

KITCHENER-WATERLOO SECTION

January 2003

Coming events

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CALL FOR PAPERS

2003 CANADIAN WORKSHOP ON INFORMATION THEORY WILL BE HELD IN WATERLOO MAY 18 – 21

The Workshop will be held at the University of Waterloo, and is sponsored by the Canadian Society for Information Theory, the Information Theory Chapter of the KW IEEE Section, the KW IEEE Section and others.

Submissions should consist of a 500 word summary, **deadline 7 January 2003**. Include authors' names, mailing address, phone and fax numbers and e-mail address. Accepted submissions to be followed up by a 4 page paper, **deadline 24 March 2003**.

Submissions in MS Word or Postscript are preferred. Send to:

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For further information see <http://multicom.uwaterloo.ca/cwit2003/>

IEEE NEURAL NETWORKS SOCIETY WELCOMES NEW MEMBERS

The IEEE Neural Networks Society (NNS) is one of 37 societies under the IEEE umbrella. The NNS was formed in 2002 and is now able to accept new members. For IEEE members or affiliates, the membership fee is \$10 US. To join the new society, please visit www.ieee.org/join.

The NNS is the publisher of the following three transactions:

- IEEE Transactions on Neural Networks (TNN)
- IEEE Transactions on Evolutionary Computation (TEC)
- IEEE Transactions on Fuzzy Systems (TFS)

NNS Membership Cost: \$10 US (for IEEE members).

The KW Section includes a joint Chapter of NNS/Computer/SP: the chair of the neural networks portion is Prof. Mohammed Kamel.

NNS Membership Benefits

Membership in the NNS will allow you to:

- o Receive the printed version of the NNS (member-only) Newsletter
- o Participate to IEEE NNS governance activities by running for an Administrative Committee representative position, nominating candidates, and voting for the candidates
- o Be eligible for any IEEE NNS-sponsored technical and educational activity, such as recognition awards
- o Benefit from IEEE and NNS funding for local events through the NNS chapter
- o Access to all current and archival NNS electronic publications -- including TNN, TEC, and TFS (additional \$ 15 US over membership fee)
- o Subscribe to all three transactions (TNN, TEC, TFS) in print (additional \$50 US over membership fee) -- a savings of \$24 US over individual print subscriptions
- o Subscribe to the IEEE Transactions of NanoBioscience and IEEE Transaction of Nanotechnology at a special discounted rate (for co-sponsoring society members)

NNS Student Membership Cost: \$5 US (for IEEE student members).

NNS Student Membership Benefits

Student Membership in the NNS will allow you to:

- o Receive the printed version of the NNS (member-only) Newsletter
- o Organize an IEEE NNS student chapter in your university, so you may invite distinguished lecturers
- o Compete for the Walter Karplus Student Summer Research Support Award
- o Compete for an IEEE NNS-sponsored conference travel grant and other IEEE NNS sponsored technical and educational activities
- o Access to all current and archival NNS electronic publications -- including TNN, TEC, and TFS (additional \$ 8 US over membership fee)
- o Subscribe to all three transactions (TNN, TEC, TFS) in print (additional \$25 US over membership fee) -- a savings of \$12 US over individual transaction print subscriptions
- o Subscribe to the IEEE Transactions of NanoBioscience and IEEE Transaction of Nanotechnology at a special discounted rate (for co-sponsoring society members)

The IEEE NNS field of interest spans .the theory, design, application, and development of biologically and linguistically motivated computational paradigms emphasizing neural networks, including connectionist systems, genetic algorithms, evolutionary programming, fuzzy systems, and hybrid intelligent systems in which these paradigms are contained.. These topics are sometimes included in broader frameworks, usually referred to as Computational Intelligence or Soft Computing.

For more information please visit: www.ieee-nns.org

CONGRATULATIONS ARE IN ORDER

Prof. Raafat Mansour of the University of Waterloo has been elected to be a Fellow of the IEEE. He was Chair of this Section from 1994-1996, and is currently Chair of our Antennas and Propagation Chapter.

Tony Kormos has been elected to Senior Member status. He is our Membership and Development Chair.

GARY KENWARD OF NORTEL DESCRIBED WIRELESS NETWORKS

On 18 October, Gary Kenward of the Wireless Technology Labs, Nortel Networks, described Wireless Networks as “an industry waiting to happen”. Unlike the 2G/3G cellular network, which is hierarchical, IP wireless is a routed network. An important property is Quality of Service (QOS) which includes factors such as delay and reliability. Customers want QOS but are not prepared to pay for it for its own sake.

If a message does not require the full bit rate of a channel (say 12 Mb/s), the system must allow two or more users access: Admission Control is one of the open issues. The others which Gary stated were: Define QOS, QOS signaling, Mobility (seamless handover), and inter-technology handover.

NEWS FROM ACADEMIA

The University of Waterloo is to receive a million dollars from Scotiabank to fund a software laboratory. The university and McMaster U in Hamilton, are setting up a Centre of Excellence for Electricity

NEWS FROM INDUSTRY

DALSA Corp. of Waterloo now has 100% ownership of Zarlink Semiconductor of Bromont, Quebec: this silicon foundry was previously partly owned by DALSA.

Intelligent Mechatronic Systems Inc. of Kitchener has developed a smart controller for airbags, and has put it in to production with the help of a US auto parts company. The controller senses the presence of a passenger in the seat, and does not deploy that air-bag if the seat is empty, which would otherwise cause considerable damage to the inside of the car. Otman Basir, president of the Kitchener company, was on the executive of this section, as Student Activities Chair for the University of Guelph in 1998 and 1999.

Open Text of Waterloo has received certification from the American Department of Defence to meet new security standards in records management: its Livelink software may be used by the Homeland Security Department. The company is also negotiating with CDC Software of China to market and deliver LiveLink software in Korea and Taiwan as well as in China.

RIM (Research In Motion) of Waterloo has licensed Nokia Corporation to use its software: Nokia is the world's largest maker of cell phones. RIM has also licensed Palm and Handspring to use its keyboard technology. Furthermore, RIM has signed an agreement with Verizon Wireless of the USA to provide Blackberry service to the US network. Verizon has over 30 million subscribers, RIM has about 400,000. The US network uses CDMA (Code Division Multiple Access) 1X standard. RIM has appealed a court ruling that it infringes patents held by NTP Inc. of the USA: NTP is threatening an injunction which could stop RIM from selling Blackberries.

HEWLETT PACKARD RECYCLES COMPUTERS

Hewlett Packard (Canada) Ltd. of Mississauga will take back unwanted computers, printers or scanners from any business or consumer for re-use or recycling. The parent company started such a program last year. For more information see www.hp.ca/recycle.

ALTERNATIVE ENERGY

The Huron Wind project, sited near the Bruce Nuclear plant, is now up and running. Five windmills, whose blades rotate at 15 rpm typically, generate a total of 9 MW: the turbines cost \$15M (\$1.67 per watt): the land on which they stand can still be used for farming. Meanwhile, in an Australian desert, it is proposed to capture solar energy. A circular greenhouse 7 km diameter would collect hot air off the surface of the ground: the air then rushes up a chimney 1 km high at 60 km/h. In the base of the chimney are 32 turbines generating a total of 200 MW. Projected cost is \$440M Cdn. (\$2.20 per watt).

SQUARING THE CIRCLE

The Information Technology Centre of Tokyo University has calculated the value of π to 1.24 trillion places, taking 400 hours of time on a Hitachi supercomputer. This easily beats the previous record by the same team which is now in the Guinness Book of Records. 1.24 trillion decimal characters represents about 4.1 trillion bits: by comparison, the human genome contains 6 billion bits. (We will not be publishing the new value of π in this newsletter, as it would take about 500 million pages.- Ed)

QUICK THINKING

A man went into a supermarket to buy a loaf of bread and a carton of milk. For some reason he avoided the speedy counter, and lined up at a regular checkout. Soon, a young woman lined up behind him. He had never seen her before, but he noticed that her cart was filled to the brim with groceries to feed her family. When the man reached the cashier, he was told "Take a number from this bowl, and if it is the winning number, your order is free". Sure enough, he picked the winning number. "Big Deal" he thought. He turned to the woman behind him and said "Guess what, honey, we won!" He winked at her, put his arm round her and started to pick up her groceries and put them on the belt beside his