



KITCHENER-WATERLOO SECTION

February 2011

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The Kitchener-Waterloo Section of the Institute of Electrical and Electronics Engineers serves members whose mailing address is in Bruce, Grey, Perth, Waterloo or Wellington counties. It collects news relevant to local engineers and is published monthly.

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<http://kw.ieee.ca>

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KW Section Executives

<http://www.ieeekw.com/executive.php>

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GOLD (Graduates of the Last Decade)	Vacant
WIE (Women In Engineering)	Dr. Ladan Tahvildari
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LM (Life Members)	Vacant

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Conestoga College Student Branch	Mr. Justin Swance
University of Guelph Student Branch	Vacant
University of Waterloo Student Branch - Stream A	Mr. Haosen Cai
University of Waterloo Student Branch - Stream B	Ms. Joanna Ma

Upcoming Events

Updated information can be found at <http://www.ieeekw.com/activities.php>.

International Conference on Autonomous and Intelligent Systems

June 22 – 24, 2011
Burnaby, BC

The 2nd International Conference on Autonomous and Intelligent Systems (AIS 2011) is held in conjunction with the 8th International Conference on Image Analysis and Recognition in the beautiful city of Burnaby on the outskirts of Vancouver, Canada. It aims at providing a platform for researchers, engineers, academics and industrial professionals to present their recent research work and to explore future trends in various areas of autonomous and intelligent systems. The conference will address recent advances in theory, methodologies and applications in the field.

The scientific program will include keynote and invited speakers and fully refereed contributions. The organizers are working with Springer to have the proceedings published as a special volume in Springer Lecture Notes in Computer Science Series. It will be also indexed in major indexing sites. As with the first edition of AIS, selected articles will be published in the International Journal of Robotics and Automation and The International Journal on Control and Intelligent Systems, among other journals. AIS 2011 is technically co-sponsored by the IEEE.

<http://www.ais.uwaterloo.ca/ais11/>

Canadian Conference on Electrical and Computer Engineering – Technology Driving Innovation

May 8 – 11, 2011
Niagara Falls, ON

CCECE provides researchers, students, and practicing professionals in the area of Electrical and Computer Engineering with a Canadian venue in which they can present the latest technological advancements and discoveries. It is also a valuable opportunity to network, exchange ideas, strengthen existing partnerships and foster new collaborations. CCECE 2011 will feature mini-symposia with papers presented from a broad range of areas in Electrical and Computer Engineering. There will be tutorial sessions in leading topics, plenary talks from senior executives in industry and academia, special sessions in hot topics, social programs, the IEEE Canada Awards and Banquet night, best student paper awards luncheon, and industrial exhibitions.

This conference, organized by local IEEE sections, provides a forum for Canada's best emerging Engineering talent and industrial leaders to present, participate, sponsor and network between partners in Canada's High Technology Frontier.

http://www.ieee.ca/ccece11/index_en.php

1st IEEE Canada Women in Engineering National Conference

Symposium on Future Friendly Technologies
April 30, 2011
Mississauga, ON

The Women in Engineering National Conference (WIENC) provides researchers, students, and practicing professionals in diverse range of engineering, science and technology with a valuable opportunity to network, exchange ideas, strengthen existing partnerships and foster new collaborations.

WIENC 2011 will feature papers presented from a broad range of engineering, science and technology with the focus on future friendly technologies. There will be multitude of guest speakers from senior executives in industry and academia, roundtable discussions, workshop, poster presentations, best poster award, and industrial exhibitions.

You are invited to participate in WIENC 2011 by submitting a one page abstract in one of the specified areas. Both male and female delegates are encouraged to participate. The deadline to receive the abstracts is Sunday, February 20, 2011. For more information please refer to Submission Guideline.

<http://www.ieee.ca/wie/wienc11/>

21st International Conference on Noise and Fluctuations

June 12 – 16, 2011
Toronto, ON

The International Conference on Noise and Fluctuations (ICNF) is a biennial event, with the aim of bringing together specialists in fluctuation phenomena from different fields in science and engineering, to address both fundamental and applied issues. Recent past conferences in this series were organized in St. Louis (1993), Palanga (1995), Leuven (1997), Hong Kong (1999), Gainesville (2001), Prague (2003), Salamanca (2005), Tokyo (2007), and Italy (2009).

For queries about ICNF 2011 you can use the e-mail address
icnf2011@icnf2011.org

EMBS London Chapter Presentation

February 23, 2011, 5:30PM
London, ON
IEEE London Section

Speaker: Dr. Adrian Owen

Topic: Detecting awareness in the vegetative state: the role of functional neuroimaging

How can we ever know, unequivocally, that another person is aware? Notwithstanding deeper philosophical considerations about the nature of consciousness itself, the only reliable method we have for detecting awareness in others is by eliciting a predicted response to an external prompt or command.

Logically therefore, our ability to detect awareness in others is determined, not by whether they are aware or not, but by their ability to communicate that fact through a recognised behavioural response. This problem exposes a central conundrum in the study of awareness in general, and in particular, how it relates to the vegetative state and other so-called "disorders of consciousness".

http://meetings.vtools.ieee.org/meeting_view/list_meeting/4797

IEEE UW Guest Speakers

IEEE UW Student Branch

Keep an eye on the IEEE UW Student Branch website for further details on two very exciting guest speakers that will be visiting in the fall.

Canadian astronaut, Dr. Robert Thirsk will be sharing his experiences with the American and Russian space programs and his recent involvement on the International Space Station.

A representative from Blizzard Entertainment will be returning to Waterloo for the second year to talk about products and career opportunities.

http://ieee-sb.uwaterloo.ca/upcoming_events.aspx

Engineers and the World

University of Waterloo Researchers Get \$2.6M Boost

January 20, 2011

Luisa D'Amato, The Waterloo Record

Researchers at the University of Waterloo will get a cash infusion of nearly \$2.6 million to support their work, including projects aiming to improve wireless technology and making electronics manufacturing safer.

Five projects are getting more federal government support, part of a Canada-wide investment of \$55 million for 120 research projects at universities across the country. The money comes through the Natural Sciences and Engineering Research Council of Canada.

"Supporting science and research is critical to Canada's future economic growth," said Cambridge MP Gary Goodyear, Minister of State for Science and Technology.

"The economy remains this government's top priority, and we are getting it down in every sector we can think of."

Goodyear spoke at a news conference Thursday in the lab of chemical engineering professor Boxin Zhao, who leads a project that is trying to find a way to manufacture electronics that doesn't use lead in the adhesives. Lead is a poisonous metal.

Zhao thanked the government for the funds, saying it makes an interdisciplinary approach possible and allows the research to have the competitive edge in a rapidly changing global economy.

Waterloo-based Research In Motion is one of the industrial partners investing in this research project, plus two others at the university that received funds Thursday. The other projects that received funding are:

Improvements in wireless video multicasts. En-hui-Yang, a professor of computer and electrical engineering, is leading a project that is hoping to find solutions to loss of video quality and other problems associated with the surging demand for real-time wireless video multicast services through broadband wireless access technologies.

Improving information delivery over wireless networks. This project, led by Weihua Zhuang, investigates a set of "enabling technologies" to provide seamless, reliable and secure services.

"Smart" electricity grids. This project, led by Kankar Bhattacharya, professor of electrical and computer engineering, will connect diverse technologies to create a more energy-efficient and more reliable grid.

Using nanoscale technologies to explore high-capacity energy storage in rechargeable batteries. A statement from the university says this project, led by chemistry professor Linda Nazar, will be "paving the way to the next generation of new high-energy density energy storage systems."

<http://www.therecord.com/news/local/article/476427--university-of-waterloo-researchers-get-2-6m-boost>

ECE Professor and Grad Named New IEEE Fellows

December 16, 2010

University of Waterloo ECE News

Catherine Rosenberg, an electrical and computer engineering professor and the new Canada Research Chair in the Future Internet, was recently honoured as an Institute of Electrical and Electronics Engineers fellow member. Rosenberg was recognized for her contributions to resource management in wireless and satellite networks. Claire Tomlin, an electrical engineering alumna, also became a fellow for contributions to hybrid control systems with applications to air traffic management, unmanned aerial vehicles and systems biology.

Waterloo Student One of "Next 36"

January 17, 2011

University of Waterloo News Bulletin

Mechatronics engineering student Stephen Lake is one of 36 students chosen for "a unique national program that aims to transform Canada's most promising undergraduates into high impact entrepreneurs". Called The Next 36, it's sponsored by the University of Toronto, Rogers Communications and a host of other agencies and business leaders. Organizers say they started with 1,300 applicants: "During a National Selection Weekend finalists described as inspirational, challenging and life-changing, 64 finalists were winnowed down to 36, from a wide variety of disciplines and universities. The group includes social and serial entrepreneurs, academic award winners, campus leaders, accomplished artists, scientists and engineers, and elite athletes." Lake, the only Waterloo finalist, is a dragon-boater and, among other

achievements, was chair of the Ontario Engineering Competition for 2010. "Canada desperately needs innovation," he says. "It is vital to find an avenue to keep Canada's most talented and creative students here, driving productivity and economic growth through entrepreneurship. The Next 36 has provided me with a network of like-minded students, a wealth of experienced mentors and role models, on top of the explicit benefits of capital and resources." Next step: the finalists will be divided into teams of four, each with \$50,000 worth of "support, guidance from industry mentors and business leaders, and project development resources to build a business in the mobile environment". Then they'll enter a four-month summer residency at U of T's Massey College to "study with internationally acclaimed faculty and prominent Canadian entrepreneurs while continuing to work on their mobile projects".

<http://www.thenext36.ca/>

IEEE Canada Humanitarian Initiatives

Fall 2010

IEEE Canadian Review

For some time now there has been evidence that IEEE members have embraced the organization's core value "to foster technological innovation and excellence for the benefit of humanity". The Toronto section led the way last year by organizing the International Conference on Science and Technology for Humanity (TIC-STH 2009) at Ryerson University in Toronto [1]. As preparations were taking place, another group was participating in the Humanitarian Technology Challenge [2]; their work has evolved into what now is the IEEE Canada Humanitarian Initiatives Committee [3]. More recently, the University of Calgary held the Innovation for Humanity design competition and attracted individuals of different departments, skills, and perspectives; everyone participated wholeheartedly and enthusiastically [4]. These three initiatives are not the only ones; each year, many IEEE volunteers donate money and time to charities, volunteer in humanitarian projects, or organize events to benefit humanity.

<http://www.ieee.ca/canrev/cr64/index.htm>

Professor Honoured for Grad Supervision

January 5, 2011

University of Waterloo ECE News

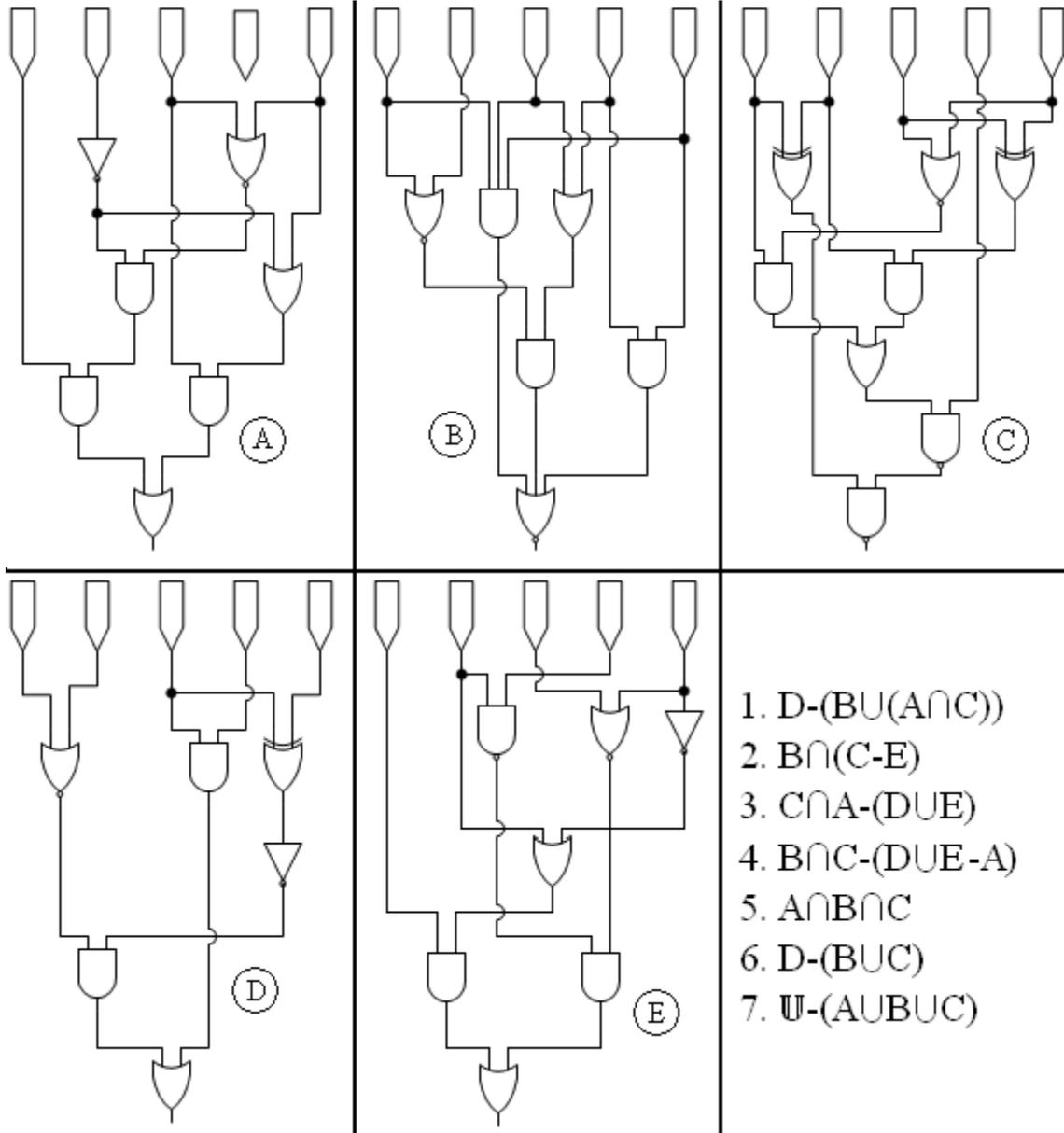
Omar Ramahi of electrical and computer engineering is one of four University of Waterloo faculty members to be presented with the Award of Excellence in Graduate Supervision at spring convocation in June. Ramahi, who holds the NSERC/RIM Industrial Research Associate Chair, is praised by past and present students for, among other things, his mentorship and ability to encourage the best from his students.

For Fun...

Brain Teaser

by Jason Boomer, The Grey Labyrinth

Not sure what you're looking for? It's only logical; you'll figure it out.



Engineering Humour

If a packet hits a pocket on a socket on a port,
 And the bus is interrupted as a very last resort,
 And the address of the memory makes your floppy disk abort,
 Then the socket packet pocket has an error to report.

If your cursor finds a menu item followed by a dash,
And the double clicking icon puts your window in the trash,
And your data is corrupted 'cause the index doesn't hash,
Then your situation's hopeless and your system's gonna crash.
If the label on the cable on the table at your house,
Says the network is connected to the button on your mouse,
But your packets want to tunnel on another protocol,
That's repeatedly rejected by the printer down the hall,
And your screen is all distorted by the side effects of gauss,
So your icons in the window are as wavy as a souse,
Then you may as well reboot it and go out with a bang,
'cause as sure as I'm a poet, that sucker's gonna hang.
When the copy of your floppy's getting sloppy on the disk,
And the microcode instructions cause unnecessary risk,
And you have to flash your memory and you want to RAM your ROM,
Quickly turn off your computer and be sure to tell your mom.