IEEE VANCOUVER CONTACT

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Chair's Message

Dear members,

As we draw closer to summer, the section goes through another peak of activity before schools close and vacations start. This surge in activity started at the section executive level with submitting of the financial L50 report to headquarter. The reporting ensures we receive our rebate for meetings and membership during the previous year. Just recently, IEEE headquarters introduced new tools for submitting the financial reporting and we will be using this tool moving forward.

Every year, during the last week of April, IEEE Canada board (aka Region 7 board) meets for the spring session. This year, the meeting was held in Montreal, QC and our section was well represented. Besides myself and Steven McClain, our treasurer, Dave Michelson, the industry advisory chair of IEEE Canada and our section, and Zahra Ahmadian, IEEE Canada's and our Women in Engineering chair were present as well. Peter W. Staecker, IEEE president elect and Howard E. Michel, Vice President, Member and Geographic Activities were in attendance. As usual, section chairs provided their reports and shared experiences and best practices. The financial reporting of the region and funding for MGA activities were discussed as well.

IEEE Canada president, Keith Brown presented his plan to provide support to sections and geographic units through coordinators at the region level. To ensure success, he revealed his plan to facilitate continuity through longer term plans of action. IEEE president elect also talked in support of this initiative assuring the same will be followed at the IEEE board level.

During the spring meeting, a number of scholarships and awards were presented. Again our section was well represented in the list of award winners. We had two IEEE Canadian Foundation scholarship winners, a receiver of a grant towards research from ICF, and our own Zahra Ahmadian chair of the local and canadian WIE chapter received a service award for her dedication and hard work. Please read more details on these awards and their recipients in another article in this issue of Contact.

Last month, our section submitted an application to Region 7 to be considered for the Canada best large section award. We have been a recipient of this award numerous times in the past. It is with great pleasure that I announce that once again we have been the winner of this award in recognition of the activities our volunteers provide and the programs and services they strive to roll out. On behalf of the members I wish to thank all the volunteers who helped the section achieve this success and congratulate them on another momentous year. Special thanks go to Mazana Armstrong, our past section chair and chair of the Centennial Committee along with the rest of the Centennial organizers, without whose leadership and hard work we would not have been able to have such a prolific year.
In conclusion, I would like to invite you all to participate in our local events to meet other members and expand your personal network. After all you are a member of the best IEEE section in Canada.

On the stabilization of positive switched systems: state of the art and open problems

Maria Elena Valcher
University of Padova

Distinguished Lecturer

Monday 25 June
11am-noon

Electrical & Computer Engineering
Kaiser 2020
2332 Main Mall
UBC

Sponsored by the joint chapters of IEEE Control Systems, Robotics and Automation, and Systems, Man and Cybernetics socities

A positive switched system (PSS) consists of a family of positive state-space models and a switching law, specifying when and how the switching among the various models takes place. PSS's have been adopted for describing networks employing TCP and other congestion control applications, for modeling consensus and synchronization problems, and, quite recently, for describing the viral mutation dynamics under drug treatment.

As for the broader classes of hybrid and switched systems, stability and stabilizability properties have been the two major issues that attracted the researchers' attention. The most popular approach to the investigation of stabilizability of PSS's is undoubtedly the one based on common Lyapunov functions or multiple Lyapunov functions. In addition to the standard quadratic and polyhedric positive definite functions, one may resort to the broader class of copositive (linear and quadratic) functions, by this meaning Lyapunov functions that take positive values only on the positive orthant. Also, interesting conditions involving convex combinations of the subsystem matrices can be adopted to characterize stabilizability. In the talk we will provide a comprehensive picture of the stabilizability conditions for stability, and we will point out some open problems.

Speaker: Maria Elena Valcher received the Ph.D. Degree in Systems Engineering (1995) from the University of Padova (Italy). Since January 2005 she is Full Professor of Control Theory at the University of Padova.

She is author/co-author of more than 60 papers appeared on international journals, 70 conference papers and 14 book chapters. Her research interests include multidimensional systems theory, polynomial matrix theory, behavior theory, convolutional coding, fault detection and observer design, delay-differential systems, switched systems, positive systems and Boolean Control Networks.

She has been in the Organizing Committees and in the Program Committees of several conferences. She is presently Program Chair of the 51st IEEE Conf. on Decision and Control, CDC 2012, Maui.

She was in the Editorial Board of the IEEE Transactions on Automatic Control (1999-2002), Systems and Control Letters (2004-2010) and she is currently in the Editorial Boards of Automatica (2006-today), Multidimensional Systems and Signal Processing (2004-today), and SIAM J. on Control and Optimization (2012-today).

She was Appointed Member of the CSS BoG (2003); Elected Member of the CSS BoG (2004-2006; 2010-2012); Vice President Member Activities of the CSS (2006-2007); Vice President Conference Activities of the CSS (2008-2010).

She is a member of the 2012 and 2013 Control Systems Award committee and a Distinguished Lecturer of the CSS. She received the 2011 IEEE CSS Distinguished Member Award and she is an IEEE Fellow.

CSS IEEE Control Systems Society

Robotics & Automation Society

Systems, Man, & Cybernetics Society

Information
CS/RA/SMC
Joint chapter chair
Ryozo Nagamune
nagamune@mech.ubc.ca

Ramon Lawrence
UBC - Okanagan

Tuesday 05 June 05
5:30pm-6:30pm

EME 1203
UBC Okanagan Campus

Information
Julian Cheng
UBC Okanagan chair
julian.cheng@ubc.ca

Reducing water usage with sensor networks and data analysis

Technology allows us to monitor our environment and reduce our usage of finite resources such as energy and water. In the Okanagan Valley, water supplies are constrained and the population is continually increasing. A significant amount of water is used for outdoor irrigation, often very inefficiently. This presentation will discuss research on building automated systems to collect sensor data through wireless sensor networks and how that data is stored and analyzed to reduce lawn irrigation by up to 50%. Our research group has built a complete sensor architecture including hardware, software, and reporting and analysis. The system has been deployed in Sonora Park in Glenmore, and ongoing research collaborations are with the City of Kelowna.

Speaker : Ramon Lawrence is an associate professor of computer science at UBC Okanagan. His research interests are database systems, embedded devices, and wireless sensor networks. He is the founder of Unity Data Inc. that provides software for data integration from multiple sources and is a database consultant for enterprises requiring data solutions. The research partnership with the City of Kelowna on adaptive irrigation systems has resulted in funding from the Okanagan Basin Water Board and a best paper award at the IEEE Sensor Application Symposium in 2011. Dr. Lawrence is a member of the ACM and IEEE.

For further information regarding the seminar, please contact Julian Cheng (Email: julian.cheng@ubc.ca)

Susan M. Ben-Oliel
Fasken Martineau

Thursday 07 June
18:30

Fasken Martineau
2900-550 Burrard Street
Vancouver

Information
IEEE Vancouver
Consultant Network
chair Alon Newton
alon.newton@gmail.com

Identifying and protecting your intellectual property: patents, copyright, trade secrets and trade-marks

- IP best practices for start-ups
- Invention capture, evaluation and protection
- Building and managing an IP portfolio
- Avoiding premature disclosure and loss of patent rights
- IP costs and budgeting
- IP ownership
- Awareness of third party IP and freedom-to-operate

Susan Ben-Oliel has 20 years of experience as a registered patent and trade-mark agent. Beyond her patent and trade-mark agent work, she focus her practice on intellectual property and technology law. Susan have extensive experience assisting companies in all aspects of protecting intangible assets in Canada and internationally.

She has worked in large law firms in both Toronto and Vancouver, as a sole proprietor of her own intellectual property legal practice and as in-house counsel for a TSX and Nasdaq listed Vancouver-based technology company where she provided legal advice to management relating to its' research, manufacturing and sales divisions. While in-house, she managed a portfolio of hundreds of patents and trade-marks worldwide, including all oppositions and enforcements.

During the past two decades, Susan has gained in-depth knowledge and experience protecting the intellectual property of technology companies and in positioning their technologies, from an intellectual property perspective, in competitive marketplaces.She routinely provide opinions on the patentability of technology, draft. and prosecute patent applications, provide freedom to operate (infringement) opinions, strategically manage patent and trade-mark portfolios, and conduct due diligence related to intellectual property in commercial transactions and litigation. Susan also work closely with R&D and business development units in identifying new proprietary technologies and monitoring competitor activity. She develop and align patent strategies to achieve a client's business objectives, and negotiate and prepare commercial contracts including: license agreements, supply agreements, distribution agreements, service agreements, research agreements and confidentiality agreements.

Note: Although this presentation is open, membership in the IEEE Vancouver Consultant Network (The geo-code is CN70027) is limited to IEEE members only. We are seeking a volunteer to become the chair for the affinity group. If you are an IEEE member and interested please forward your name to: anewton@ieee.org

Power Optimizer:
BC Hydro's transmission loss reduction program

Thursday 21 June
12:00 noon - 1:00 pm

BC Hydro Edmonds A01
Edmonds Skytrain
Auditorium
6911 Southpoint Drive,
Burnaby

Information
Power and Energy chair
Rama Vinnakota
Rama.Vinnakota@bchydro.com

BC Hydro's transmission losses are about 6.43 per cent of its total yearly generated energy. In 2010, Grid Operations of BC Hydro initiated a project to optimally control system voltages to reduce system losses. The implementation of this program required the implementation of an innovative technology solution together with process changes in the Control Room. The validation of the decision support tool termed "Power Optimizer" revealed around 5 MW of loss savings by operating specific devices at substations. The program has been in production since November of 2011.

Presentations

- Overview of Loss Reduction Program
  Ebrahim Vaahedi
- Control Center Enablement of Loss Reduction
  Asher Steed
- Real-time Environment
  Djordje Atanackovic
- Technology Implementation
  Raju Vinnakota

Speakers: Ebrahim Vaahedi leads Operations Technology in Grid Operation

Asher Steed is System Control Manager in Real-time Operation

Djordje Atanackovic is Engineering Team Leader in Grid Operations Support responsible for all real-time power system applications.

Dr Raju Vinnakota, has 15 years of experience in design, development of EMS applications and has been supporting EMS applications for Control room in BC Hydro since year 2000 in his role as Senior Engineer

IEEE PES
Power & Energy Society®

IEEE Vancouver - *Canada's best!*

On May 1, IEEE Canada Awards and Recognition Committee Chair Hussein Mouftah announced that IEEE Vancouver has been named Canada's Exemplary Large section for 2011.

IEEE Canada executives lauded the many activities undertaken during its Centennial year, as well as the lengthy and thorough documentation submitted as part of its nomination. Also noted were the outstanding leadership and attention to continuity demonstrated by Mazana Armstrong and Kouros Goodarzi, past and current chairs respectively.

"The Exemplary section award from IEEE Canada is important to us because it confirms what we are all striving for... excellence in serving our members", noted Goodarzi. The section enjoyed an outstanding year in 2011, and Mazana deserves a lot of credit for her leadership. As a section, we plan to continue on this path towards excellence."

"This achievement was made possible by the efforts of all of our volunteers, sponsors and contributors during our Centennial year", replied Armstrong. On behalf of the Vancouver section, its volunteers and its members, we would like to express our thanks to IEEE Canada for this special recognition."

This latest award from IEEE Canada follows two other recent awards for exceptional performance bestowed upon IEEE Vancouver. In 2010, it received the Exemplary section award from IEEE Canada and the IEEE MGA award as Outstanding Large section (worldwide), both for performance in 2009. The award certificate will be formally presented at the Region 7 meetings in the fall.

For more information about IEEE Vancouver visit
http://vancouver.ieee.ca

The 2012 IEEE Canada Foundation Scholarships

On 28 April 2012, at the IEEE Region 7 spring meetings in Montreal, the IEEE Canada Foundation (ICF) announced the winners of the 2012 ICF student scholarships, two of which were awarded to IEEE Vancouver student members, Devyn Farr and Apaula Kabir, by ICF president Bob Alden.

- Devyn Farr is a third year electrical engineering student at the University of British Columbia's Okanagan campus. He is the director of the campus Mechatronics club, and Chair of the IEEE Student branch. Moreover, he is a National Science and Engineering Research Council - Undergraduate Student Research Award recipient for his work in the UBC Okanagan Microwave Technologies Lab.

- Apaula Anindita Kabir is a senior electrical engineering student in the ECE Department of University of British Columbia. As the field trip leader from 2011 to 2012 in the UBC Student Branch of IEEE, he planned both local and international field trips for electrical and computer engineering students. He has been an active member of the UBC student branch of IEEE since his 2nd year.

In addition to these two scholarships, Emily Landry from UBC Okanagan, was awarded a special ICF grant in the amount of $1000 towards the support of her participation in the Solar Energy and Water Diversion initiative.

- Emily Landry is graduating with a BASc degree in Electrical Engineering this June from UBC. She helped establish the newly formed IEEE Student Branch at UBC's new campus in the Okanagan, where she served as the Vice Chair and Chair. During her terms she opened a McNaughton Learning Resource Centre with funding from the ICF McNaughton Learning Resource Centre Grant, and was the recipient of the 2011 ICF Scholarship.
  Emily also formed and led a new Engineers Without Borders chapter at UBC Okanagan, and also actively pursues research in the area of photonics. She was the 2011 winner of the IEEE HackBusch award.

IEEE Vancouver is proud to salute these outstanding student members in its ranks.

About The IEEE Canada Foundation Scholarship

The ICF Scholarship is intended to encourage awareness of and participation in the educational programs supported by the IEEE. The ICF annually sponsors a number of scholarships, the value of each is currently $5,000. It is intended to pay a major portion of the final year tuition fees and related academic expenses of a student who has demonstrated a previous commitment to the IEEE McNaughton Learning Resource Centre and related IEEE activities, and who indicates a desire to continue this activity.

To be considered, applicants must be student members of IEEE and registered in their penultimate year and have been active in the McNaughton Centre for a minimum of one year. Candidates are nominated by their IEEE Student Branch counselor, and must then submit a report detailing their activities in the IEEE and McNaughton Centre. Within the limitations imposed by course work, the Scholarship holder is expected to work closely with the IEEE Student Branch executive, and to be active in the IEEE McNaughton Learning Resource Centre.

You can find more information on ICF scholarships here:
http://ieeecanadianfoundation.org/EN/mcn_sch.php

IEEE Vancouver members Zhen Wang and Giurgiu Valentin were elevated to IEEE Senior Member grade on 21 April 2012.

Volunteers needed

The Vancouver Section relies on individual members - volunteers who chose to get involved in the running of the Section. We rely on volunteers to set policies, put on technical meetings, and to enhance our services to our members. We are also searching for volunteers with talent and interest in event organization and activity coordination. The Section Event Coordinator will assist executives in organizing and holding technical meetings, chapter activities, and section events.

We are also putting together a Multimedia Team and are looking for volunteers to work on video and audio related production tasks. There is great opportunity for capturing the events of the section and there have been some audio/video recordings in the past that would need conversion and editing. If you have an interest in these positions, but don't consider yourself an expert, please don't hesitate to get involved – (hands-on) training is provided for all of our volunteer positions.

There are many other volunteer roles and positions available, so if you have an interest in serving please contact me at the coordinates below, or any other member of the Section Executive Committee. We look forward to welcoming you on to the Section Executive team!

Kouros Goodarzi
IEEE Vancouver Section Chair
krs@ieee.org

Welcome.. recent arrivals to the best IEEE section on Earth! ☸

Ryan Aareskjold	ST
Othman Abahussein	ST
Pouya Aein	ST
Samineh Afrough	ST
Sadegh Ahmadi	GS
Mohamed Ahmed	GS
Rehan Ahmed	GS
Sheikh Nijam Ali	ST
Abdulkareem Althwaini	ST
Omar Aziz	GS
Harlen Bains	ST
David Baldwin	ST
Amin Banitalebi Dehkordi	GS
Sergey Blagodurov	GS
Yanick Boisclair	M
Andrew Boitchenko	ST
Dale Bromley	M
Sandy Buchanan	ST
Robert Cameron	M
Lino Carrillo	ST
Patrick Chaw	ST
Jayce Chen	ST
Les Chutskoff	M
Alex Chystov	ST
Patrick Conroy	GS
Kirsten Dohmeier	ST
Behnaz Edalat	ST
Gerald Ellis	ST
Niloofar Fekri	ST
Kevin Fletcher	ST
Jordan Frank	GS
Naomi Fredeen	ST
Prajeet GC	ST
Mireille Ghoussoub	ST
Keisan Goldsmith	ST
Wei Guo	GS
Peter Harco	M
Alexander Heinzemann	ST
Lane Henderson	ST
Thomas Hilton	ST
Andrew Holliday	M
Mohammad Honarvar	GS
Jason Hsu	M
Parisa Iranpour	ST
Robert Jakabosky	M
John Jarvis	M
Wael Jendli	ST
Zhuoli Jiang	ST
Mark Johnson	M
Mohammad Hadi Jooybar	ST
Berhad Kajbafzadeh	GS
Mahshid Karimi	GS
Kamyar Keikhosravy	GS
Mehrnoush Khojasteh	GS
Hady Kholeif	ST
Ajit Khosla	M
Denis Kisselev	ST
Vladimir Klyaznika	AM
Nikolai Kummer	GS
Jimmy Kwa	GS
Kevin Lageweg	ST
Clint Landrock	GS
Wayne Liang	ST
Aranildo Lima	GS
Dan Lin	ST
Charles Lo	ST
John Maidens	ST
Igor Markovich	M
Tomas Martin	M
Sancho McCann	GS
Sam McWhannel	ST
Peter Michael	ST
Nima Moazen	GS
Negar Mohaghegh Harandi	GS
Farid Molazem Tabrizi	GS
Taejin Moon	ST
Taylor Moore	ST
Konstantin Moroz	M
Javad Nasiri	M
Steve Newton	M
Caleb Ng	ST
Ron Nielsen	AM
Yun Niu	M
John-Jose Nunez	ST
Frolin Ocariza	GS
Atefeh Palizban	M
George Pava	M
Jason Poitras	ST
Sabrina Rashid	ST
Abdol Rasul Rasuli	GS
Shalaleh Rismani	ST
Hossein Sameti	M
Siavosh Shirgiri	ST
Arrvindh Shriraman	AM
Inderpreet Singh	GS
Sarv Sohi	ST
Roy Tessler	M
Francis Therrien	GS
Joey Tsung	ST
Arash Vahdat	GS
Michel van Eekelen	ST
Sarah Walinga	ST
Bo Wang	M
Jonathan Warkentin	ST
Rebekah Wirch	ST
Tony Wu	ST
Chunfang Xie	M
Ali Yazdani	M
Shing Yam William Yeung	ST
Reed Yuan	M
Kelvin Yuen	ST
Ali Zarei Ghanavati	GS
Dong Zhang	GS
Chi Zhang	ST
Richard Zhang	ST

AF Affiliate - AM Associate Member - F Fellow - GS Graduate Student Member - LF Life Fellow
LM Life Member - LS Life Senior - M Member - SM Senior Member - ST Student Member

☸ IEEE Vancouver named Outstanding Large Section for 2009!
IEEE Vancouver named Canada's Exemplary Large section for 2011!