- 14 February
- 14 March
- 11 April

No meeting in May due to Award Dinner Dance (5 May)

- 13 June

No meetings during the months of July and August

- 12 September
- 10 October
- 14 November
- 12 December

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Unless otherwise notified, all ExComm meetings are scheduled for 12:30 pm at the ConEd Building, 4 Irving Place, New York. All members of the New York Section are invited to participate in the ExComm meetings.

However, for reasons of security controlled by ConEd, the owner of the venue, all members desirous of attending any ExComm meeting must notify the Section chair. Thank you for your understanding.
Recently, I had the privilege of attending the seventh four-day International Conference on Cyber Security (ICCS 2018) cosponsored by primarily by Federal Bureau of Investigation (FBI) and Fordham University of New York and realized at the university’s Lincoln Center Campus from 8 through 11 January. The ICCS is held in New York once roughly every 18 months. Reportedly, it is a rare event in which FBI itself plays an active role and members of the legal and IT professions, academics, security experts and even lay public are encouraged to attend. Some prominent cyber security provider firms support the conference by designating representative speakers to share their knowledge. Some promoted it by providing edibles and potables to the attendees. During the networking receptions offered at the conference I met security specialists from many distant places: Prague (Czechoslovakia), Accra (Ghana), Kingston (Jamaica), Quezon City (Philippines) and Aruba (Dutch Caribbean). Most of them work for their governments and they came all the way to New York to be informed of the broad policies on cyber security that are presently being discussed and adopted here and all around the world. Though IEEE was not a sponsor, the conference was of such importance (click here for messages from the conference leadership and the program committee) that we felt it was our obligation to keep our members informed about the advancement of a strategic technology. Some of its highlights follow.
The ICCS opened with four one-hour tutorials on cyber security. The first three of them let a lay person get a glimpse into the rarefied hush-hush world of security.

Mr. Ashim Kapur of Stroz Friedberg, a NYC-based cyber security firm was the first to offer his tutorial—workshop for explaining the basics of digital forensics, a term so far used only in serious reporting on cyber crimes. Most of us (at least I) had no idea that every stroke on the on the keyboard and every click with the mouse may be registered in the HDD of the computer that could be retrieved later for a systematic forensic examination. Kapur simulated some of the common crimes cyber miscreants commit and showed step by step how they are analyzed. The crimes could include hacking, phishing (for information such as user’s id), theft of entire files on intellectual property, burglary of information on national defense or disseminating fake news that could shatter political stability of a nation. My take: digital forensic is not a simple video game. It needs painstaking patience to identify the criminals, their origins and the extent of the crimes.

Dr Marina L Gavrilova, professor and director, Biometric Technologies Laboratory, Department of Computer Science, University of Calgary, Alberta was the speaker for the second tutorial. She began by tracing the history of biometry back to late nineteenth century. She cited “Life on the Mississippi,” a novel by Mark Twain (1835 – 1910) in which a murderer was identified by his fingerprints, an early application of biometrics. The British anthropologist and statistician Sir Francis Galton (1822-1911) applied statistical methods to find correlation between external appearance and measureable mental faculties. Alphonse Bertillon (1853-1914) was a French police officer and researcher in biometrics who created a system of identification based on biometrics. They were all pioneers of the field of biometrics as we know today.

Dr Gavrilova classified biometrics into two groups: one physiological and the other behavioral. Identification of an individual by analysis of face, fingerprint, hand geometry, ear, iris, DNA, hand veins, teeth, and retina belongs to the first group. The second group comprises of techniques that recognize an individual’s unique gait, gesture, mouse dynamics, voice, signature, and keystrokes. She continued with her tutorial explaining more about biometric security applications, digital storage required for those applications, ease of access and success rates. My take: the science of biometrics is advancing at a rapid pace and soon we may be able to rid ourselves of common forgeries and hacking. Since biometrics relies on statistics and efficient infrastructure of databases, the overall progress will depend on the progresses of those sciences. The scale of applications will also be one of the deciding factors. Consider, for example, the banks in Brazil. There the biometrics (palm) operated ATMs have been in use for more than one year. I would imagine that it will take much longer here because the number of users is higher by many orders of magnitude.
Alex Griessel of Brooklyn, NY-based ConsenSys is a specialist in bitcoin and his tutorial was a well organized beginner’s 101 tutorial. I liked his approach to the presentation that was mixed with fun as if spiced with a touch of comedy. He started his a narrative on the evolution of money and then continued with the fundamentals of the crypto currency, and finally ventured into the newly created realm of Ethereum. His company ConsenSys is one of the largest firm dealing in bitcoins the website of which contains tons of information on crypto currency.

THE CONFERENCE

The main conference was opened on Tuesday, 9 January with a short welcome by Bill Baker, President Emeritus of PBS Channel Thirteen/WNET and now the occupant of the Claudio Acquaviva chair and Journalist in Residence at Fordham. (Remember his appearances on the TV screen?). Baker was followed by Father Joseph M McShane, SJ, President, Fordham University. In his welcoming speech the president, witty and full of humor made everybody at ease though the heavier stuff of the conference was yet to hit us later.

The most important keynote speaker at the conference was Christopher Wray, the current FBI Director who, appeared to me, to be a humble person with a clear view of his mission. You would expect those qualities from the director who could assure us of the country’s safety.

The program committee invited many speakers, some hold important positions in the government, some retired (high-ranking ) military personnel, lawyers, IT professionals, at least one former ambassador, a number of academics of repute.

The topics addressed varied widely, from “Disinformation, Manipulation and the New Age of Warfare” by Jared Cohen, to “Identifying Social Network Users from their Online Behavior” by Dr Marina Gavrilova and “The Web PKI (public key infrastructure) and Malpractice” by Dr. Bruce Maggs, Professor at Duke University, NC and VP for Research at Akamai Technologies, Durham, NC. I gained some insight into some of the security threats, strategies and risks in our efforts to eliminate them.

I look forward to attending next year’s ICCS. I’ll be better prepared to take in more information.

*Acknowledgment: I could attend the ICCS only because of the efforts of Dr. D. Frank Hsu, Clavius Distinguished Professor at the Department of Computer and Information Science at Fordham and the chair of the Computational Society’s NY Chapter. Hsu has been a member of the ICCS program committee since it was realized for the first time.

Thank you, Dr. Hsu, your present and former students, and the conference staff at Fordham.
A MESSAGE FROM THE CONFERENCE (ICCS 2018) LEADERSHIP

Dear ICCS Participants:

Welcome to the 2018 International Conference on Cyber Security (ICCS)—a joint effort of the Federal Bureau of Investigation and Fordham University. We are delighted to welcome you to Fordham’s Lincoln Center campus for our seventh annual conference, including so many of you who have participated in past years.

Anyone with even a passing interest in cybersecurity will know that the events of the past two years have highlighted the importance of policing cyberspace—not merely in support of commerce and communications, but to safeguard the institutions of government at the highest level.

ICCS has taken its place among the most prominent conferences on cybersecurity in the United States because its mix of experts from industry, academia, and law enforcement ensures a 360-degree view of cybersecurity and the challenges presented to law enforcement and national infrastructure. As in past years, ICCS features multiple talks, panel discussions, and exhibits, offering cutting edge information on cybersecurity.

Christopher A. Wray, director of the FBI, John O. Brennan, former director of the Central Intelligence Agency, Scott Smith, assistant director of the FBI, Cyber Division and Rob Joyce, Special Assistant to the President and Cybersecurity Coordinator will be the keynote speakers at this year’s conference. Our other speakers and attendees are likewise prominent experts in law enforcement, academia, and industry. We think you will find their insights into the challenges of, and solutions for, ensuring the security of the global cyber infrastructure to be timely and far-reaching.

Finally, we are pleased that you have agreed to take part in ICCS 2018. Please treat Fordham—and New York City—as your home-away-from-home during the conference, and enjoy the opportunity to connect with old colleagues, and make new connections at this singular conference.

Sincerely yours,

William F. Sweeney Jr.
Assistant Director in Charge
Federal Bureau of Investigation
New York Office

Joseph M. McShane, S.J.
President
Fordham University
A MESSAGE FROM THE PROGRAM COMMITTEE

Dear ICCS 2018 Participants:

Insider threats. Blockchain and distributed ledger technology. The Mirai IoT botnet. Censored planet. Critical infrastructures. These are just a few of the challenges that will be addressed at the seventh International Conference on Cyber Security (ICCS 2018). The conference provides a forum for researchers, practitioners, and leaders to improve the detection, mitigation, and prevention of emerging cyberthreats, including cyberattacks and cyber exploitations.

At ICCS 2018, you will be able to network and forge global alliances with your peers in government, academia, and industry from all over the world. In addition, you will be able to contribute your valuable knowledge on diverse issues toward a secure cyber-physical-social ecosystem in the areas of technology innovation, operation capability, and real-life applications. The ICCS 2018 program includes more than 50 distinguished speakers and panelists who will share their insights and experiences on cybersecurity in various plenary and parallel sessions, including tutorials and workshops. Through these interactions and discussions, we hope that you will be able to increase your knowledge on cybersecurity strategies and solutions in making decisions and taking actions in your work and life.

On behalf of the ICCS 2018 program committee, we would like to thank Joseph M. McShane, S.J., President of Fordham University, and William F. Sweeney Jr., Assistant Director in Charge, Federal Bureau of Investigation, New York Office, for their leadership and guidance. We are also grateful to the members of the advisory committee for their support and help. We appreciate the effort and energy of the organizing committee members in making ICCS 2018 a successful reality.

We trust that you will enjoy the conference and your stay in New York.

Aristedes Mahairas  
Special Agent in Charge  
Cyber/Special Operations Division  
Federal Bureau of Investigation  
New York, NY

Richard T. Jacobs  
Assistant Special Agent in Charge  
Cyber Branch  
Federal Bureau of Investigation  
New York, NY

D. Frank Hsu, Ph.D.  
Clavus Distinguished Professor of Science  
Department of Computer and Information Science  
Fordham University  
New York, NY

Dorothy A. Marinucci  
Associate Vice President for Presidential Operations  
Office of the President  
Fordham University  
New York, NY
## The Tutorials

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<th>Ashim Kapur</th>
<th>Dr Marina Gavrilova</th>
<th>Alex Griessel</th>
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| The Evolution of Money | Enter Ethereum! | Cody Brown, Amy Batallones, Alex Griessel, Marina Gavrilova, Ashim Kapur and Frank Hsu |

## Keynote speakers

| Bill Baker | Father Joseph M McShane, SJ | Christopher A Wray |
The fundamental philosophy behind the Future City competition, now a national event, is to encourage young students to imagine a city of the future that would meet their requirements of an ideal city. The competition is first organized for the schools in several regions and then the regional winning teams compete in a national competition in Washington, DC. The NY Section of IEEE supports the competition in the New York region by providing some funds and our members act as judges. Thus, we have been following the completion for several years and written about its history. You can read our past reports at https://goo.gl/pYtVjo (p. 10) and https://goo.gl/sJ3ptL (p. 11).

The theme for this year’s competition was “The Age-friendly City” for motivating students to study the lifestyle and behavior pattern of senior population of their idealized city. Then they identify the requirement of that population and offer solutions that would help the seniors to maintain an active and healthy lifestyle. In 2018, some 40,000 middle school students from 1,350 schools in 41 US regions, as well as teams from Canada, China, and the Middle East, are expected to take part in the competition. The finals of the competition will take place on Tuesday, 20 February, 2018. The prizes are the following:

- **First Place** – $7,500 for the team’s STEM program and a trip to U.S. Space Camp in Huntsville, AL. Sponsored by Bentley Systems, Inc.
- **Second Place** – $5,000 for the team’s STEM program. Sponsored by the National Society of Professional Engineers
- **Third Place** – $2,000 for the team’s STEM program. Sponsored by IEEE-USA.
- **Honorable Mentions** – Teams coming in 4th and 5th places respectively will receive $750 each for their STEM programs. Sponsored by Ohio University and NCEES.
According to the press release on the competition, “this year marks the third consecutive year Future City has received a prestigious national award for being a leading engineering education program. In October, Future City was recognized by US2020 and co-founding sponsors, Chevron and Tata Consultancy Services, for the program’s achievements and innovations in STEM education and its accessibility to underrepresented youth.

“The 26th NYC Regional Future City STEM Competition took place on Saturday 20 January at PS 126. Thirty one of the 55 participating student teams from Middle Schools throughout NYC completed all of their project deliverables and presented their vision of an age friendly city 150 years into the future. The winning team included students Aileen Colon, Sophia Vinasco, Amalia Dayle, Annnette Salas, Amber Springer and their teacher Mr. Philip Hubbard from Columbia Secondary School. The will be presenting their city, “Cosmopolis,” at Future City Finals in Washington D.C.”

Of special interest to the IEEE is award for the "Best Communications System." This prize was won by "IS318 – the students of Eugenio Maria DeHostos" school of New York City. They named their Future City "Optiplex".

Cosmopolis conceptualized by Columbia Secondary School

Members of the winning team at Columbia and their teacher
David Horn, chair of the IEEE NY Section acted as a judge at the Future City competition.

Horn judging another team.

Winner of the Best Communications System.

*We thank Alyssa Tognatti of Sayles Winikoff Communications for providing the press releases and the two photographs of the 2018 winning team.
Distinguished Lecture on
Visual Clustering Applications
in Big Data

New York Chapter of IEEE Systems, Man and Cybernetics Society
IEEE NY Section Education Committee
February 23, 2018 Friday, 6:30-8:30 PM at LIU-Brooklyn, Room: HS 119

Every picture tells a story:
Visual Cluster Assessment in Square and Rectangular Relational Data

Dr. James C. Bezdek
Life fellow of the IEEE

The VAT/iVAT algorithms are the parents of a large family of visual assessment models. Part 1 covers
background of cluster analysis and history of visual clustering applications. Part 2 covers extension to
iVAT, scalable iVAT for big data. Application: image segmentation, gene expression data. Part 3 covers
five easy pieces: xVAT: non-symmetric data. Application: Social Networks (Monastery data), impVAT:
missing data. Application: Social Networks (Karate club data). chVAT: big data. Applications:
clustering in big (synthetic) data, MIT video trajectories, inciVAT: streaming data. Application: anomaly
detection in Heron Island data and LOFiVAT: immunization of iVAT and single linkage to infer
contamination. Application: Grand St. Bernard weather station.

Keywords: Cluster analysis, visual assessment models, visual clustering applications, clustering in
big data.

Distinguished Lecturer: Dr. James C. Bezdek received his Ph.D. degree in Applied Mathematics from
Jim was past president of NAIPS (North American Fuzzy Information Processing Society), IFSA
(International Fuzzy Systems Association) and the IEEE CIS (Computational Intelligence Society). Founding editor the International Journal of Approximate
Reasoning and the IEEE Transactions on Fuzzy Systems.

Location/Directions: http://www.liu.edu/Brooklyn/About/Visit-Directions.aspx
Refreshments: Refreshments will be offered at 6:00 PM, presentation starts at 6:30 PM.
Event Agenda: 6:00 - 6:30PM: Refreshments, 6:30 - 8:00PM: Presentation,
8:00 - 8:30PM: Q/A.
RSVP – Please send RSVP to pitchung@ieee.org by February 22. ALL ARE INVITED.
SAVE International Metro New York Chapter Joint Meeting with the IEEE New York Section/Consultants’ Network

Dinner Meeting / Presentation on

Value Engineering: Understanding the Design-Build Process

By Liam Dalton

at

HNTB Corporation
Empire State Building
350 Fifth Avenue, 57th Floor
[enter from 33rd street to avoid tourist crowd]
NY, NY 10118

Monday, February 26, 2018 at 6 PM

This presentation will discuss the elements of the Design-Build process and give us a better understanding about the challenges and best practices for:

• Advantages of Design-Build over the traditional Design-Bid-Build
• Fundamentals of Design-Build
• The Design-Build contracting process

Liam has over 30 years of construction management experience working on many of New York’s biggest construction projects including the renovation of Metro North Railroad’s Grand Central Station, reconstruction of Times Square Subway Station, infrastructure upgrades to the New Yankee Stadium complex and associated waterfront development including the demolition of the old Yankee Stadium. Previously, Liam was the project manager for the new Second Avenue Subway line which entered service on January 1st 2017. In addition to Liam’s construction management skills, he has worked with several New York City contractors over the last 4 years in leading design-build for New York City Transit’s Clifton Rail Shop, New York City Transit’s Enhanced Station Initiative, Route 17 Woodbury Commons design-build project, Bruckner Bridge re-decking, Mid-Suffolk electric train yard and the rehabilitation of the Harlem River lift bridge.

RSVP by 2/19/2018

All welcome; bring a colleague or friend! RSVP required by email below by 2/19/2019
Attendance Cost: $10 (No charge for students presenting a valid student ID.)

Babu Veeregowda, PE, PTOE, AVS
Metro NY SAVE Chapter President
Phone: 212.915.9568
Bvveeregowda@hntb.com

Marty Izrae
IEEE Consultants’ Network Chair: NY Section
Phone: 646.284.6348;
M.Izrae@ieee.org
You are invited to a meeting of the PES & IAS NY Chapter and the NY L MAG on

Electromagnetic Pulse (EMP) Hardened Mobile Control Center

Tuesday, February 27, 2018

THE PRESENTATION:

Con Edison has awarded a contract to ESP to design, build and deliver a Mobile Energy Control Center that is shielded against a high intensity Electromagnetic Pulse. The presentation will include an introduction to the physics of a nuclear EMP pulse and its potential effects on electrical and electronic equipment. It will cover the basics of designing an EMP shielded system and go into some detail about the specific design considerations and decisions that apply to the Con Edison Mobile Control Center, how communications are handled, how the system will be tested, the concept of operations and logistics issues.

THE SPEAKER: Manuel Pimenta, Senior Engineer, Consolidated Edison Company of New York

Manuel Pimenta joined Con Edison in 2012 as a Senior Engineer working with Electrical Control and Automation Systems. He has over twenty years of experience with SCADA systems having worked as a Project Engineer, Senior Applications Engineer and Applications Engineering Manager for a SCADA systems manufacturer in NJ. He worked for eight years in the defense industry, as a Test Systems Engineer and Engineering Team Leader where he was primarily involved in designing automated test equipment for advanced military radar systems. He was part of the EPRI IEC 61850 Test Bed project and a participant in EPRI’s Transmission and Substation Area Task Force. Manny has a BS in Electrical Engineering from NJIT and Masters in Computer Science from Stevens Institute of Technology.

ALL ARE INVITED – PLEASE POST

RSVP: https://meeting.vtools.ieee.org/p/t/160560
Chair Program: Arnold Wong
wongar@coned.com or (212) 450-4189
Chair Technical Committee: Subnum Alampur
subnum100@hotmail.com or (917) 522-2844

FOR SECURITY REASONS: NO WALK-INS!

WHERE: Con Edison
Edison Room
4 Irving Place, New York, NY 10003
Nearest Subway: 14 St/Union Sq

This program will be awarded IEEE Continuing Education Units.

THE INSTITUTE OF ELECTRICAL AND ELECTRONICS ENGINEERS, INC.

IEEE
The IEEE Region 1 Student Conference (StuCon) is the premier annual event where all student branches from the eight states of IEEE Region 1 (Northeastern US) meet to discuss mutual challenges and compete in regional competitions.

The conference objective is to encourage lively student engagement and provide opportunities for students to network and learn from other students from across Region 1, while applying practical engineering knowledge in the various competitions. StuCon also provides a great opportunity for student members to network with Industry Professionals and IEEE Leaders.

**Conference Highlights:**
- Undergraduate Student Paper Contest
- Regional MicroMouse Competition
- Student Ethics Competition
- Fri-Sat Hackathon
- MicroMouse Workshop for Newbies and Pros
- Sunday Drones Workshop
- Awards Ceremony and Dinner
- Networking Opportunities
- Meet IEEE Leaders and Industry Professionals

To submit a paper for the Undergraduate Student Paper Contest or to register for other Competitions, follow the directions on the conference Hotel and Conference Registration Page at:

[https://meetings.vtools.ieee.org/m/49675](https://meetings.vtools.ieee.org/m/49675)

**Hotel Registration Deadline:** March 7, 2018

**Conference Registration Deadline:** March 15, 2018

**About the Hotel Accommodations:**

Hilton Garden Inn Rosslyn (3 Harbor Park Drive, Port Washington, New York 11050)

Hotel accommodations will be provided (via a rooming list – do NOT book directly with the hotel) on a first come first serve basis for those traveling more than 100 miles each way. Teams will be required to share a room (4 students per room). Hotel accommodations will not be provided for local participants but meals will be provided during the conference. Those non-students wanting a room should contact Dr. Rubenstein at s.rubenstein@ieee.org to obtain one in our room block at $140/night, taxes included.

The 2018 Region Drones Workshop is proudly sponsored by the IEEE Foundation and hosted by the New York Institute of Technology – Westbury LI Campus

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**THE END**