

PUBLICATION OF THE NORTH JERSEY SECTION OF THE INSTITUTE OF ELECTRICAL AND ELECTRONICS ENGINEERS

NJ Communications Society:

ECN and the TCP Paradigm

On February 13, 2002, the IEEE North Jersey Section Communications Society Chapter along with NJIT will host a presentation on "ECN and the TCP Paradigm." The speaker will be Dr. Teunis J. Ott.

About the Talk

In TCP, packet loss is used by the source of a TCP flow to gauge congestion and to adapt the congestion window to the level of congestion in the network. In RED, this mechanism is used by routers to signal, by preemptively dropping packets, congestion to the sources.

ECN (Explicit Congestion Notification, see RFC 3168, Floyd and Ramakrishnan, September 2001) replaces "dropping" with "marking" as the signaling The mechanism. most obvious advantage is that marked packets do not need to be re-transmitted. advantages are that the marking rate can be arbitrarily large, and thus the amount of information "signaled" can be much

This allows for jointly designing new router and source behaviors.

The most likely payoff of such a joint design is to make it possible for "best effort" type traffic to efficiently utilize the bandwidth left unused by higher priority (say VoIP, Video) traffic.

A mathematical model that illustrates the kind of investigation required will be presented, and simulation results show that even with a fairly naive approach it is possible to improve QoS to low priority traffic, without doing damage to higher priority traffic.

Preparatory reading can be found in http://web.njit.edu/~ott/Papers/index.html: Square Root Law, ECN, and Milcom2001.

About the Speaker

Teunis J. Ott is a Professor in the Department of Computer Science at NJIT. Before joining NJIT he was, for 23 years, a researcher in computer networking and computer performance at Bell Laboratories, Bellcore, and Telcordia.

Dr. Ott studied mathematics at the University of Amsterdam and Operations Research at the University of Rochester. He probably is currently best known for his work on the Square Root Law for TCP.

All Welcome!

You do not have to be a member of the IEEE to attend. Bring your friends.

Time: 2:30 PM (refreshments start at 2:15 PM), Wednesday, February 13, 2002.

Place: New Jersey Institute of Technology (NJIT), Room 202, ECE Center, Newark, NJ. Directions are available at www.njit.edu.

Information: Dr. Nirwan Ansari (973) 596-3670 (nirwan.ansari@njit.edu) or check http://www-ec.njit.edu/~ieeenj for the latest updates.

NJ PES/IAS:

Electric Motor Seminar

The PES and IAS Chapters will present a technical seminar on the fundamentals of electric motor selection, application and maintenance.

Additional details and registration procedures and fees will appear in the March Newsletter.

Time: 9:00 AM – 3:00 PM, Friday, April 26, 2002.

Place: Longo Industries, Wharton, NJ. **Information:** Ken Oexle at (973) 386-1156.

Newly Elected IEEE Fellows

The North Jersey Section IEEE congratulates the following members who were elected to the Fellow grade:

Mihai Banu

"For contributions to the art of fully integrated continuous-time analog-filter design."

Sankar Basu

"For contributions to theory and application of multidimensional circuits, systems, and signal processing."

Robert M. Goldberg, ITT Industries

"For contributions to military test and measurement equipment."

James David Johnston, AT&T Labs - Research

"For contributions in perceptual audio coding and its standardization."

Jelena Kovacevic, Bell Labs/Lucent Technologies

"For contributions to the theory of signal representation."

Krishnaswamy Nagaraj, Texas Instruments

"For contributions to the design of CMOS data converters."

Ulrich Lothar Rohde, Synergy Microwave Corp.

"For contributions to and leadership in the development and industrial implementation of microwave computeraided design technology."

Richard Dale Schlichting, AT&T Labs - Research

"For contributions to fault-tolerant computing and distributed systems."

Juergen Schroeter, AT&T Labs – Research

"For contributions to text-to-speech synthesis technology."

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Deadline for receipt of material is the 1st of the month preceding the month of publication. All communications concerning editorial and business matters, including advertising, should be sent to the Business Manager via e-mail at *k.saracinello* @ieee.org or to *The IEEE Newsletter, c/o Keith Saracinello, 25 Messenger Ln, Ringoes, NJ 08551,* (908) 791-4067.

IEEE NJ SECTION HOME PAGE

http://www-ec.njit.edu/~ieeenj/ IEEE NJ SECTION NEWSLETTER HOME PAGE http://www-ec.njit.edu/~ieeenj/ NEWSLETTER.html

REPORT ADDRESS CHANGES TO:

IEEE Service Center, 445 Hoes Lane, P.O. Box 1331, Piscataway, NJ 08855-1331, (732) 981-0060. It is not necessary to inform the North Jersey Section when you change your mailing address. "The IEEE Newsletter" and other section mailings use a list provided by IEEE's national headquarters.

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The North Jersey Section Executive Committee usually meets the first Wednesday (except holidays and December) of each month at 7:00 PM. Meetings are open to all members. For information on meeting agenda contact Secretary Wayne Owens at (201) 767-3400, ext. 226, wowens @crestron.com.

NJ Consultants' Network:

Selling the Value of Consultants

On Thursday evening, February 28th, 2002, the IEEE Consultants' Network of Northern NJ (CNNNJ) will sponsor a short seminar entitled, "Selling the Value of Consultants." The seminar will be conducted by the owners of Special Graphics, a creative marketing agency located in Rockland County.

About the Meeting

"Selling the Value of Consultants" is a presentation on marketing, advertising and the creative process that gives us an opportunity to look at ourselves through the eyes of our prospects.

Partners Deborah Mesibov and Richard Feldman will discuss what goes into communicating and selling the value of consultants, including:

- Marketing precepts
- ☐ The marketing, advertising and creative processes
- A brief case study, based on the Rockland Business Association Consultants Council

About the Speaker

Ms. Mesibov and Mr. Feldman started Special Graphics in the fall of 1982. The agency is known for its work in direct mail, consumer product packaging, trade show display, and publicity. Ms. Mesibov is the Creative Director of Special Graphics and is a 1975 graduate of the School of Visual Arts in New York City. She currently conducts corporate training graphic design classes in Adobe Photoshop, Illustrator and Quark Express. With 20 years of experience in direct mail. database management, print and display development, Mr. Feldman directs the development of new business for the firm. He is a published copywriter, providing the foundation of publicity for the agency and its clients.

The agency is an award winning member of the Ad Club of Westchester, a member of the NJ Commerce & Industry Association, the Rockland Business Association, the RBA Consultants Council, and the Eastern Perishable Products Association. Additional information can be found by visiting the agency's website at www.specialgraphics.com.

About the Consultants' Network

The IEEE Consultants' Network of Northern NJ was founded in 1992 to encourage and promote the use of independent technical consultants by business and industry.

All Welcome!

You do not have to be a member of the IEEE or of the Consultants' Network to attend. Networking after the meeting is encouraged. There is no charge for admission.

Time: 7:30 PM, Thursday, February 28, 2002.

Place: MCE/KDI Integrated Products, 60 S. Jefferson Road, Whippany, NJ. (Use the rear entrance)

Information: For directions and up-to-date meeting status, call Robert Walker (973) 728-0344 or visit our website at www.TechnologyOnTap.org.

Spring 2002 Student Presentation Contest Call for Abstracts

The new spring-02 student presentation contest is coming up! The North Jersey Section will be holding a presentation contest scheduled for late-February or early-March of 2002. This year's host will be New Jersey Institute of Technology.

If you missed last month's newsletter article, you can check out the details on the web at the URL located at the bottom. The exact date and time have not been set but the registration process has begun.

You can find there the local section rules, guidelines and how you will be judged on the presentation. More importantly, follow the link to the registration and abstract submission page and submit your presentation topic today!

Any and all questions can be emailed to the contest organizer, a.j.patel@ieee.org and check out the website:

http://ewh.ieee.org/r1/north_jersey/sac



E-Week 2002 Kits Now Available

National Engineers Week 2002 is 17-23 February and now is the time to request your free E-Week kit from IEEE-USA or the E-Week Website.

The kit features information on the exciting new E-Week program, ZOOM Into Engineering. Based on ZOOM, the popular PBS series, ZOOM Into Engineering pairs fun activities for 6-12 year olds with opportunities to interact with engineers.

The kit also includes "50 Ways You Can Participate" in E-Week, a planning calendar, talking points, E-Week poster, tips for working with students and a product catalog and order form.

To request your kit, contact Rita Hamilton at 202-785-0017, ext. 8354 or r.m.hamilton@ieee.org. You can also get one by visiting https://shop.eweek.org/eweek/ and clicking "Promotional Materials."

IEEE North Jersey Section Activities February 2002

- **Feb. 1**—Application Deadline for 27th Annual Trenton Computer Festival Call for Speakers. See http://www.tcf-nj.org/spkr reg.shtml for details.
- **Feb. 6**—"NJ Section Executive Committee Meeting" 7:00 PM, ITT, 100 Kingsland Rd, Clifton, NJ. Wayne Owens at (201) 767-3400 ext. 226 or wowens@crestron.com.
- **Feb. 13–Apr. 24 -** "Introduction to JAVA Programming" North Jersey Section, Wednesday Evenings, 10 sessions, 6:30-9:00 PM, BAE Systems (formerly GEC-Marconi), 164 Totowa Road, Wayne, NJ. Bhanu Chivakula at b.chivakula@computer.org.
- **Feb. 19**—"ECN and the TCP Paradigm" NJ Communications Chapter, 2:30 PM, NJIT, 202 ECE Center, Newark, NJ. Nirwan Ansari (973) 596-3670 (nirwan.ansari@njit.edu). Please check http://www-ec.njit.edu/~ieeenj for the latest updates.
- **Feb. 28**—"Selling the Value of Consultants" NJ Consultants' Network, 7:30 PM, MCE/KDI Integrated Products, 60 S. Jefferson Road, Whippany, NJ. Robert Walker (973) 728-0344 or www.TechnologyOnTap.org.

Upcoming Meetings

- Mar. 5–Apr. 9 "Object-Oriented Programming" North Jersey Section, Tuesday and Thursday Evenings, 10 sessions, 6:30-9:00 PM, BAE Systems (formerly GEC-Marconi), 164 Totowa Road, Wayne, NJ. Bhanu Chivakula at b.chivakula@computer.org.
- **Mar. 6**—"NJ Section Executive Committee Meeting" 7:00 PM, ITT, 100 Kingsland Rd, Clifton, NJ. Wayne Owens at (201) 767-3400 ext. 226 or wowens@crestron.com.
- **Mar. 22**–"Electromagnetic Compatibility Seminar: Principles and Applications" NJ IAS/PES Chapters, 9:00 AM to 3:00 PM, location TBA. R. Vittal Rebbapragada, PE, (609) 720-3209 or r.rebbapragada@ieee.org.
- **Apr. 26**-"Electric Motor Seminar" NJ IAS/PES Chapters, 9:00 AM to 3:00 PM, Longo Industries, Wharton, NJ. Additional details, registration procedures and fees will appear in the March Newsletter. For additional information contact Ken Oexle at (973) 386-1156
- **Apr. 26 & 27-** "The 11th Annual Wireless and Optical Communications Conference", 8:00 AM Registration, 9:00 AM Opening Remarks, Marriott Hotel, Newark Airport, Newark, NJ. Details can be found on http://www.wocc.org.
- **Apr. 28**–"NJ Section Awards Reception" 3:00 to 6:00 PM at the Birchwood Manor, 111 North Jefferson Rd, Whippany, NJ. Anne Giedlinski (973) 377-3175.
- **May 4 & 5**—"27th Annual Trenton Computer Festival", 10:00AM. See http://www.tcf-nj.org for details.

Members and Non-Members Welcome PLEASE POST

NJ PES/IAS:

Electromagnetic Compatibility: Principles and Applications

The IEEE North Jersey Chapters of IAS/PES will host a one day Seminar on "Electromagnetic Compatibility: Principles and Applications" on Friday March 22, 2002 in the vicinity of Morristown, NJ.

About the Seminar

The seminar will be conducted from 9:00 AM to 3:00 PM, with breaks for lunch and coffee. The seminar will cover the following topics:

- Introduction to EMI environment
- Sources of conducted and radiated EMI
- Standards governing the EMI Design Guidelines and Test Practices
- EMI Measurements, Control Requirements, and Test Methods
- EMI Issues from Variable Speed Drive Applications
- Harmonics and its Role in EMI
- Mitigation Techniques: Shielding, Bonding and Grounding

The seminar is designed for engineers, contractors, and consultants that are involved with selection, application, and installation of micro-processor based control and protection systems, distributed control systems, power electronic devices such as variable speed drives in industrial, residential, commercial, and electric utility installation such as generating stations and substations.

This seminar will be conducted by Mr. R. V. Rebbapragada, PE who has industry recognized experience with over 25 years of experience in the area of Electro Magnetic Compatibility. The registration fee for this seminar prior to March 15th will be \$175 (non-IEEE members), \$125 (IEEE Members), and \$50 (students with valid ID). Registrations after March 15th must include an additional late fee of \$25. The seminar fee includes lunch, refreshments and handouts. Non-members joining IEEE within 30 days of the seminar will be rebated 50% of the IEEE registration charge.

	Friday, March 22, 2002. ne March 2002 Newsletter Anno apragada, PE, (609) 720-3209	
Registration: Electromagi	netic Compatibility Seminar -	Principles & Applications, 3/22/2002
Register via US mail to: K. Oexle 11 Deerfield Rd Whippany, NJ 07981 Name		
Address		
	Email	
	Student @	

Make Check payable to North Jersey Section IEEE

Payment Enclosed \$ Add \$25 late registration after March15th

IEEE AWARDS RECEPTION

North Jersey Section April 28, 2002 Birchwood Manor, Whippany NJ

A time to relax, unwind and enjoy --A time to pay tribute to our new Fellows --A time to honor our Award Winners --YES it's time for the Annual Section Reception

The Annual Section IEEE Awards Reception will be held at the Birchwood Manor, 111 North Jefferson Road, Whippany again this year. The affair is scheduled for **Sunday, April 28, 2002** from 3 to 6 PM. Tickets are \$35.00 each and include a complete prepaid, two-hour open bar, hors d'oevres, buffet, and dessert. Spouses and guests are welcome. We are limited to <u>90</u> attendees, so please make your reservations early.

payment. If you woul envelope. Otherwise, required concerning th	d like tickets mailed back to you, please enclose a self-addressed stamped your tickets will be held at the door for you. If any additional information is e reception, contact Anne Giedlinski at (973) 377-3175.
	ption reservations. ENCLOSE A SELF-ADDRESSED STAMPED ENVELOPE advance. Reservations are required by April 22, 2002. Mail reservation
	Anne Giedlinski 299 Brooklake Road Florham Park, NJ 07932
Enclosed is Section IEEE) for:	for ticket(s) at \$35.00 each (make check payable to North Jersey
NAME:	
ADDRESS:	

WOCC2002 Call For Presentations

The Eleventh Wireless and Optical Communications Conference

26-27 April, 2002, Newark Airport Marriott Hotel, Newark, New Jersey, USA

Conference Chair

Charles Kao, former Vice Chancellor, Chinese University of Hong Kong

Conference Organizers

James Hwang, Lehigh Univ. Chung-Sheng Li, IBM

Technical Program Chairs

T.C. Chiang, Lucent Cedric F. Lam, AT&T Shih-Ping Liou, Siemens

Conference Coordinator

Hsuan-Jung Su, Lucent Heather Yu, Panasonic

Advisors

Gee-Kung Chang, Telcordia
Terry Cheng, Lucent
Russell Hsing, Telcordia
Chih-Lin I, AT&T
Hai-feng Li, Tycom
Sing Lin
Michael Wang, AT&T
On-Ching Yue (Chair), Lucent
Kang Yueh

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- ♦ The Chinese Institute of Engineers - USA (CIE-USA)
- ◆ The Photonics Society of Chinese Americans (PSC)
- ◆ The Chinese Association of Science and Technology (CAST)
- ◆ The Chinese American Academic and Professional Society (CAAPS)
- ◆ The Monte Jade Science and Technology Association (MJSTA)
- ♦ IEEE North Jersey Section

For the last 10 years, WOCC has enjoyed great success in providing a unique opportunity for telecommunication professionals to exchange ideas and to extend their business networks. It offers a forum to discuss both business and technical topics in the telecom industry, especially business opportunities between the USA and Asia/Pacific. The theme of WOCC2002 is "Riding the Next Wave: Technologies Leading to and Substantiating Telecommunication Industry Recovery." Until about two years ago, the telecommunication industry had been enjoying tremendous growth. The demand for bandwidth seemed insatiable and opportunities seemed endless. Then came the economic downturn and the burst of the Internet bubble, which had setback the industry including many wireless, optical and multimedia companies.

Nonetheless, the current situation in the telecom industry presents us with both challenges and opportunities. We believe the industry will recover and businesses that survive this turmoil will eventually flourish. This conference examines the technologies and business drivers that will lead the recovery of the telecommunication industry. Abstracts of presentation are solicited in areas of multimedia, wireless and optical communications. Presentations can be made in one of the following (but not exclusive) forms:

- reports of new technological and scientific findings and results
- reviews, tutorials and technology surveys
- field trial and new technology deployment results
- economic studies and analysis
- business proposals and presentations

Submission Deadline: 15 January, 2002

Authors will be notified by **March 1, 2002** about the acceptance of their presentation.

Format: Include both abstract and bio of speaker on one page, 8.5"x11", 1" margin, font size>10. Also, title of talk, name affiliation, and e-mail address.

Send Microsoft Word file to:

tchiang@lucent.com cflam@ieee.org Shih-Ping.Liou@scr.siemens.com

Please refer to: http://www.wocc.org/ for details of page formatting and other information about WOCC2002.

IEEE North Jersey Section Course INTRODUCTION TO JAVA PROGRAMMING

Wednesday Evenings, February 13, 2002 through April 24, 2002 (No class on March 27) *Ten weekly classes (February 13, 20, 27, March 6, 13, 20, April 3, 10, 17, 24, 2002)* BAE Systems (Formerly GEC-Marconi), 164 Totowa Road, Wayne, NJ (Checks should not be mailed to this address)

The North Jersey Section IEEE is offering an evening course entitled "Introduction to Java Programming." Java Programming has gained enormous popularity in corporate Information System applications as well as in advanced Webpage Design since 1996. About 2.5 million Java Programmers are currently working on all types of commercial projects in the world, ranging from cell phone applets, to UNIX server, to mainframe data-warehouse access.

Since Java is similar to C++, it is an easier transition for C++ Programmers. This course, however, will be for anyone even he/she never took a programming course. The instructor will provide the necessary software (compiler and editor) for everyone to get started immediately from ground zero!

Instructor: Donald Hsu, has been a corporate manager for 11 years and is an experienced trainer. Since 1997, he trained 150+ people in Java Programming and Advanced Java Programming courses in five organizations.

TOPICS

- Explain the dynamic growth in Java Programming 1.
- Contrast the importance of AWT, CGI, JavaScript and HTML
- Classify the different types of Java applets vs Java applications 3.
- Identify the control structures, arrays and classes
- 5. Construct character strings and graphics tools
- Define multithreading, files and streams
- Draw multimedia, animation and Swing images 7.
- 8. Build audio files, JavaBeans and networking applications
- Distinguish Java utilities, error handling, serialization and reflection
- Analyze real-world projects using SDK 1.3 development tools

Class size will be limited to a maximum of 25 with a minimum of 15. Early registration is recommended. Phone reservations will NOT be accepted. Reservations accepted after February 1, 2002 will require a late fee of \$25. No reservations will be accepted after February 6, 2002.

WHERE: BAE Systems (Formerly GEC-Marconi), 164 Totowa Road, Wayne, NJ. (Checks should not be mailed to this address)

10 Sessions, Wednesdays, February 13, 20, 27, March 6, 13, 20, April 3, 10, 17, 24, 2002, 6:30-9:00 PM. WHEN:

With textbook or notes: IEEE (& affiliate) members \$300; Non-IEEE members \$400. COST:

Bhanu Chivakula - email b.chivakula@computer.org CONTACT:

REGISTRATION: Introduction to Java Programming

Please send checks with registration form to Bhanu Chivakula, 19 Prestwick Way, Edison, NJ 08820 and direct inquiries via email to B.Chivakula@computer.org with sender's address and postmarking the envelope "Java Programming". (Checks payable to "North Jersey Section IEEE" with registration form should be mailed to this address)

	ণ্≖email address ঐ
Member of	technical society
Home telephone #:	

effective date of the application corresponds to the date when BOTH a fully completed application/registration and payment are received.

•		
	Tuition receipt will be mailed only if this box is checked	Signature:

IEEE North Jersey Section Course OBJECT-ORIENTED PROGRAMMING

Tuesdays and Thursdays (bi-weekly) on March 5,7,12,14,19,26,28,April 2,4 and 9 BAE Systems (Formerly GEC-Marconi), 164 Totowa Road, Wayne, NJ (Checks should not be mailed to this address)

ABSTRACT

The Object-Oriented concept is almost universally used today in new design and programming work. Instead of focusing on functionality (what the programs do) it focuses on the natural objects comprising the problem and how they, and their capabilities, are modeled in the program.

This object-oriented programming course will emphasize C++, because it is the richest language, but will also cover corresponding capabilities in Java and C#. The course will begin with the concept of objects and then extend inward to the contents of objects, and outward to groupings of objects that constitutes solutions to practical problems.

AUDIENCE

Programmers who want to learn to understand and program, primarily in C++, but also in Java or C#. Knowledge of procedural ('old-style') programming is not necessary to take the course, but, because object-oriented programming is not elementary, a familiarity with such foundation programming concepts will be very helpful.

COURSE TOPICS

- Object-Orientation: Objects and classes of objects; declaration and instantiation; how to represent objects. Methods & attributes, constructors and destructors. Concept of interobject communication by messages. Encapsulation & abstraction. Keywords.
- Attribute representation: Data naming, typing and scoping. Declaration & instantiation. Intrinsic data types: int, float, char, bool, etc. Extended data types: strings, structures, arrays, defined data types. Constants and parameters. Casting. Namespaces.
- Method representation: Function naming and overloading. Arguments and returns. Statements and statement grouping. Declaration & instantiation. Operators. Static.
- Conditional and repetition operators; Subfunctions.
- Mechanics of program creation: Compilers, emulators, jit. Formatting, layout, debugging, testing, asserts. Documentation and comments. O-O design, UML, development tools.
- Input and Output: Streams: Standard I/O, formatted I/O with manipulators, File and device I/O.
- Interaction of Objects: Inheritance: base, abstract, virtual, derived classes. Overloading, interfaces, polymorphism. Dynamic and static objects, garbage collection;
- Interfaces and multiple inheritance. Properties. this, friend, new. Pointers, references, handles.
- Extending Object capabilities: operator overloading, inter-type conversions, object I/O. Containers and iterators. Interface classes. Libraries and templates.
- Special topics: Real life applications, embedded programs, real-time programs.
- Introduction to O-O Windows programs. Interaction, widgets, mouse, resources and properties.

Class size will be limited to a maximum of 25 with a minimum of 15. Early registration is recommended. Phone reservations will NOT be accepted. Reservations accepted after February 19, 2002 will require a late fee of \$25. No reservations will be accepted after February 26, 2002.

WHERE: BAE Systems (Formerly GEC-Marconi), 164 Totowa Road, Wayne, NJ. (Checks should not be mailed to this address)

WHEN: 10 Sessions, Tuesdays and Thursdays on March 5, 7, 12, 14, 19, 26, 28, April 2, 4 and 9; Time: 6:30-9:00 PM

COST: With textbook or notes: IEEE (& affiliate) members \$300; Non-IEEE members \$400.

CONTACT: Bhanu Chivakula - email b.chivakula@computer.org

REGISTRATION: Object Oriented Programming

Please send checks with registration form to Bhanu Chivakula, 19 Prestwick Way, Edison, NJ 08820 and direct inquiries via email to B.Chivakula@computer.org. Please superscribe the letter "Object Oriented Programming" and include return address. (Checks payable to "North Jersey Section IEEE" with registration form should be mailed to this address.)

Name: / Mr. / Mrs. / Miss / Ms. / Non-member IEEE Member Member #:	Member of	૧ વિ. તે email address છે technical society
Employer:		
Employer Address:		
Home Address:		
Business (day) telephone #:	Home telephone #	; :
Please enclose required fee payable to: North Je Registration status will be mailed after February effective date of the application corresponds to t	y 26, 2002. Phone inquiries concerning regis	

Tuition receipt will be mailed only if this box is checked Signature: