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A Donation for Applied Science Scholarships at UBC

Dr. Abdul M. Mousa, a Fellow of the IEEE and a member of the Vancouver Section, and his wife Barbara Aweryn, donated $160,000 to the University of British Columbia to create two scholarships in applied science. Dr. Mousa received his Ph.D. in Electrical Engineering from UBC in 1986 and before his retirement worked for BC Hydro for 30 years.

In appreciation of the benefits he got from using UBC libraries in his research, Dr. Mousa also previously donated $5,000 toward the construction of the Walter C. Koerner library in 1995. His name is included on the plaque in front of the Library.

Dr. Mousa was able to make a bigger donation to UBC towards the above mentioned scholarships when his finances enabled him to do so. He especially liked the approach of the UBC Foundation of preserving the capital and using the proceeds of investing it to fund scholarships in perpetuity. That method of providing long-term funding to charities is known in the Middle East as "Muslim Awkaf", and it has been successfully applied for 14 centuries. Dr. Mousa was aware of this since he is originally from Egypt. In order to provide other charities with the opportunity to receive such long term funding, Dr. Mousa spearheaded the creation of a public foundation named "Muslim Awkaf Foundation of B.C." This has been registered with Canada Revenue Agency and it has a web site at: www.MuslimAwkafBC.ca.

Other charities on Dr. Mousa's list will receive funding via that Foundation, and he hopes that thousands of members of the public will also use the Foundation to fund their preferred causes, including UBC, SFU, BCIT and other scholarships. Dr. Mousa believes there are many benefits to giving back to the community and invites interested persons to visit the foundation web site to find out the related details.

Mukesh Nagpal
BC Hydro

Lessons learned from a regional system blackout and restoration in BC Hydro

On September 6, 2016, the Peace Region in the Northeast BC Hydro system experienced a blackout after an intense thunderstorm subjected multiple 500 kV lines, sharing the same transmission corridor, to lightning strikes in the time span of about three minutes. These lines connect two large generating stations, regional loads and five non-utility generators to the rest of the BC Hydro system. The protection scheme on the first line tripped three-phase and initiated autoreclose as designed. However immediately after three-phase opening, high magnitudes of low-frequency (about 9 Hz) currents appeared in the line shunt reactor, causing a protection trip and aborting the autoreclose. Subsequent lightning strikes coupled with a pre-existing line outage disconnected both generating stations from each other as well as from the integrated system. The larger of the two generating stations and almost all the regional load formed an islanded subsystem, which eventually collapsed and blacked out. During the restoration of the subsystem, steady-state resonant overvoltages higher than 145% were experienced. The occurrence of blackouts can't be eliminated entirely because power systems are very complex, geographically dispersed and have many machines operating synchronously. However, the lessons learned from these unwelcome events can help to minimize the probability of recurrence. So, the intent of the presentation is to share the lessons learned by BC Hydro from forensic analysis of the disturbances leading to a regional blackout and describes the risk of unsafe overvoltages from a near power frequency resonant condition during the restoration process. A simple circuit analysis will be used to provide insight into the phenomenon of the low-frequency ringdown current which caused the reactor protection to trip and the near power frequency resonance which led to the overvoltages. Corrective actions implemented to prevent recurrence of a similar incident will also be presented.

Friday 17 November

12:00 to 1:00 PM

Center Auditorium

BC Hydro's Edmonds

6911 Southpoint Drive,

Burnaby,BC

About the Presenter:

Dr. Mukesh Nagpal is a Senior Member and distinguished lecturer of IEEE Power and Energy Society, Adjunct Professor at University of British Columbia, Vancouver, BC, Professional Engineer in the Province of British Columbia and Fellow of Engineers Canada. He received the Ph.D. and M.Sc. degrees in electrical engineering from the University of Saskatchewan, Saskatoon, SK, Canada. Currently, he is a Principal Engineer/Manager with the Protection and Control Planning Group within BC Hydro Engineering, Burnaby. He has more than 30 years of experience in electrical consulting, utility research, and power system protection. Dr. Nagpal has written about 50 technical papers on power system relaying and contributed to several ANSI/IEEE sponsored standards or guides on relaying practices.

In 2016, the Association of Professional Engineers of British Columba conferred Dr. Nagpal with its highest engineering honour, the R.A. McLachlan Memorial Award, for his exceptional leadership in developing practical and effective ways to connect renewables to the grid. He also received the Vancouver IEEE-PES Chapter's 2016 Outstanding Engineer Award.

PES Chapter Distinguished Lecture Topic:
Lessons Learned from a Regional System Blackout and Restoration in BC Hydro

This IEEE technical presentation hours may be considered towards Continuing Professional Development (CPD) credits.

Information
Joint Power & Energy Chair
Dipendra Rai
Dipendra.Rai@bchydro.com

Samir Iqbal
University of Texas

Distinguished Lecturer

06 November
Institute for Computing, Information and Cognitive Systems
Room 288

University of British Columbia

Engineering in Medicine & Biology Chair
rohling@ece.ubc.ca

Nanotechology for Biosensing

Dr. Samir Iqbal is an Associate Professor at the University of Texas at Arlington (UT-Arlington), USA. His work focuses on nanotechnology applications in solid-state sensors, developing novel nano-bio interfaces and cancer screening devices with high sensitivity and selectivity.

He is a Fellow of the Royal Socety of Chmeistry and a senior member of IEEE. He is a Distinguished Lecturer for IEEE-Engineering in Medicine and Biology Society (EMBS) and is on the EMBS Technical Committee on BioMEMS. He is also a member of American Physical Society, American Society of Mechanical Engineers, Biomedical Engineering Society, Biophysical Society, American Society of Mechanical Engineers, European Society for Nanomedicine, and Sigma Xi, to name a few.

He was a recipient of US National Science Foundation CAREER award in 2009. In 2013, UT-Arlington selected him for Honorable Mention for Best Academic Advisor Award. In 2014, the College of Engineering at UT-Arlington nominated him for President's Award for Excellence in Teaching. He was awarded Sigma Xi Outstanding Faculty Mentor Award in 2014. In November 2014, he was inducted into National Academy of Innovators by UT-Arlington. In 2015, he was given the Best Research Mentor Award. In 2016, he was awarded Research Excellence Award by his university.

EMB IEEE Engineering in Medicine and Biology

Bruce Sharpe
Singular Software

15 November

3:30pm

Simon Fraser University, Burnaby, BC
Room: WestMall Complex, room WMC 3210

Will audio be next to be steamrollered by deep learning?

Deep learning is a branch of machine learning that has led to amazing progress in long-standing problems in recent years. Famously, deep learning can classify images more accurately than humans, is on the verge of creating a working Babel fish, enables you to control your home by talking to a black cylinder, and will soon be driving your car for you.

So what fields will it conquer next? This talk proposes that recent results point to a coming revolution in audio processing tasks where traditional techniques have reached a plateau in their effectiveness. Tasks as universal as noise reduction and de-reverberation, to more specialized goals like speech generation and enhancement, and exciting new progress in the cocktail-party problem (speech separation).We will provide a survey of those tantalizing results, with examples, and will review the tools and techniques. There will be many rash predictions about how and where breakthroughs are likely to occur.

Speaker: Bruce Sharpe got his Ph.D. in Mathematics from UBC in 1984. He spent the early part of his career doing machine learning and data science before they were called that. None of that stuff worked back then and like many others, Dr. Sharpe abandoned all things AI for other software pursuits. Now that AI is kicking butt everywhere, he's interested again and is particularly hoping that deep learning makes a better hearing aid by the time he needs one.

IEEE Signal Processing Society

Information
Signal Processing Chair
Ivan Bajic
ivan_bajic@ieee.org

Sergio Saponara
University of Pisa

07 December

3:30 PM

TRIUMF Auditorium
4004 Westbrook Mall
UBC

Measurement performance of sensor systems towards autonomous vehicles.

The tutorial will focus on sensor and measurement systems for new generations of vehicles with driver-assisted/autonomous capability.

This is the main trend that is revolutionizing vehicles and mobility of people and goods, and is also making smart our cities. The economic and social impacts of this application field are huge. Worldwide every year 90 millions of vehicles are sold, but 1.25 millions of people are killed due to lack of safety. In US 3.1 billions of gallons of fuel are wasted due to traffic congestion.

Assisted driving and autonomous driving aim at increasing safety, at improving fuel efficiency and our lifestyle by avoiding traffic congestion, at ensuring mobility for elderly and disabled people (inclusivity).

The interest in this research subject is demonstrated by the huge investments of companies like Google, Intel, Tesla, Uber, Ford, GM, to name just a few, and by technology alliances, e.g. between BMW and Intel, planning autonomous cars for 2021.

A convergence between automotive and ICT/Electronics industry is foreseen in the near future. An example of this convergence is the 5G Automotive Association http://www.5gaa.org/, which includes all main cars' manufacturers, telecom service providers, electronic industries, measurement system providers.

THIS EVENT IS TENTATIVE

Jacob Scharcanski
Federal University of Rio Grande do Sul

November 23

3:30 PM

TRIUMF Auditorium,
4004 Westbrook Mall
UBC

Computer vision in medical imaging measurements: making sense of visual data.

In this talk, we discuss how computer vision can facilitate the interpretation of medical imaging data, or help making inferences based on models of such data. In order to illustrate this presentation, several applications of medical imaging measurements and modeling are discussed, focusing in areas such as the correction of imaging artifacts that may occlude visual information, tumor detection, modeling and measurement in different imaging modalities.

When interpreting medical imaging data with computer vision, usually we are trying to describe anatomic structures (or medical phenomena) using one or more images, and reconstruct some of its properties based on imaging data (like shape, texture or color).

Actually, this is an ill-posed problem that humans can learn to solve effortlessly, but computer algorithms often are prone to errors. Nevertheless, in some cases computers can surpass humans and interpret medical images more accurately, given the proper choice of models, as we will show in this talk.

Information
Joint Applied Physics Chair
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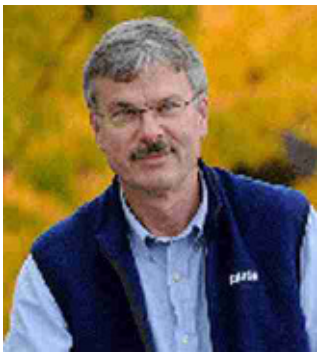

Peter Danielson
UBC

Thursday 23 November

18:00 - 20:30

SFU Downtown Campus
515 West Hastings Street

Room 2945
(McLean Management Studies Lab)

RSVP to
mailto:darrell.koskinen@telus.com

The IEEE Society on Social Implications of Technology presents:

How intelligent agents disrupt human ethics: driverless car and sexbots

New artificial intelligent agents, such as driverless cars, disrupt our moral judgments. We present evidence from a series of robot ethics surveys revealing surprising moral judgments with a disturbing tendency: when robot agents are involved in harmful interaction, the remaining humans, often the victims, get blamed. We have extended these results to factory automation and sex robots. The talk is interactive; (consenting) audience members, protected by pseudonymous devices (provided), will contribute to our ongoing computer-mediated experiments on the ethics of new artificial agents.

Presenter

Peter Danielson is the Mary and W. Maurice Young Professor (Emeritus) of Applied Ethics at the Centre for Applied Ethics, School of Population & Public Health, University of British Columbia. He is a member of the Institute for Computing, Information and Cognitive Systems and taught in the Cognitive Systems Program. Danielson studied philosophy at the University of Michigan (BA), Princeton University and the University of Toronto (PhD).

He is the author of Artificial Morality (Routledge, 1992) and the editor of Modeling Rationality, Morality, and Evolution (Oxford University Press, 1998). Recent papers focus on robot ethics and the methodology of public participation in ethical decision-making.

Danielson's ongoing research program, Artificial Morality, takes a cognitive systems approach to ethics. We use game theory to model basic ethical problems and experimental surveys to explore human responses to interactions with various artificial agents. Our research group's experimental ethics platforms have been funded by Genome Canada and SSHRC, forming the basis of many papers by researchers in animal welfare, robotics and assistive technology, genomics and stem cell research.