

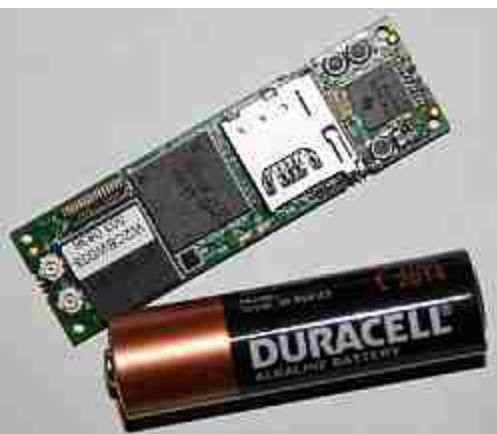


Computer

World's smallest open source computer

Don Anderson
Gumstix San Jose
Monday 09 November 700 - 900pm
SW3-1750 BCIT

Gumstix of San Jose, California makes the world's smallest open source computer and has design engineering customers located in 50 countries worldwide. EVP of Engineering Services Don Anderson presents Gumstix' latest TI OMAP-based technology in an evening discussion and open forum at BCIT.



Speaker: Don Anderson - EVP Engineering Services leads all Gumstix engineering services efforts with design engineering companies worldwide. To Gumstix, Don brings more than twenty-years of experience in technology companies including Network Associates (now McAfee), Deersoft, netFuturi, Voice Mobility and twelve years at IBM. He holds a Bachelor of Applied Science



in Mechanical Engineering from the University of British Columbia in Vancouver, Canada and has been a registered Professional Engineer with the Association of Professional Engineers and Geoscientists of British Columbia (Canada) since 1985.

Cosponsor: Joint Communications
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Control Systems

System identification approach to non-invasive central cardiovascular monitoring

Dr. Jin-Oh Hahn
University of British Columbia
Thursday 19 November 1500 -1600
Electrical & Computer Engineering
2332 Main Mall - Kaiser 2020, UBC

This presentation will present a novel system-identification-based method for central cardiovascular monitoring problem, one of the most critical problems in the biomedical engineering area. The cardiovascular disease is one of the most prevalent diseases in the world. In US for instance, approximately 1/3 of all the adult population is suffering from heart-related diseases such as hypertension, coronary heart disease and stroke, and it has been #1 single cause of death in the 20th century. Therefore, there are a plenty of opportunities to help out this population by developing cardiovascular monitoring methods and devices.



We view the cardiovascular system as a class of dynamic wave propagation system and present a method to identify its dynamics and reconstruct the blood pressure and flow signals near the heart by processing circulatory signals measured at extremity locations of the body, e.g. arm, leg, finger and so on. As a technical basis for the proposed method, we provide a condition under which this class of systems is identifiable. We also show that this condition can be achieved by appropriate system design, including the selection of sensor location and sampling frequency. The reconstructed signals may replace the direct invasive measurements currently widespread in clinical practice, and further investigation of the method's potential clinical utility is warranted.

Speaker: Dr. Jin-Oh Hahn received BS and MS from the Department of Mechanical De **System..**

Computer

Estimating effort and cost in software projects - ISBSG a multi-organizational project data repository for project estimation and benchmarking

Pierre Bourque
Université du Québec



Distinguished Lecture

Thursday 29 October 400pm
Kaiser 2020/2030, 2332 Main Mall, UBC



The construction of an estimation model, whatever estimation method is used, usually requires a set of completed projects from which an estimation model is derived and which is used thereafter as the basis for the estimation of future projects. Until fairly recently, for those organizations without their own historical data sets for building estimation models themselves, and who could not afford the long lead time to do so, few alternatives were

widely available. The International Software Benchmarking Standards Group (ISBSG) is dedicated to the development and management of a multi-organizational repository of software project data. This talk presents the resources available from ISBSG and how to leverage them in your own context for benchmarking and estimation purposes. An example of building project duration models and a case study of a "reality check" of estimates developed otherwise will illustrate how ISBSG can be used in your projects.

Speaker: Pierre Bourque is an associate professor and the director of a professional master's degree program in software engineering at École de technologie supérieure, Université du Québec, Canada. He is coeditor of the 2001 and 2004 versions of the Guide to the Software Engineering Body of Knowledge (SWEBOK) project, sponsored by the IEEE Computer Society and funded by numerous industrial partners. The SWEBOK Guide is recognized as an ISO Technical Report. He is also coeditor of the upcoming 2010 version of the SWEBOK Guide. He is currently a member of the Computer Society's Professional Activities Board and acts as liaison to the Educational Activities Board. He is a member of the Distinguished Visitor Program and was the recipient of an Outstanding Contribution Award from the Computer Society in 2001. He is currently running as a candidate to be **Estimating..**

Joint Communications

Borrowing from mathematics to extend the limits of practical wireless systems

A series of four consecutive Thursday lectures will be held at MCLD 418 - Dept. of Electrical and Computer Engineering, UBC MacLeod Building, 2356 Main Mall

IEEE Vancouver will present a series of four lectures on the state-of-the-art approaches to the design of multiple antenna wireless systems.

These design approaches are applicable to scenarios with idealized assumptions of perfect channel state information (CSI), and most importantly to practical scenarios with inevitable imperfections of the CSI. Such imperfections can cause severe degradation to different performance measures, especially in multi-user environments. The goal of this series of lectures is to provide a unified exposition of these design approach, their underlying mathematical tools, and their robustness to the uncertainty of CSI, a feature that can significantly mitigate the limiting impacts of this uncertainty.

Part I - Point-to-point systems

Thursday 22 and 29 October 400 - 515pm

The first part of the series will present a unified design framework for linear (e.g., beamforming) and non-linear MIMO transceivers (e.g., transceivers with Tomlinson-Harashita Precoding or Dirty Paper Coding, and those with Decision Feedback Equalization). It uses concepts from Majorization theory and convex optimization theory to develop optimal closed-form designs for a very broad range of design objectives. Furthermore, the framework extends to communication schemes with limited CSI using from Majorization theory and Grassmann packings.

This part will include a tutorial presentation of three useful mathematical tools: Majorization theory, Grassmann packings, and convex optimization. Portions of this part of the series were presented as a tutorial at ICASSP 2009 conference.

Part II - Multi-user systems

Thursday 05 & 12 November 400-515pm

The second part of the series will cover system design in a broad range of multi-user communication applications. In particular, both broadcast channels and multiple access channels will be considered, and design

approaches for both linear and non-linear transceivers will be developed. It will consider scenarios with perfect CSI as well as those with imperfect CSI using different models CSI uncertainty (e.g., statistical models and bounded models). For each of these models of channel uncertainty, a variety of transceivers design formulations will be considered, including the class of transceivers that optimize performance under transmitter power constraints, and the class of transceivers that minimize the transmitted power required to satisfy the QoS constraints specified by the users. Minimax robust designs and statistically robust designs (outage-based or probabilistically-constrained) will be presented for each class of multi-user transceivers.



how these concepts can be applied to multi-user ultra-wideband communications (UWB) and in spectrum sharing in cognitive radio.

Similar to the first part, this part will include a tutorial introduction to robust convex optimization. Portions of this part of the lecture series were presented as tutorials at the 7th Annual Conference on Communication Networks and Services Research (CNSR2009), Moncton, New Brunswick, Canada (sponsored by IEEE Communications Society and the Association of Computing Machinery), and at the Sixth International Symposium on Wireless Communication Systems (ISWCS2009), Sienna, Italy.

Lecturer: Michael Botros Shenouda received the B.Sc. (Hons. 1) degree and the M.Sc. degree in Electrical Engineering from Cairo University in 2001 and 2003, respectively. He received the Ph.D. degree from McMaster University, Canada in 2008. His main areas of interest include wireless and MIMO communication, robust and convex optimization, and signal processing algorithms. He is also interested in majorization theory and its application in the unification of designs for non-linear MIMO transceivers. He presented some of his work in these areas as tutorials at ICASSP 2009, CNSR 2009, and ISWCS 2009.

Borrowing..

Institute for Computing, Information & Cognitive Systems Distinguished Lecture Series

Realizing programmable matter

Seth Copen Goldstein,
Carnegie Mellon University
Thursday 22 October 330-500pm
Room 110 Hugh Dempster Pavilion
6245 Agronomy Road UBC Vancouver, BC
The Claytronics Project is working on realizing programmable matter. Programmable matter is any substance that can be programmed to effect a change in one or more of its physical characteristics. In claytronics, the substance is a collection of individual units, each of which can sense, compute, communicate, and actuate. The long-range goal for claytronics is for the collection to behave as a coherent mass and mimic, with high fidelity and in 3-dimensional solid form, the look, feel, and motion of macro-scale objects. In this talk, I will describe possible applications for claytronics and some of the hardware and software challenges.

Speaker: Seth Copen Goldstein is an Associate Professor in the School of Computer Science at Carnegie Mellon University. He received his M.S. and Ph.D. in Computer Science at the University of California at Berkeley. His research focuses broadly on ensembles: large collections of interacting agents. In the area of reconfigurable computing, he has investigated compiling high-level programming languages directly into configurations that can harness the large ensemble of gates for computing. Later work has involved harnessing ensembles of molecules in the area of molecular electronics. Currently, his main focus is on realizing claytronics.

Computer (and human) perfection at checkers

Jonathan Schaeffer
University of Alberta
Thursday 26 November 330-500pm
Room 110 Hugh Dempster Pavilion
6245 Agronomy Road UBC Vancouver, BC
In 1989, the Chinook project began with the goal of building a computer program capable of winning the human World Checkers Championship. The reigning human champion was almost perfect, having rarely lost a game in over forty years. To do better required the computer to be perfect. In effect, one had to solve checkers. Little did we know that our quest would take 18 years to complete. What started out as a research project quickly became a personal quest and an emotional roller coaster. This talk, by the creator of **Computer..**

Message from the Chair

Do you or someone you know have photographs, documents or even memories to share regarding the history of IEEE Vancouver Section? Our upcoming Section Centennial in 2011 is providing us with an opportunity to look back and reflect on an amazing century of progress in Electrical and Computer Engineering and its impact on British Columbia. We have already begun to identify and propose local and regional historic sites for recognition by the IEEE Milestones program. And we have already begun to develop a framework for capturing highlights in the Section's history on the web and perhaps elsewhere. However, we need your input! If you can help, please contact me at dmichelson@ieee.org.



These are exciting times for IEEE Vancouver Section. We are restarting our Continuing Education Program and are launching a local presence for the IEEE Electromagnetic Compatibility Society, IEEE Microwave Theory and Techniques Society and IEEE Photonics Society. We have restarted our Conferences Committee with an aim to both attracting IEEE conferences to Vancouver and providing local support to them once they're here. We are redoubling our efforts to help our three student branches to develop strong programs and are moving our Section finances to the IEEE Concentration Banking system in order to reduce the workload of our Section treasurer. There has never been a better time to get involved with the Section and we look forward to your participation in Section activities in coming months.



Come celebrate
with us the
125th anniversary of IEEE!

IEEE Vancouver Section Annual Social Event

Tuesday 24 November 2009 7:00 - 10:00pm
Vancouver Playhouse Theatre
(Southeast corner of Hamilton and Dunsmuir, Vancouver)

We have an exciting evening planned for our members and friends. Please join us for a delicious hors d'oeuvres pre-show reception and good conversation in the Vancouver Playhouse Theatre's Salons. The pre-show reception will be followed by **DIRTY ROTTEN SCOUNDRELS** - a Broadway Hit Musical performance - as well as a dessert reception during the intermission.†

For more information and to reserve your seats please contact Mazana Armstrong at events-vancouver@ieee.org.

Attendance is limited, so please book early.

6:45pm	Doors open
7:00pm	Pre-show Reception in the Salons
8:00pm	Dirty Rotten Scoundrels performance
9:00pm	Intermission: Dessert Reception in the Salons (15 min)
10:00pm	Performance ends

† Hors d'oeuvres, desert and coffee/tea will be served during the reception and the intermission. Drinks will be available at the cash bar.

For more information on DIRTY ROTTEN SCOUNDRELS please visit: <http://www.vancouverplayhouse.com/current-season/2009/dirty-rotten-scoundrels.php>

TICKETS:

Early bird before November 1st:
\$20 students and life members
\$25 members
\$30 non-members

Regular on or after November 1st:
\$25 students and life members
\$30 members
\$35 non-members

Host an IEEE Conference in Vancouver!

Tourism Vancouver - Be a Host

"Be a Host" is an innovative sales and marketing initiative designed to identify and support local members of our community in bringing their association or corporate national and international meetings to Vancouver.

Tourism Vancouver has worked closely with numerous local hosts from the Engineering field to bring IEEE Conferences to the city including:

- IEEE Engineering in Medicine and Biology Society - 2008 International Conference
- IEEE Computer Society, 2009 International Conference on Software Engineering

"Thank you to both of you at the Vancouver Tourism for all your help. Having 12 hotel bids in hand through your distribution of the notice helped a lot" - Professor Glenn Chapman, SFU School of Engineering, International Symposium on Defect and Fault Tolerance in VLSI Systems 2011, IEEE Computer Test Technology Technical Council

For more information on "Be a Host" and how Tourism Vancouver's can assist you, please contact Kathy Nicolay, Be a Host Coordinator at 604-631-2886 or email at knicolay@tourismvancouver.com <<mailto:knicolay@tourismvancouver.com>>
Online at: http://www.tourismvancouver.com/meetings/be_a_host/newsletter_be_a_host



..System

sign and Production Engineering at Seoul National University in 1997 and 1999, respectively, and PhD from the Department of Mechanical Engineering at Massachusetts Institute of Technology in 2008. He is currently a post-doctoral research fellow in the Department of Electrical and Computer Engineering at University of British Columbia. During 2008-2009 Dr. Hahn was a process engineer at the Lam Research Corporation, and during 2001-2004 he was a full-time academic instructor in the Department of Mechanical Engineering at Republic of Korea Air Force Academy. During 1999-2000, he was a visiting research scientist in the Department of Mechanical Engineering at the University of Minnesota. Dr. Hahn was a recipient of the Korean Government Overseas Scholarship during 2004-2007, and he also received a Gold Prize from the Samsung Human-Tech Thesis Competition in 2008. His research interest lies in the area of condition monitoring and control of biomedical and mechanical systems, including physiologic monitoring, clinical anesthesia, and automobile safety and power transmission systems

Info: Control Systems chair Ryoza Nagamune nagamune@mech.ubc.ca

..Estimating

member of the Board of the Governors of the IEEE Computer Society. Bourque received a PhD from the University of Ulster (Northern Ireland) on the topic of the maturation of the software engineering discipline and profession. Prior to his academic appointment, he worked in software engineering, data modeling, and database design at the National Bank of Canada from 1987 to 1995.

Info: Computer chair Sathish Gopalakrishnan sathish@ece.ubc.ca

..Borrowing

Mr. Botros Shenouda was awarded an IEEE Best Student Paper Award at ICASSP 2006, and was also a finalist in the IEEE Best Student Paper competition at ICASSP 2007. He was the recipient of two provincial scholarships during his PhD degree. Dr. Botros Shenouda has also received the National Sciences and Engineering Council of Canada (NSERC) Postdoctoral Fellowship, and he holds Killam Postdoctoral Fellowship at the University of British Columbia.

Info: Joint Communications chair Alon Newton, anewton@ieee.org

..Computer

Chinook, is about the interplay between people and technology, the story of man versus machine for supremacy at checkers. To appreciate this story, no detailed knowledge of computer science or checkers is needed.

Speaker: Jonathan Schaefer is a professor of Computing Science at the University of Alberta, and is currently the Vice Provost and Associate Vice President for Information Technology. He is the iCORE Chair in High-Performance Artificial Intelligence Systems. His research in artificial intelligence is best known for his work on computer games, including classic games and commercial video games. He is the creator of the checkers program Chinook, the first program to win a human world championship in any game. In 2007, he announced that he had solved checkers. He is a co-founder of BioTools (bioinformatics software and the popular Poker Academy).

ICICS Distinguished Lectures are free

