- Upcoming IEEE Conferences in Vancouver area

- Connected vehicle technologies

- Currently looking for volunteers

- Field robotics and assistive robotic systems

- iOS Interprocess communication security

- Evolution toward 5G cellular: key challenges

- Workshop and site tour at Zaber Technologies

- Prof. Ljiljana Trajkovic receives 2015 EF Glass award

- IEEE Vancouver Windows 10 hackathon

Upcoming IEEE conferences in Vancouver area

2015 IEEE International Conference on Software Quality, Reliability & Security
03 - 05 August 2015 — Richmond BC
http://paris.utdallas.edu/qrs15/

6th Internat'l Conference and Workshop on Computing and Communication
15 - 17 October 2015 — Vancouver BC
http://www.iemcon.org/

IEEE 7th International Conference on Cloud Computing Technology and Science
30 November - 03 December 2015 — Vancouver BC
http://2015.cloudcom.org/

16th ACM/IFIP/USENIX International Middleware Conference
08 - 11 December 2015 — Vancouver BC
http://2015.middleware-conference.org/

Connected vehicle technologies: communication system analyses and green-driving strategies

Wenlong Jin
U California, Irvine

Monday 29 June

11 am

Rm 418, Macleod Bldg

2356 Main Mall,UBC

Connected vehicle technologies can transform the transportation sector, improving the safety, mobility, and environmental impacts. My collaborators and I have focused on some theoretical issues related to the fundamentals and applications. This talk is divided into two parts. In the first part, I will discuss basic characteristics of connected vehicle systems, also known as vehicular ad hoc networks, built on the dedicated short range communications. In particular, I will present mathematical models for estimating instantaneous connectivity and communication throughputs under general vehicular traffic patterns.

In the second part, I will discuss applications of connected vehicle technologies in the development of green-driving strategies. For freeway stop-and-go traffic, I will present a distributed cooperative strategy based on vehicle-to-vehicle communications and the simulation and field test results. For arterial traffic, I will present a feedback control strategy based on infrastructure (signal)-to-vehicle communications. To conclude, I will present some related efforts within our group.
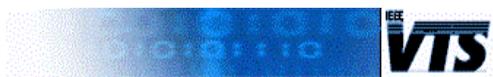
Speaker: Dr. Wenlong Jin (BS in Automatic Control, University of Science and Technology of China, 1998; PhD in Applied Mathematics, UC Davis, 2003) is an Associate Professor of Civil and Environmental Engineering at UC Irvine. He is interested in developing fundamental and systematic concepts and methods for modeling, analyzing, monitoring, and controlling transportation systems, through interdisciplinary approaches based on behavioral modeling, mathematical analysis, systems theory, and information and communication technologies.

He has been a principal or co-principal investigator of over twenty federally- and state-sponsored projects. Dr. Jin has co-authored 42 peer-reviewed journal articles, most of which were published by Transportation Research, Transportation Science, and other top journals, 37 conference proceedings, and five reports, and has given over 40 invited talks and conference presentations. He is an editorial board member of Transportation Research Part B and an Associate Editor of Transportmetrica B.

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Chair Vincent Wong
vincentw@ece.ubc.ca

IEEE COMMUNICATIONS SOCIETY

IEEE Information Theory Society

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BTS **IEEE Broadcast Technology Society**
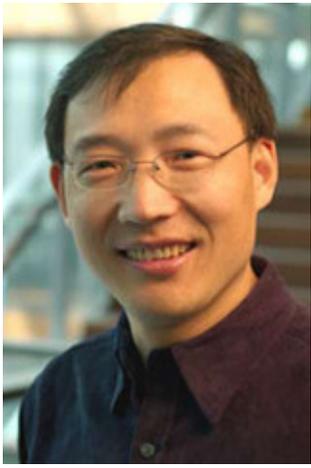
VTS

ITSS

Jt. Chapter BT-02/COM-19/IT-12/ITS-38/PHO-36/VT-06

Currently looking for volunteers

The IEEE Vancouver Joint Management Chapter is currently looking for volunteers

to take on the role of Vice Chair in the each of following Societies:

- IEEE Technology Management Society (TMC-14)
- IEEE Education Society (E-25)
- IEEE Professional Communications Society (PC-26)
- IEEE Society on Social Implications of Technology (SIT-30)

If you are interested in taking on the role of Vice Chair in one of these societies, please contact
mr.darrell.koskinen@ieee.org

Field robotics and assistive robotic systems in industrial applications

Dikai Liu
U of Technology Sydney

Monday 25 May

11am-noon

Room: Kaiser 2020

UBC

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

Current applications of robotics is distinguished from more traditional automation by the focus on robots that operate in relatively unstructured, dynamic, difficult and often hazardous environments. Over the past decade, a number of robotic systems have been deployed in highly challenging application areas including infrastructure maintenance, mining, cargo handling and healthcare. The first part of this presentation will focus on a range of autonomous robotic systems developed at the Centre for Autonomous Systems at the University of Technology Sydney, Australia. Key elements of these systems ranging from perception, mapping, control to learning will be described.

Advances in computing, sensing, actuation, mechanism design, control and machine learning have opened up the potential to build mobile manipulators that can coexist and cooperate with humans. Recent research has demonstrated the significant challenges that need to be overcome in order to make a robot effectively cooperate with a human, in contrast to building an autonomous robot that operates on its own. The second half of this talk will discuss a new assistance-as-needed paradigm for physical human-robot interaction and strength augmentation. It will present the research that uses an optimization approach with a musculoskeletal model to estimate the physical capabilities of a human worker, accounting for limb dynamics and external force interactions. Methods, advantages and limitations of implementing the musculoskeletal model-based assistance-as-needed paradigm will also be discussed.

Speaker: Professor Dikai Liu is Co-Director of the Centre for Autonomous Systems (www.cas.uts.edu.au) at the University of Technology Sydney (UTS), Australia. His main research interest is robotics including navigation, exploration, robot teams and physical human-robot interaction. He has developed many robotic systems for practical applications, including autonomous robots for steel structure maintenance, bio-inspired autonomous climbing robots for complex structure inspection, and assistive robots for augmenting human strength in industrial applications. Since 2005, his research has received three best paper awards (ISARC'2007, ISARC'2006, ISSNIP'2011-Biomedical Sensing and Sensors Symposium) and one best paper award nomination from international conferences; won five national and university awards (two EEAS'2013, 2012 UTS VC's Award for Research Excellence, 2006 Carrick Australia Citation for teaching, 2005 UTS Teaching Award); and been in finalists of four international and national awards (2013 IEEE/IFR IERA Award, 2013 AEEA, 2013 Australian Museum Eureka Prize, and 2005 AAEE). He is the recipient of three Australian patents. Dikai Liu received his PhD in 1997 from the Wuhan University of Technology, China.

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

IEEE Okanagan Subsection
Presents

Dr. William J. Blanke
Nok Nok Labs, Palo Alto, CA USA

iOS Interprocess Communication Security and the Universal Authentication Framework Protocol

Time & Date: 5 pm – 6 pm, May 26th, 2015.
Location: E103, Okanagan College, 1000 KLO Rd, Kelowna, BC V1Y4X8 (parking info).

Talk Abstract: The Universal Authentication Framework (UAF) protocol is a newly ratified, public key cryptography-based standard from the FIDO Alliance that supplants the common shared-secret login password. To achieve this, a UAF client on a user's device mints public key pairs on a per-relying party basis, and registers the public key with the relying party server. The UAF client then manages the private keys, which are used to sign server-generated authentication challenges. The prior-registered server-side public keys are then used to verify the signed challenge responses in order to authenticate the user session.

On the iOS platform, the UAF client can exist as a standalone app that services authentication requests from other apps (termed relying party apps in UAF parlance) via custom URL schemes for interprocess communication. This presentation first will identify the strengths of using custom URL schemes for communication between relying party apps and a standalone UAF client. Second, the presentation will analyze the threats to this approach and will illustrate their mitigation by the UAF standard.

Speaker Biography: I graduated with my BSE from Duke University (2015 NCAA champs! Go Blue Devils!), MS from the University of Virginia, and PhD from the University of Texas at Austin. I specialize in security software for Windows, iOS, and Android. Currently as the mobile lead architect at Nok Nok Labs, a Silicon Valley startup, I helped create the first FIDO enabled multifactor authentication client for Android and iOS. If you own a Samsung Galaxy S5, you might already be using our software! My security focus results from a decade as a technical director at PGP Corporation (a division at Symantec), where I developed the PGP product line for Windows, Windows CE, Windows Mobile, and iOS. Previously, I taught graduate and undergraduate courses as a lecturer of Computer Science at the University of the South Pacific, in Suva, Fiji Islands.

Refreshments will be provided. For further information please contact:
Youry Khmelevsky (email: youry at ieee.org). Registration Page:
https://meetings.vtools.ieee.org/m/34489

IEEE Okanagan Subsection
Presents

Ekram Hossain, IEEE Fellow
Dept. of Electrical and Computer Engineering,
University of Manitoba

Evolution toward 5G cellular: Key challenges and enabling technologies

Time & Date: 5 pm – 6 pm, July 13th and 14th, 2015
Location: E103, Okanagan College/UBCO, 1000 KLO Rd, Kelowna, BC V1Y4X8 (parking info).

Talk Abstract: The evolving fifth generation (5G) cellular wireless systems will have a multi-tier architecture consisting of macrocells, different types of licensed small cells, relays, and device-to-device (D2D) networks to serve users with different quality-of-service (QoS) requirements in a spectrum and energy-efficient manner. Starting with the visions and requirements for 5G cellular networks, the key challenges in the design and deployment of these networks will be discussed and several enabling technologies for these networks will be reviewed. In particular, concepts of tier-aware resource allocation, distributed uplink cell association and power control, cognitive spectrum access by network tiers, mode selection and power control for D2D communication, radio frequency (RF) energy harvesting-based D2D communication, and interference management in multi-tier cellular networks in presence of energy harvesting will be discussed.

Speaker Biography: Ekram Hossain (IEEE Fellow) is currently a Professor in the Department of Electrical and Computer Engineering at University of Manitoba, Winnipeg, Canada. He received his Ph.D. in Electrical Engineering from University of Victoria, Canada, in 2001. His current research interests include design, analysis, and optimization of wireless/mobile communications networks, cognitive radio systems, and network economics. He has authored/edited several books in these areas (http://home.cc.umanitoba.ca/~hossaina). Dr. Hossain serves as the Editor-in-Chief for the IEEE Communications Surveys and Tutorials, and an Editor for IEEE Wireless Communications. Also, currently he serves on the IEEE Press Editorial Board. Previously, he served as the Area Editor for the IEEE Transactions on Wireless Communications in the area of "Resource Management and Multiple Access" from 2009-2011, an Editor for the IEEE Transactions on Mobile Computing} from 2007-2012, and an Editor for the IEEE Journal on Selected Areas in Communications - Cognitive Radio Series from 2011-2014. Dr. Hossain has won several research awards including the University of Manitoba Merit Award in 2010 and 2014 (for Research and Scholarly Activities), the 2011 IEEE Communications Society Fred Ellersick Prize Paper Award, and the IEEE Wireless Communications and Networking Conference 2012 (WCNC'12) Best Paper Award. He is a Distinguished Lecturer of the IEEE Communications Society.

Refreshments will be provided. For further information please contact:
Youry Khmelevsky (email: youry at ieee.org). Registration Page: (will be added later)

Workshop & Site Tour at Zaber Technologies: Applications of Automation Technology

Host: Zaber Technologies Inc.

Co-hosted with IEEE Joint CS/RA/SMC Chapter in Vancouver Section

Date: Thursday, June 25, 2015
Time: 3:00pm – 6:00pm
Place: #2 – 605 West Kent Ave. N, Vancouver, BC V6P 6T7
Speaker(s): Applications Engineers, Sofia Moreno and Albert David
Website: www.zaber.com

Zaber designs and manufactures motorized devices and systems that can be used in automating many sub-micron positioning applications. Positioning technology is used in many different markets, including photonics and optics, life sciences, industrial automation, and microscopy.

This free seminar and site tour will give participants a chance to learn about Zaber, their R&D capabilities, and company history and culture. There will also be live product demos, Q&A with Zaber's engineers, and a site tour of our production facilities.

Registration is required for this event as seats are limited. Deadline for registration closes on Monday, June 22, 2015, 5:00pm PST.

To register, please email contact@zaber.com and provide your Name, Company, and Telephone number. If you have any food allergies, please also include a note in your email, as light refreshments will be served.

Agenda
2:50pm – 3:00pm – Arrive* and sign-in at Zaber Technologies (1st Floor)
3:00pm – 4:45pm – Introductions and presentation on Zaber
4:45pm – 5:30pm – Site tour
5:30pm – 6:00pm – Product demos and Q&A
*Free parking available.

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

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

Professor Ljiljana Trajkovic receives 2015 E. F. Glass Award

Professor Ljiljana Trajkovic of Simon Fraser University has been named the 2015 recipient of the E.F. Glass Western Canada Merit Award.

For exemplary and long service to the Vancouver Section and chapters

Dr. Trajkovic has a long record of service to the Vancouver Section. She currently serves as founding Chair of the IEEE Circuits and Systems Society joint Chapter of the Vancouver/Victoria Sections. She also serves as Vice Chair (Systems, Man, and Cybernetics Society) for the Joint CS/RA/SMC Society Chapter. Dr. Trajkovic received the plaque and citation during an awards ceremony held in Halifax on May 4th, 2015 as part of the 28th IEEE Canadian Conference on Electrical and Computer Engineering (CCECE 2015).

An official announcement was published in the recent issue of IEEE Canadian Review:
http://canrev.ieee.ca/cr73/ICR73_Final_Med_Res.pdf .

It will shortly be included in the recipients list published on the IEEE Canada website: http://www.ieee.ca/awards/recipients.htm .

The E. F. Glass award is presented annually by IEEE Canada. Recipients of this award are exceptional IEEE volunteers who are recognized for meritorious service in western Canada at the local IEEE Section and Area level.

For additional information about the E. F. Glass award and other IEEE Canada awards, please visit: http://www.ieee.ca/awards .

Dr. Ljiljana Trajkovic receives the 2015 E.F. Glass Award at CCECE 2015, presented by IEEE Canada President Dr. Amir G. Aghdam (left), and Awards and Recognition Committee Chair Dr. Geza Joos

IEEE VANCOUVER WINDOWS 10 HACKATHON

Event Recap and Thank You.

During the May long weekend the IEEE Vancouver Joint Computing Chapter hosted a hackathon at the beautiful SFU Burnaby Mountain campus. Teams of up to three individuals had 24 hours to hack together a Window 10 universal app.

We had 43 participants show up. Of which, the majority were undergrad students from SFU and UBC — a good mix from engineering and computer science.

Teams worked hard all night to hack together an app. However, in the end not every team made it. Noon the next day, twelve teams presented some very impressive apps.

First Place went to a team of three undergrads from SFU. **Second Place** was tied between a hacker and a team of two undergrads from SFU. **Third Place** went to a mixed team of our Past Chair, his son, and two undergrads from UBC.

I would like to thank the SFU Faculty of Applied Sciences for the use of their facilities and equipment and for being an event sponsor.

I would also like to thank Microsoft for generously providing event sponsorship, awesome prizes, and technical experts/mentors.

The Joint Computing Chapter is currently planning our next big event so stay tuned. If you have an ideas of events or would like to volunteer, email me at smakonin@ieee.org.

With sincerest gratitude,

S. Makonin

Dr. Stephen Makonin,
Chapter Chair.

3rd Place
Team: Juke Box

2nd Place (tied)
Solo: Team Art

1st Place
Team: Scrum Board

2nd Place (tied)
Team: Wifi Alibi