



VIRGINIA MOUNTAIN SECTION NEWSLETTER

IEEE Region 3, Council 09, Section 65

January 2001

Meeting: Thursday, January 18

Nancy Vorona – CIT

The Electronics Industry in Virginia - Poised for the Future -

Abstract

Much has happened since November '99 when Ms. Vorona addressed the Virginia Mountain Section. You are invited to be a part of the Virginia electronics industry's vision: *"To be a globally recognized leader in the electronics industry with an infrastructure that supports growth and continuously improves the quality of life in the Commonwealth."* This vision is the cornerstone for the strategic plan developed in 1999 for Virginia's electronics industry.

Successes of the year 2000, plans for 2001, opportunities and impediments to growth, as well as a vision for the industry in 2003 will be discussed. The audience will be invited to discuss and participate in industry initiatives.

About the Speaker

As Virginia's Center for Innovation Technology's (CIT) Senior Industry Director for Advanced Materials and Electronics, Ms. Vorona is responsible for strengthening each of these industries in Virginia. Working with industry to identify and solve critical issues facing these sectors is fundamental to her responsibilities.

Ms. Vorona's professional experience in electronics includes several years in marketing and sales management with International Rectified Corporation, a U.S. manufacturer of power semiconductors based in California. Ms. Vorona was also responsible for international marketing and sales for Integrated Display Technology Ltd., a Hong Kong manufacturer of consumer electronic products. In 1993, she joined the Virginia Economic Development Partnership to increase the international business of Virginia's information technology and telecommunications

companies. Ms. Vorona joined CIT in 1998.

Ms. Vorona received a bachelor of arts in romance languages from the University of North Carolina at Chapel Hill and a master of international management from Thunderbird, The American Graduate School of International Management, in Glendale, Arizona.

Reservations

Date: Thursday January 18, 2001

Social: 6:30 PM
Dinner: 7:00 PM
Talk: 8:00 PM
Cost: Member or Guest \$12.00
Student \$ 7.00

Clarion Hotel Roanoke Airport

2727 Ferndale Drive NW
1581 Exit 3 Hershberger Rd West
1st Rt. onto Ferncliff Ave.,
2nd Rt. onto Ferndale Drive.

Reserve by **5 PM Monday** Jan. 15

Call **Dave Kingma 552-3011 x304**
or e-mail: **dkingma@ieee.org**
Leave a message stating who will be attending.

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VMS Activities

MEETING REPORT NOVEMBER 16, 2000

The third meeting of the 2000-2001 season was held at the Clarion Hotel Roanoke Airport with twenty-nine in attendance. Dr. David L. Livingston, associate professor of electrical engineering at Virginia Military Institute, spoke after dinner on the subject of computational intelligence. Computational intelligence studies the use of certain models, such as neural networks, fuzzy logic, and evolutionary algorithms, to analyze and synthesize machine intelligence. The models provide a process for intelligence to "emerge" based on learning, competition and evolutionary based searches. Dave's presentation was especially interesting because he linked the theory of each model with the people involved with the history of development and the potential applications.

Artificial neural network research started in the early 1940's based on biological nervous systems. Networks of simple processing units are highly interconnected in large numbers and provided with learning mechanisms. Such an approach is well suited to solving problems in scheduling and systems layout/packaging which involve constraint satisfaction and optimization. Other applications are in machine intelligence for expert systems, robotics, rule derivation, function approximation, and pattern recognition. Fuzzy logic deals with uncertainty by solving problems in a manner similar to the way humans interface with their environments and each other. Fuzzy logic research started in the 1960's and expanded in the 1980's and 1990's. Developments have been given impetus by practical applications in areas such as fuzzy controllers for subway and plant control as well as camcorder image stabilization and camera shutter speed. Fuzzy logic is also useful for pattern recognition as in blood-pressure monitors, medical diagnosis, and earthquake prediction.

Evolutionary computing solves problems based on the Darwinian theory of natural

Newsletter Delivery

New Options

Beginning sometime this month, the VMS Newsletter will be delivered to members in one of three formats:

- Surface Mail
- e-mail, document included as text
- e-mail, notification only, with link to PDF version on the Web Site.

This in itself is not new. What will be new is the ability to sign on for the type of delivery you prefer and receive only that type – EXCEPT for emergency announcements. Everyone will be notified of last minute meeting changes, etc.

Four lists for distributing information will be maintained. Three corresponding to the Newsletter options above, one for articles and announcements of interest from IEEE or other relevant sources (we promise to not inundate you with another stream of "stuff to read". Narrow-band filters will be applied.) In addition, an open, comment and discussion list, to which all members may submit material is being set up. It is hoped this will stimulate comments and exchanges of ideas for and about the Section.

All members with valid e-mail addresses on file at IEEE will receive details and sign-up instructions as soon as they are available. Others will have to wait for the February issue or visit our Web Site.

...*editor*

selection where, in a large population, there is competition for survival of the fittest and the fitness function represents the function to be optimized. The technique was suggested in the 1950's and is well suited for high speed digital processing. Applications where the fitness function can result in system optimization through competition include production scheduling, circuit design, physical design, auto-processing, and artificial life software examples.

Looking ahead, applications of computational intelligence will expand as processing speed, algorithms, and

architecture all improve. Future trends will see an integration of artificial neural network, fuzzy logic, and evolutionary computing to better solve demanding problems.

Dave's presentation stimulated an extensive audience discussion following the talk. Dave Kingma presented Dr. Livingston with a certificate of appreciation to close the evening.

...*Howard J. Moses*
Secretary/Treasurer

ELECTION RESULTS FOR 2001 OFFICERS

Forty-seven ballots were received from those voting in the election of officers for calendar year 2001. The Nominating Committee proposed a slate including Section Officers, Executive Committee At Large, and Society Chapter Officers.

Section Officer results are summarized below:

Chairman	
Dave Kingma	46 votes
Vice-Chairman	
Howard Moses	47 votes
Secretary-Treasurer	
Mark Shepard	45 votes

The four nominees who received the highest vote total for the Executive Committee Members At Large positions are:

David Livingston	44 votes
Ira Jacobs	39 votes
Shawn Addington	34 votes
John Fennick	30 votes

Section Chapter Officers were sought for four Chair positions. Results were:

Industrial Electronics	
David Geer	26 votes
Microwave Theory and Techniques/Electron Device	
Dain Miller	25 votes
Industry Applications*	
No Candidate	
Mark Shepard	Write-in
Steven T. Critchfield	Write-in
Power Engineering*	
No Candidate	

Jaime De La Ree

Write-in

* Write-in candidates are being asked if they will serve. The potential tie for the IA Chair will be resolved by the Executive Committee.

Thanks to all who voted and to those who volunteered themselves as candidates. We look forward to an interesting and successful 2001!

...Howard J. Moses, Secretary/Treasurer

Computer/Control/Industrial Electronics Chapter



Proceedings of the 2000 IEEE
Conference on Control Applications
Anchorage, AK Sept 25-27, 2000

I have a copy of these proceedings on CDROM. Some papers of possible interest to local members are:

"Auto-Tuning of Motor Drive Systems by Simple Adaptive Control Approach", by authors from Keio University and Fuji Electric Corporation;

"Modeling for Control of a Steckel Hot Rolling Mill", by Schultz, Craig, and Pistorius from University of Pretoria, South Africa

The conference had 37 two-hour sessions over three days. With six papers per session, there is plenty of reading here for long winter nights. The CD requires Adobe Acrobat Reader, which is included. It is compatible with Windows 95 and later, Macintosh and UNIX systems.

To borrow the CD please contact me at (540) 387-7359 or d.geer@ieee.org

...Dave Geer, Chapter Chair

PAST CHAIR'S COMMENTS

I want to thank all members of the Virginia Mountain Section for their support over the 18 months during which I have been chair. The success of the Section is not the result of the efforts of

one person but depends on the efforts of all. I particularly appreciate the efforts of the Executive Committee in planning the activities of the Section. If they have not provided what you, the members, have wanted then you must tell them what you do want.

Next year Dave Kingma will be leading the Section and I know you all will give him the same great support you have given me. I look forward to another successful year!

Dan Jackson, Chair
d.jackson@ieee.org

TRAINING SESSION

All You Wanted To Know About The IEEE and More

On Saturday, January 27, 2001, the Virginia Council is sponsoring a training session at the Innsbrook Technical Center of Dominion (Virginia) Power, Richmond, VA, from 10:00 am until 4:00 PM. The Tech Center is in west Richmond, about three hours drive from Roanoke. Dan Jackson will be the presenter. Put this date on your calendar now.

This session is for all interested members of IEEE but particularly active volunteers. Section officers including members-at-large of the executive committee, Chapter Chairs, and Committee Chairs are expected to attend if they have not attended a Region 3 training workshop previously. This particularly includes newly elected individuals. All other members as well who wish to learn more about the IEEE are encouraged to attend.

The objective of this training session is to familiarize officers and interested volunteers with the organizational structure of the IEEE including the Institute, Region, Area/Council, and Section. Also, we will review resources available to officers and other volunteers from the Institute, the Region, and the Areas/Councils. We aim the presentation especially toward Section officers as this is the critical point for local IEEE activities. (We do not teach basic management skills.)

There is no charge for the training session but there may be a small charge, \$5 to \$10, for lunch. Copies of the Training Manual will be provided by Region 3. For directions to the Dominion Power Innsbrook Technical Center see the Training Session web page: <http://www.ewh.org/r3/vc/Agenda/Trainin.g.html> and click on Directions to the Innsbrook Training Center toward the bottom of the page. If you think you might attend please contact Dan Jackson, Member, Region 3 Leadership Development Committee,

d.jackson@ieee.org,
phone: 540-774-0484.

Name Your Topic

Not interested in the VMS meetings?
Topics have no appeal?
Speakers are dull?

Now make your own suggestions for topics/speakers/location or any other facet of our meetings. Go to

<http://>

www.ewh.ieee.org/r3/virginia-mountain/
Click on

Recommend a Meeting Topic
and tell us. Please supply any and all information you may have, especially concerning speakers and availability. We will do our best to accommodate your wishes.

...editor

HELP US HELP YOU

To enable IEEE staff to provide us with the most accurate lists, labels and member contact information, up-to-date information must be provided by you. Please, any and all members who have changed address, email or phone number, send a note to:

address-changes@ieee.org

...editor

2000-2001 MEETING SCHEDULE

DATE	SPEAKER/TOPIC	MEETING PLACE
September 21 Spouses' Night	Kenneth R. Laker 1999 IEEE Past President 21st Century IEEE The Exemplary Global Engineering Society	Clarion Hotel Roanoke
October 19	James C. Squire Department of Electrical Engineering, VMI Engineering in Clinical Research: A Case Study	Clarion Hotel Roanoke
November 16	David L. Livingston Department of Electrical Engineering, VMI An Introductory Overview of Computational Intelligence	Clarion Hotel Roanoke
January 18	Nancy A. Vorona Virginia Center for Innovative Technology The Electronics Industry in Virginia- Poised for the Future	Clarion Hotel Roanoke
February 15	Dennis G. Fisher Carilion Biomedical Institute Overview of the Institute Activities	Clarion Hotel Roanoke
March 15 *	Steven Edwards Computer Science Department, VT Java Update *	Clarion Hotel Roanoke
April 19	Student Project Night	TBD
May 17	Plant Tour	TBD

* A Web Site "Name Your Topic" Request

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Power Engineering
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IEEE Web:

<http://services1.ieee.org/membersvc/coa/intro.htm>
 (Changes are forwarded to the Newsletter)

Visit the VMS WEB page:

www.ewh.ieee.org/r3/virginia-mountain

Section/Chapter meeting notices, and reports. Past issues of the Newsletter, PACE Patter, etc. Articles, organizations, and activities affecting our profession.

Suggest Meeting Topics and Speakers.

Sign on to our mailing lists.

Links to IEEE, etc.

Contributions welcomed - make them on-line.

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