



WWW.IEECONTACT.ORG

AUGUST 2011
CIRCULATION 3095

VOLUME 42
NUMBER 08



IEEE prohibits discrimination, harassment and bullying.
Info: <http://www.ieee.org/web/aboutus/whatis/policies/p9-26.html>

- IEEE Vancouver - 100 years of technological excellence
- Be a part of history
- The European ITS Action Plan and technological trends to build an integrated transportation system
- Scheduling in wireless networks with flow arrivals and departures
- IGARSS 2011
- Lunch & Learn tour of Enigma Interconnect
- Analog and digital hybrid CMOS/memristor circuits
- IEEE GEOSS Workshop XLI
- **Command and leadership**

IEEE Vancouver – 100 years of technological excellence

Tuesday 23 August 6 – 7 pm
location TBA

Please mark your calendars for a Celebration Ceremony of IEEE Vancouver 100th Birthday!
Become a part of IEEE history by attending this special event .

There will be a “surprise” reveal and special guests you will not want to miss!

For more information please contact Section Chair Mazana Armstrong at mazana.armstrong@ieee.org.

Be a part of history

The Vancouver Section Centennial Committee plans to write and distribute the section history later this year in celebration of 100 Years of Technological Excellence. Our section history is made up of the member contribution and the organizations they work for. Consequently, we would like to invite all members to contribute to the creation of this Vancouver Section history.

Don't be disappointed that your organization is missing from the historical account. Here are few ways you can help ensure your history is recorded. We have started a wiki on the section history located at http://www.ieeeghn.org/wiki/index.php/IEEE_Vancouver_Section_History. You can log on with your IEEE membership account and contribute by editing these pages.

We will be capturing oral histories and if you would like to be interviewed then please contact chris.scholefield@ieee.org.

There may be people who you recognize as having played a significant role in electrical and electronic engineering within the Vancouver community. If you can suggest who should be interviewed or help with introductions then please contact Chris at the above address.



R. Srikant
University of Illinois

Distinguished Lecturer

Monday 15 August

UBC Kaiser 2020/2030
11:00am

Information
Joint Communications
Chair Alon Newton
alon.newton@gmail.com

Scheduling in wireless networks with flow arrivals and departures

Throughput-maximizing scheduling algorithms have been well-studied for wireless networks under the assumption that the number of flows in the network is fixed. In this talk, we will consider the impact of flow-level dynamics on the throughput and delay performance of both cellular and ad hoc wireless networks. First, we will describe traditional scheduling algorithms and identify the reasons for their poor performance in the presence of flow-level dynamics. Then, we will present new scheduling algorithms which significantly improve upon the throughput and/or delay performance of the traditional algorithms.

Speaker: R. Srikant is with the University of Illinois at Urbana-Champaign, where he is the Fredric G. and Elizabeth H. Nearing Endowed Professor of Electrical and Computer Engineering and a Research Professor in the Coordinated Science Lab. His research interests include communication networks, stochastic processes and queueing theory. He is the author of the book "Mathematics of Internet Congestion Control" and a co-author of the monograph "Network Optimization and Control." He is a Fellow of the IEEE and a Distinguished Lecturer of the IEEE Communications Society for 2011-2012.



Ed. August 12

Lunch & Learn
BBQ lunch and factory tour of
Enigma Interconnect Inc.

Friday 22 July - Noon
8070 Winston Street Burnaby

Enigma Interconnect is the largest and most sophisticated Canadian manufacturer of bare printed circuit boards west of Ontario and has been making PCB's in Burnaby since 1973.

On Friday July 22nd, Enigma will be hosting a BBQ lunch, net-working function and process tours for all members and friends of the IEEE.

Lunch will start at 12:00 noon that day and the staggered tours will commence in groups of 5 - 10 people per tour-guide at around 1:00.

RSVP Alon Newton
by 15 July
anewton.ieee@gmail.com

The European ITS Action Plan and technological trends to build an integrated transportation system



Reinhard Pfliegl
ITS World Congress 2012

Friday 05 August
7:00pm - 9:00pm

BCIT Burnaby campus
SW5-1840 lecture theatre

Information

Joint Communications
Chair Alon Newton
alon.newton@gmail.com

In 2010 the European Commission has launched the 'European ITS Action Plan' to encourage the harmonized implementation of ITS in the road transportation system across the EU Member States. This action plan addresses 6 areas with in all 24 specific measures where member states of the European Union are legally binded to install cross border ITS in an harmonized way.

This has to be seen in the context of the most recent technological developments in the area of co-operative systems in road transportation. A critical analyses of these developments highlight interesting similarities between ITS developments on other modes of transport. It will be shown that these trends will strongly impact the developments in traffic management and set-up of an integrated transportation system in the near future.

Speaker: Reinhard Pfliegl is actually the General Chail of the ITS World Congress 2012 in Vienna – the world leading event in ITS. Till March 2011 Dr. Reinhard Pfliegl acts as Managing Director of AustriaTech, a federal agency for technological measures, established in 2005. Actually he is the co-ordinator of a European research projects concerned with co-operative systems based on infrastructure vehicle communication.

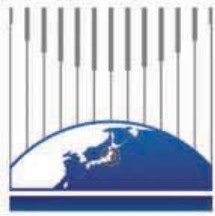
From 1980-1987 he gained working experience at the Austrian branch of ITT in the field of new digital public telecom systems and took the lead in the CAD (Computed Aided Design) department. In 1987 he started with the new formed Broadband Communication Division at ALCATEL to introduce new technologies (ATM, SDH, MAN, etc.) for public telecom operators. In 1993 he joined the Transport Division of

ALCATEL in order to build up a new department for ITS applications (cellular radio application for tracking and tracing of goods, tolling systems, fleet management systems, logistics information services for goods transport, management systems for public transit operators).

From 2000-2005 he was responsible for the design and development of a new traffic management system at via donau, a public agency promoting inland waterway transport. The so-called "River Information Services" were the first operating system on inland waterways world wide and now is the technical standard for similar systems in Europe and outside Europe. In 2004 he became elected member of the Inland Waterway Committee (AW020) at TRB in honour of this results, which have been published in many articles world wide. He was founder of ITS-Education at University of Applied Sciences "Technikum Vienna" and co-founder of Transport Logistics Studies at University of Applied Sciences "bfi Vienna". Dr. Reinhard Pfliegl is the author and coordinator of the Austrian national Telematics Masterplan published 2004 by the Ministry of Transport, Innovation and Technology and is the actual chair of the scientific board of Arsenal Research - a non university research organsiation.

From 2007 to 2009 he was member of the Board of Governors IEEE ITS Society and is now acting as VP conferences for this society. He received his M.S. degree in Physics as well as his PhD (Technical Science) degree at Technical University Vienna and has M.S. in Higher Education Mathematics, Chemistry, Physics at University Vienna. In 2002 he became Honorary Prof. of Technical University Varna (Bulgaria).





July 24-29, 2011, Vancouver, Canada

Beyond the Frontiers: Expanding our Knowledge of the World

IGARSS 2011 features the following open-to-the-public events on Thursday, July 28:

Joint JAXA+NASA Display on environment study by remote sensing technology
Located on the Hyperwall at the entrance to the Vancouver Convention Centre, East Building (Canada Place)

Public Poster Display on March 11, 2011 East Japan Earthquake and Tsunami
Thursday, July 28, 1:20pm - 4:00pm
Vancouver Convention Centre, East Building, Exhibition Hall B

Public Lecture by Dr. Shunichi Koshimura (Tohoku University, Sendai, Japan)
"The 2011 Tohoku Earthquake Tsunami Disaster: Its Impact and Lessons"
Thursday, July 28, 5:15pm - 6:00pm
Vancouver Convention Centre, East Building, Meeting Room 1

For local information, contact Prof. Dave Michelson, dmichelson@ieee.org.

<http://www.igarss11.org>



Photo Credits:
Tourism Vancouver
Capilano Suspension Bridge
Tourism Vancouver / Tom Ryan
Vancouver



Analog and digital hybrid CMOS/memristor circuits as a future computing paradigm

Dmitri Strukov
UCSB

Monday 25 July
4:00 p.m.

Room 2020
Kaiser Building
2332 Main Mall, UBC

I will review recent experimental and theoretical efforts at UCSB towards development of a hybrid circuit paradigm (Fig. 1d) based on a combination of nanodevices and conventional CMOS stack, in particular focusing on analog and digital circuit applications. The key component of hybrid circuits is a resistive switching (“memristive”) nanodevice made of a thin layer of a special material sandwiched between two electrodes, e.g., crossbar wires (Figs. 1a, c). By applying electrical bias across electrodes, device resistance can be changed reversibly either in continuous or binary way (Fig. 1a). The resistive state can be retained for a long time, provided that subsequent operation is at smaller biases.

Unlike CMOS transistors, memristive devices have only one critical dimension so that their lateral features might be defined more aggressively using advanced patterning technologies. In addition, because of low temperature fabrication the effective device footprint can be further reduced if multiple crossbar layers are integrated with CMOS (Fig. 1d).

The high integration density of memristive devices is combined with high flexibility, functionality and yield (but lower density) of CMOS devices. As a result,

hybrid circuits are especially attractive to implement digital and analog memories, reconfigurable circuits, and bio-inspired information processing. For example, nanodevices would be used to implement density critical functions, i.e. configurable weights in multiply and add circuitry (Fig. 1b), while CMOS circuitry to provide gain and signal restoration, which might be less critical in such applications.

Speaker: Dmitri Strukov is an Assistant Professor in the department of Electrical and Computer Engineering at UC Santa Barbara. In general, his interests are in the physical implementation of computation, including device physics, circuit design, and high-level architecture, with emphasis on emerging device technologies.

He received a M.S. in Applied Physics from the Moscow Institute of Physics and Technology (1999) and a Ph.D. in Electrical Engineering from Stony Brook University in New York (2006). Prior to joining UCSB he was a research associate at Hewlett-Packard Laboratories in Palo Alto, CA working on theoretical aspects of memristive devices and circuits.

Information
Computer Society Chair
Sathish Gopalakrishnan
sathish@ece.ubc.ca



29 Jun - Ed



IEEE GEOS Workshop **XLI** Global Water Cycle Interoperability and Field Applications

Place: Vancouver, BC, Canada
Vancouver Convention Center

Time: July 24, 2011 Sunday
8:30am-6:00pm

This one-day workshop will be held prior to the IGARSS symposium. It will bring together the Earth Observation community, modeling, and other water management communities to look at issues of Global Hydrology Interoperability and field Applications and the needs of the community for GEOS-derived information. The



The workshop will consist of a series of presentations, breakout sessions and discussions. A report will be written with recommendations for GEOS.

For more information, refer to the website: <http://www.ieee-earth.org/event/geoss-workshop-xli-hydrology> or contact the following organizers:

Doug Cripe (dcripe@geosec.org)
Prof. Albin J. Gasiewski (al.gasiewski@colorado.edu);
Prof. Toshio Koike (tkoike@hydra.t.u-tokyo.ac.jp);
Rick Lawford (lawford@umbc.edu);
Francoise Pearlman (jsp@sprintmail.com);
Kim Williams (k.williams@ieee.org)

Organized by:





Commander Kelly Larkin
Maritime Forces Pacific

IEEE professional skills seminar Command and leadership

Projects of all shapes and sizes often require specialized teams of highly skilled and motivated people to accomplish a spectrum of related goals and tasks. As the person responsible for a major project, management processes are essential to efficiently employ resources to achieve project milestones. But it takes more to ensure success when the going gets tough – it takes resourcefulness, perseverance, and the unwavering support of your team! Irrespective of the size of the team, it's the leadership which energizes and mobilizes people by earning trust, providing focus, creating team spirit and confidence, ultimately inspiring a strong individual and collective desire to achieve the mission in the face of challenging circumstances.

The aim of this presentation is to discuss aspects of command and leadership within the context of a major military mission: the preparation and deployment of a Canadian guided missile frigate to conduct high intensity maritime security operations.

As the Captain of Her Majesty's Canadian Ship Calgary (FFH 335) from 2006 to 2008, Commander Kelly Larkin led a team of 230 officers and sailors from completion of the ship's docking refit, through sea trials, systems certification, and all levels of individual and crew training, culminating in a 6 month deployment of the ship around the world to conduct maritime security operations in the Arabian Sea in 2008.

This presentation will discuss:

- Anatomy of a warship and the Leadership challenge
- The Mission: Task Force Arabian Sea (CTF 150) and Maritime Security Operations
 - Counter-terrorism
 - Counter-smuggling: drugs, weapons and people
 - Piracy Suppression
 - Theatre Security Cooperation with neighbouring states

- The people who make it all possible: Our Sailors, Our Families and our Supporters
- Preparation for operations in a high threat environment
- What is Command? Responsibilities of the Ship's Captain
- Leading people during the good times, the not-so-good times, and when the worst happens
- The importance of values and organizational culture in creating a high performance team

Speaker: Commander Larkin has over 30 years' experience in leadership appointments ashore and at sea in ships and submarines of the Canadian Navy, and submarines of the Royal Navy in Great Britain. His senior appointments ashore have included responsibility for operations planning and readiness, human resources, education and training management, and project management for Maritime Forces Pacific. He has also held command appointments as the Captain of Her Majesty's Canadian Ships Moresby, Protecteur, and Calgary. He subsequently served as the Commanding Officer of VENTURE, the Naval Officers Training Centre in Victoria, BC.

Commander Larkin's education is concentrated mainly on business and national and international security studies. He holds a Master's Degree in Business Administration from Royal Roads University, a Master's Degree in Defence Studies from the Royal Military College in Kingston, a Diploma in European Management Consulting from the Grenoble School of Business, France, and he completed the Executive Course at the Asia-Pacific Centre for Security Studies in Waikiki, Hawaii. Volunteer activities have included membership with the Royal Roads University BCom Advisory Board, and the School of Business Advisory Council. He became a member of the Canadian Knowledge Management Institute Advisory Council in April, 2011. He is currently supporting the NSERC Create Wireless proposal being developed by Prof. Dave Michelson and colleagues

Thursday 04 August
13:30-15:00

MCLD 418
UBC

This is a **must attend** seminar for all grad students. Practicing engineers are encouraged to join as well. RSVPs are requested, please.

Information

Joint Aerospace and Electromagnetics chairs
Dave Michelson
davem@ece.ubc.c
Steven McClain
StevenMcClain@ieee.org

25 July - Ed



IEEE Joint Aerospace and Electromagnetics Chapter