香港城市大學
City University of Hong Kong

CITY UNIVERSITY OF HONG KONG

SPEAKERS

Dr. Alex Chengyu Fang

Assistant Professor
Department of Chinese, Translation and Linguistics
City University of Hong Kong

Biography

Alex Fang is based at the Department of Chinese, Translation and Linguistics, City University of Hong Kong and lectures on topics devoted to corpus linguistics, computational linguistics and machine translation. He currently supervises 6 PhD students. He has published widely and his most recent monographs include English Corpora and Automated Grammatical Analysis (2007) and Contributions of Syntax to Terminology Extraction (2010). He is closely involved with ISO TC37/SC4 in projects on standards for linguistic annotations and is also an expert member of the China National Technical Committee for the Standardization of Terminologies and Language Resources. He was previously Deputy Director of the Survey of English Usage, University College London.

Alex is the founding director of the Dialogue Systems Group (http://dsg.ctl.cityu.edu.hk), a research lab with 10 researchers and 12 affiliated international scholars. The lab performs corpus-based investigations into human speech and language and aims to develop linguistically motivated computational systems for automatic speech and language processing. In particular, it is currently developing man-machine spoken dialogue systems accessible via both the telephone and the Internet. At the same time, research is also being conducted at the DSG into corpus construction, corpus annotation, and dialogue act analysis.

Alex is also the founding president of The Language Automation Company (www.languageautomation.com).

Abstract

Linguistics, Language Industry and Language in Industry

Linguistics is the scientific study of human language in terms of form, meaning and context. With the exponential growth of information, computational approaches to linguistic analysis have constituted a core research area that is collectively known as computational linguistics and have been the major driving force for advances in language engineering. Practical needs such as automatic text retrieval, natural language understanding and text summarization have led to fast development of the language industry. In this presentation, we describe the research and development of speech and language technologies at the Dialogue Systems Group, based at the Department of Chinese, Translation and Linguistics, City University of Hong Kong and demonstrate how academic research can be adapted to suit practical needs arising both from the local community and from the industry. In particular, we showcase an interactive spoken dialogue system that has been designed to facilitate speech-driven information retrieval based on terminologies, the processing of which has associated the Group internationally with the industry and professional services.

Professor Daniel Fu Keung Wong

Professor
Department of Applied Social Studies

City University of Hong Kong

Biography

Professor Daniel Fu Keung Wong is a social work academic at the Department of Applied Social Studies, City University of Hong Kong. Professionally and academically, Professor Wong is a qualified cognitive therapist and conducts evidence-based research in indigenizing clinical intervention approaches in working with people with mental health concerns. His knowledge transfer activities revolve around: providing training to frontline health care professionals to deliver cognitive behavioural therapy to clients with mental health problems and running public health care prevention programmes and groups for people with mental health concerns. He has also written a number of self-help books and worker's manuals in Chinese for frontline health care workers and the general public in Hong Kong. Currently, he is the coordinator of Knowledge Transfer Committee of the College of Humanities and Social Sciences, City University of Hong Kong.

Abstract

Knowledge Transfer in Humanities and Social Sciences: What Are They?

One question that often baffles scholars in the fields of social sciences and humanities is: what constitutes a knowledge transfer activity in these fields? In sciences, knowledge transfer activities may involve the design of a product which has high commercial values and may in turn resulting in patenting and licensing of the product. In humanities and social sciences, the object of the transfer is not necessarily a tangible product. Instead, it may take the form of a contribution that helps develop and improve services, decision-making processes, and cultural events and products. Indeed, many of these activities revolve around the provision of advice, through consultancies and informal communications. In this presentation, drawing on the knowledge transfer activities of the College of Humanities and Social Sciences, City University of Hong Kong, the author would cite examples of the activities to illustrate the possible parameters of knowledge transfer in humanities and social sciences. Specifically, it aims to delineate the possible nature, processes and outcomes of knowledge transfer activities in humanities and social sciences. In addition, it also attempts to highlight the difficulties academics face while engaging in knowledge transfer activities in humanities and social sciences in educational institutions in Hong Kong.

Dr. Annis Lai-chu Fung

Assistant Professor
Department of Applied Social Studies
City University of Hong Kong

Biography

Dr. Annis Fung Lai-chu is an Assistant Professor in the Department of Applied Social Studies, mainly teaching social work and counselling courses. She won the 2009 Teaching Excellence Award from City University of Hong Kong, and in 2008, received a research award entitled, Outstanding Project Award, from the Quality Education Fund (QEF) of the Education Bureau. QEF selected 20 outstanding projects from the more than 7,000 funded from 1998 to 2008. Dr. Fung secured a five-year project, Project C.A.R.E. (Children and Adolescents at Risk Education, 有教無『戾』--- 校園欺『零』計畫), from QEF. It has been funded three times from September 2006 to August 2011 for a total of $11 million. This pioneer research project addresses youth aggression and peer victimization of school bullying in Hong Kong. Publications based on this project have appeared in top ISI international journals. In 2010, Dr. Fung received the 60th Anniversary Distinguished Alumni Award from the Department of Social Work and Social Administration at The University of Hong Kong. She was honoured for her outstanding contributions to social work research and education.

Abstract

Project C.A.R.E.: Primary and Secondary Hong Kong Students' Aggression and Peer Victimization of Bullying

Project C.A.R.E. (Children and Adolescents at Risk Education), spearheaded by City University of Hong Kong (CityU) and directed by Dr. Annis Fung Lai-chu (Assistant Professor-Department of Applied Social Studies), received three rounds of funding of $11 million from the Quality Education Fund (QEF) from September 2006 to August 2011. 77 secondary and primary schools participated and 158 schools are on the waiting list.
This was a ground-breaking project grounded in theory and empirically driven ecological interventions to reduce student reactive and proactive aggression, and aggressive and passive victimization of school bullying. Employing surveys and individual interviews, the project identified high-risk aggressors and victims from more than 33,000 students. Interventions included students, parents, and parent-child groups, and a "Harmony Ambassador Scheme." Eight to 10 sessions of Cognitive-Behavioural group therapy were offered. Persons in the Ambassador program interacted with elder peers with positive and pro-social behavior through outdoor and experiential activities.

Behavioural changes were assessed by self-report, teachers, and parents at pretest, posttest, and following treatment, supporting the program's long term effectiveness. Significant improvement was found in the proactive aggressors' bullying and reactive aggressor's impulsively aggressive behaviour, and the alleviation of emotional problems (e.g., depression, anxiety, anger). Aggressive and passive victims also indicated reductions in physical and verbal victimization, property attack, and social manipulation, and increases in school security and confidence establishing interpersonal relationships. Results can strengthen training for teachers, counsellors, social workers, police officers, and psychologists to enhance their skills to address youth aggression. Six sets of manuals, 11 booklets, and DVDs were published for this purpose. The public benefited from the Harmony School Competition, drama competition, slogan writing project, open forums, and radio and television programs promoting "zero" violence and anti-aggressive cultures in communities. Internationally, the project led to publications in top international journals and presentations at worldwide conferences.

Dr. Tak-yan Lee

Associate Professor
Department of Applied Social Studies
City University of Hong Kong

Biography

Dr. Tak-yan LEE is an Associate Professor in the Department of Applied Social Studies at the City University of Hong Kong. His primary teaching and research interests are in social work, group work, positive youth development, and practice teaching and learning. He is currently one of the co-principal investigators of a large scale applied research study on the development and evaluation of a positive youth development program titled "Positive Adolescent Training through Holistic Social Programmes" (Project P.A.T.H.S., since 2005) for junior secondary school students in Hong Kong. His recent research covers adolescent prostitution, positive youth development, parent-child communication, parental control, child and adolescent resilience, youth empowerment, runaway adolescents, youth and the cyber world, as well as social work practice teaching and learning. He has co-edited 5 books, 36 book chapters, 11 manuals and handbooks, published 8 teaching DVDs, and 56 articles in professional and international refereed journals.

Abstract

Towards Enhancement of Professional Practicum Teaching and Learning: A Conceptual Model

With no exception, all universities in Hong Kong will provide a new curriculum that emphasizes general education and allows wider choices from different disciplines to nurture an academic curiosity that is as deep as it is broad under the four-year normative curriculum in 2012. On one hand, universities aim to provide a holistic learning experience to produce well-informed citizens as well as leaders, and to prepare well-trained professionals with very practical knowledge to solve today's problems. On the other, a capstone course which will encourage students to engage in research is commonly found in most undergraduate programmes. Some universities aim to create a culture of inquiry, innovation, and discovery while all emphasize that the curriculum will cultivate critical thinking and a concern for society, particularly through service learning.

Economic and social environments are changing at an ever increasing pace in modern cities around the world. It is particularly so in Hong Kong. One of the challenges facing higher education in Hong Kong is that most graduates are being expected to demonstrate different types of competence in handling complicated occupation-related tasks. In response to such a drive, universities provide internship requiring integration of knowledge from different disciplines exposing them to knowledge and skills required for the job. This trend, together with the burgeoning evidence based practice movement in helping professions, highlight the importance of thinking carefully about what knowledge is, how it can be gained, how it should be used, and what the implications of different views are for clients, professionals, researchers, and taxpayers (Gambrill, 2005).

Against this background, this paper focuses on practicum teaching and learning for the helping professions and a conceptual framework on professional practicum teaching and learning is presented. The model integrates the perspectives from the university, the profession, the practicum agency, the student, and the practice teacher. Crucial issues will be highlighted and discussed.

Professor Sik Hung Ng

Chair Professor of Social Psychology
Department of Applied Social Studies

City University of Hong Kong

Biography

Sik Hung Ng, PhD (Bristol) and FRS (New Zealand), is Chair Professor of Social Psychology at the City University of Hong Kong. He co-founded the New Zealand Institute for Research on Ageing (1999), and served as the President of the Asian Association of Social Psychology (2007-2009) and a member of the Provisional Minimum Wage Commission of the Hong Kong SAR Government (2009-2010). He has published 5 books and over 90 international journal papers. His most recent book, co-edited with Stephen Cheung Yan-leung and Brahm Prakash, is Social Capital in Hong Kong: Connectivities and Social Enterprise.

Abstract

Transfer of Ageing Knowledge and Myths

"Ageing" is a socially constructed representation of apparent neural-biological and psycho-social changes in advanced age. The construction is open to the influence of not only science, but also folklores, religions, the fear of death, and the politics of "Who should care for the aged amongst us?" Knowledge of what ageing is and what it should be is highly contestable and often mixed with myths. Although ageing research has been relatively successful in "debunking" some of the older myths, it has the potential of creating inadvertently new myths of its own. The present talk addresses some of the modern myths and the need for a broader and more critical approach to the transfer of ageing knowledge.

Dr. Alice Ming Lin Chong

Associate Professor
Department of Applied Social Studies
City University of Hong Kong

Biography

PhD. (HKU), M.Sc.(Econ.)(UWales), B.S.Sc. (CUHK), PGD (E.Mgt) (HKCSS & CUHK), P.Mgr. (Canada), R.S.W. (HK).

Dr. CHONG, Ming-Lin Alice is the Associate Professor of the Department of Applied Social Studies, College of Liberal Arts and Social Sciences, City University of Hong Kong. She has been awarded her PhD. from the Department of Social Work and Social Administration, University of Hong Kong. Her areas of teaching are counseling, social work and human service management. Her research interests focus mainly on social gerontology (e.g. long term care, psychotherapy, end of life issues), as well as teaching and learning in higher education. Her publications appear in many academic journals, such as Ageing & Society, Social Work in Health Care, Death Studies, Palliative Medicine, Biological Psychology, among others.

Dr. Chong has established very strong professional connection with the community and is currently serving on the management board of several non-government organizations. She is appointed by the Hong Kong SAR Government to a few high-level governmental committees, such as the Elderly Commission which gives advice to the government on policy and services for older people; and to the Community Investment & Inclusion Fund Committee which provides seed money for the promotion of social capital in Hong Kong.

Abstract

Enhancing First Year Transition through a Student-centred, Non-credit Bearing Co-curricular Program

Higher education in Hong Kong is faced with high graduation rate but low motivation in learning, which is contrary to what happens in the West. To enhance first year students' learning motivation and to facilitate their adjustment to university life, a student-centred, non-credit bearing co-curricular program named "Project X for Learning Excellence" (Project X) has been specially designed and implemented since 2008/09 by the Department of Applied Social Studies of the City University of Hong Kong. The following experiential learning activities were organized: (1) small group program-specific learning communities to foster social support, open exchange and self-reflection; (2) academic skills training workshops supported by small group reflection and discussion; (3) student advising through training on goal-setting and individual/group consultation; (4) student-initiated, discovery-oriented community awareness projects (e.g. 3-3-4 project with a secondary school, equal opportunity project etc.) to connect classroom learning with community issues. Since students learn better through peers than teachers, a series of training, support and recognition was provided to student mentors to enhance their generic skills (e.g. management of task/self/others) so that they could be peer tutors. Longitudinal study found participation in Project-X activities positively associated with CGPAs and psycho-educational competence including self-efficiency, social development and leadership.

Dr. Taedong Lee

Assistant Professor
Department of Asian and International Studies
City University Hong Kong

Biography

Taedong Lee is an assistant professor in the Department of Asian and International Studies in City University of Hong Kong. Lee has worked on sub-national environmental governance with a variety of topics and methods. In his dissertation, "Global Cities and Climate Change," he examines conditions entailed in cities' participation in international climate change networks, collaboration patterns in a global network, and variations in city-level climate change policies with multilevel modeling, social network analysis and case studies of five cities in the U.S. and Korea. His studies including, "Local Climate Policy and Green Building,""Global Cities and Climate Change Networks," and "Act Locally Link Globally: Translocal Collaboration in C40 Climate Leadership Group" are under reviewed in top political science and public policy journals. He also develops a book project to provide climate change policy guideline for mayors, public officials and citizens. Main strengths of Dr. Lee lie in collecting and analyzing quantitative data with modeling and visualizing skills including the GIS and multilevel analysis. His articles have appeared in journals including *Voluntas* and *Nonprofit and Voluntary Sector Quarterly.*

Abstract

Green Building as a Solution for Better Life in Hong Kong

Sustainably built and energy efficient buildings are an international phenomenon that is driven by policy and market forces. These "green buildings" have quickly become an important component of the modern global city's skyline and business recruitment materials. My speech talks about the role of policy and business community in fostering green building using findings from analyses of 600 US cities. Hong Kong government and its Environmental Protection Department (EPD) set an ambitious GHG emission reduction target by conducting measures for maximizing energy efficiency. In order to maximize energy efficiency, the EPD proposed promotion of building energy efficiency and building environmental management system. Given that 67% of Hong Kong's total GHG emissions come from electricity generation and 90% of electricity consumption is related to buildings, improving building energy efficiency is imperative to save energy, costs and the environment. In this regard, it is crucial to assess how other cities in the US integrate green building policy into climate change and energy policy. Drawing lessons from US city level policy, I argue that political commitment and "policy by doing" are key factors driving the proliferation of green buildings.

Professor Jeffrey Shaw

Chair Professor
Dean of School of Creative Media
City University of Hong Kong

Biography

Professor Jeffrey Shaw is internationally recognized as a leading figure in new media art since the 1960's. In a prolific oeuvre of widely exhibited and critically acclaimed works he has pioneered and set benchmarks for the creative use of creative media in the fields of virtual and augmented reality, immersive visualization environments, navigable cinematic systems and interactive narrative. Shaw was the founding director of the ZKM Institute for Visual Media Karlsruhe (1991-2002), and in 2003 he was awarded an Australian Research Council Federation Fellowship to co-found and direct the UNSW iCinema Centre for Interactive Cinema Research. Since 2009 Shaw is Chair Professor of Media Art and Dean of the School of Creative Media at City University in Hong Kong, as well as Director of the Applied Laboratory for Interactive Visualization and Embodiment (ALiVE) and the Centre for Applied Computing and Interactive Media (ACIM).

Abstract

Future Cinema – Creating New Realities

While during its infancy the cinema was full of technological innovation and creative diversity, Hollywood has ended up defining its dominant forms of production and narration. But this situation is now changing because of the new digital modalities of cinematic production and presentation, and over the last ten years we have been witnessing a creative renaissance with a whole new range of experiences, from handheld micro-movies and interactive mash-ups, to video games and immersive telepresence in virtual 3D worlds. Professor Shaw's presentation will discuss the convergent multiplicity of these new techniques of cinematic representation and intercommunication, with illustrated examples of ground-breaking artworks that herald the digitally expanded cinema of tomorrow. Shaw will refer in particular to benchmark research he and his associates are currently undertaking at the CityU Applied Laboratory for Interactive Visualization and Embodiment (ALiVE).

In the realm of digital creation, the essential scale-ability of its codes allows the cinematic imaginary to be seamlessly distributed amongst these various technological systems, opening dizzying perspectives of creative interpolation on all levels and in all places. We are witnessing an increasing multiplicity of techniques of representation and inter-communication, and the emergent expressive possibilities that derive from their invention and application. The social vitality of creative research in this area provides a platform for the broader discourse concerning the co-evolutionary challenges for humankind living in a machine culture. This is the driver of a research trajectory that looks beyond the dominant industrial forms of popular media, and pushes the creative and critical boundaries of the cinematic imaginary in ways that can enrich human experience and be of transforming benefit to society.

POSTER PRESENTERS

Professor Ron Shu Yuen Hui

ex CityU staff
Previously Chair Professor of the
Department of Electronic Engineering

City University of Hong Kong

Biography

Professor Ron Hui (FIEEE 2003) received his PhD at Imperial College London in 1987. He has previously held academic positions at vthe University of Nottingham, the University of Sydney and City University of Hong Kong. He joined the University of Hong Kong as Chair Professor in 2011. Concurrently, he has held the Chair Professorship at Imperial College London since 2010.

He has published over 200 technical papers, including more than 150 refereed journal publications and book chapters. Over 50 of his patents have been adopted by industry. He is a Fellow of the IEEE and IET. He has been appointed twice as an IEEE Distinguished Lecturer by the IEEE Power Electronics Society in 2004 and 2006. He won two IEEE Power Electronics Transactions Prize Paper Awards for his publications on Wireless Power in 2009 and on LED system theory in 2010. His inventions on wireless charging platform technology underpin key dimensions of Qi, the world's first wireless power standard, with freedom of positioning and localized charging features for wireless charging of consumer electronics. In Nov. 2010, he received the IEEE Rudolf Chope R&D Award from the IEEE Industrial Electronics Society, the IET Achievement Medal (The Crompton Medal) and was elected to the Fellowship of the Australian Academy of Technological Sciences & Engineering.

Poster - CityU-1

Project Objectives

A universal wireless charging platform for simultaneously charging multiple portable electronic devices is developed.

Brief Description of the Project

The wireless charging platform taps into near-field electromagnetic coupling technology, and is capable of generating low-frequency electromagnetic field that does not harm the stored data in the devices being charged. Laboratory tests show that charging time is similar to that of conventional chargers. The charging platform does not require wired connection with the devices under charging. Electronic devices can be charged regardless of their positions or orientations.

Impact and Contributions

The technologies related to wireless charging have been adopted by the Wireless Power Consortium to draw up universal industrial standards for wireless charging, and they underpin key dimensions of Qi, the world's first wireless power standard. The invention may lead to the creation of a new generation of wireless charging apparatuses, and its widespread use can reduce the accumulation of electronic waste and packaging.

Project Team

Professor Ron Hui
(ex CityU staff; previously Chair Professor of the Department of Electronic Engineering)

Professor
Edward Kai Ning Yung

Chair Professor
Department of Electronic Engineering
City University of Hong Kong

Biography

Prof. Edward Yung was born in Hong Kong. He received a Bachelor of Science Degree in the University of Mississippi with Special Distinction in Electrical Engineering in the winter of 1972 with the highest grade point average in that batch of graduates. He earned a Master of Science Degree and a Doctor of Philosophy Degree with a perfect GPA in 1974 and 1977, respectively.

Prof. Yung's specialism include: Radio Frequency Identification Systems, small Antennas for Wireless Devices, sesign of Synthetic Chiral Materials and Wave Scattering from Chiral Materials, antenna Loaded with a Bi-Anisotropic Body of an Arbitrary Shape and Computational Electromagnetics.

Professor
Steve Hsianghoo Ching

University Librarian
Run Run Shaw Library
City University of Hong Kong

Biography

Steve Ching is the University Librarian at City University of Hong Kong. He is also an Adjunct Professor in Department of Economic and Finance. Before joining CityU in 2004, he was a Professor of Business School and the Director of University Libraries at Feng Chia University in Taiwan. His recent research works include changing management of library services, regional and inter-regional academic library consortia development and management, RFID application in libraries, strategic development for digital publishing, and economic issues for Pearl River Delta and Yangtze River Delta.

Poster - CityU-2

UHF RFID Automated Library System - The EasyService Project

Project Objectives

By using Ultra High Frequency Radio Frequency Identification (UHF RFID) technologies, the EasyService Project develops applications that allow users to handle by themselves various book circulation processes, for example, book loans and returns, and settling overdue fine payments.

Brief Description of the Project

The EasyService Project has given rise to the EasyCheck and EasyPay Systems. The EasyCheck System, launched in April 2008 in a selected small collection inside the Library, is well-received by users. Installed with a unique shielding device, the System ensures that no unrelated items nearby shall be mistakenly detected when the user is checking out books.The EasyPay System, introduced in 2009, has streamlined the overdue fine payment handling process and thus substantially reduced the administration for cash handling and micropayments.

Impact and Contributions

The project has drawn the attention of other libraries on the potential of UHF RFID and led to the formation of the Consortium for RFID Applications in Higher Education Libraries. CityU, Tsinghua University, and the Shanghai Jiaotong University are the founding members.

Project Team

Professor Edward Yung
Chair Professor, Department of Electronic Engineering
Professor Steve Ching
University Librarian, Run Run Shaw Library

Professor Kwai Man Luk

Chair Professor
Department of
Electronic Engineering
City University of Hong Kong

Biography

Professor Luk received his PhD degree in electrical engineering in 1985. His research interests include antenna design, and millimeter wave technologies. He was awarded 5 US patents and over 10 PRC patents on the designs of various printed antennas. He is a Fellow of IEEE, IET, CIE, and HKIE. He received the Croucher Award in 2003. He is a Chief Guest Editor of a special issue on 'Antennas in Wireless Communications' of the Proceedings of the IEEE.

Professor Quan Xue

Professor
Department of
Electronic Engineering
City University of Hong Kong

Biography

Prof. Xue received Ph.D. degree in electronic engineering from the University of Electronic Science and Technology of China (UESTC), Chengdu, China 1993. Then he joined the UESTC and was promoted as a Professor in 1997. In 1999, he joined the City University of Hong Kong, where he is currently the Associate Vice President, and a Professor in the Department of Electronic Engineering. He is a Fellow of IEEE with research interests in microwave and antenna.

Professor Chi Hou Chan

Chair Professor
Department of
Electronic Engineering
City University of Hong Kong

Biography

Professor Chan received his PhD in EE from UIUC in 1987. His academic lineage can be traced back to Helmholtz and Gauss. He joined City University in 1996 and has been a Chair Professor of EE since 1998. Chi is the recipient of the 1991 Presidential Young Investigator Award from the US National Science Foundation and the 2004 Joint Research Fund for Hong Kong and Macao Young Scholars from the Natural Science Foundation of China. He is a fellow of IEEE.

Poster - CityU-3

Radio-Frequency (RF) Technologies in Mobile Satellite Terminal for Chinese Area Positioning System (CAPS)

Project Objectives

To develop compact antennas and microwave integrated circuit transceivers for an advanced navigation and communication system, namely, the Chinese Area Positioning System (CAPS).

Brief Description of the Project

The CityU State Key Laboratory of Millimeter Waves received an RMB5 m yuan grant from the National Astronomical Observatories of China (NAOC) to develop radio-frequency front-end technologies that support the Chinese Area Positioning System (CAPS). CAPS is a national commitment and CityU is the first local university to be invited by the NAOC to participate in the CAPS project. Major targets of the project are to design small antennas capable of wide angular coverage and a five-in-one RF integrated circuit chip for receiving signals from and transmitting signals to different satellites for navigation and voice communication.

Impact and Contributions

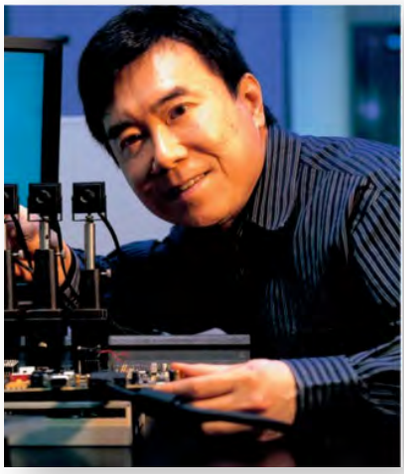
The circularly-polarised antennas developed by the Laboratory are small, light-weight, easy to fabricate and highly efficient. CityU antennas can improve the coverage of satellite phones because of their high gain in broadside and low elevation. The RF integrated circuit chip designed can substantially reduce the size and cost of the overall mobile unit.

Project Team

Professor Luk Kwai Man
Chair Professor, Department of Electronic Engineering
Director, State Key Laboratory of Millimeter Waves (HK)

Professor Xue Quan
Professor, Department of Electronic Engineering
Deputy Director, State Key Laboratory of Millimeter Waves (HK)
Associate Vice-President (Innovation Advancement and China Office)

Professor Chan Chi Hou
Chair Professor, Department of Electronic Engineering
Advisory Committee Member, State Key Laboratory of Millimeter Waves (HK)



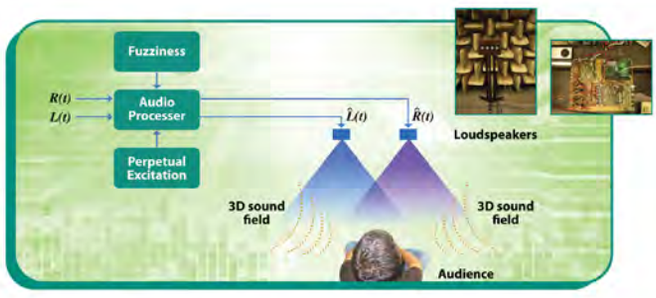
Dr. Peter Wai Ming Tsang

Associate Professor
Department of Electronic Engineering
City University of Hong Kong

Biography

Dr. Peter Tsang received his Ph.D. Degree from the University of Hong Kong in 1987, and is currently an Associate Professor of the Department of Electronic Engineering, City University of Hong Kong. His research interests include Digital Holography, 3D Television, 3D audio, Image Compression, and Computer Vision. Dr. Tsang has developed solutions for capturing real-world 3D scene, as well as methods for converting 2D color images into multi-view auto-stereoscopic images. His inventions have been licensed to several local companies in Hong Kong.

Poster - CityU-4



Project Objectives

The project aims to facilitate the generation of enhanced spatial effects for stereo audio systems.

Brief Description of the Project

The novel 3D sound system allows listeners to perceive more robust 3D effects through a dynamic processing of the sound field. The system comprises a computation efficient component that generates an enhanced output signal based on the digital processing of the stereo signals. This results in a more appealing audio effect, in a way that the listener feels as if the sound sources are emerging from an expansive environment. Different from some existing spatial enhancement techniques, our system provides a subtle hint of fuzziness that makes the 3D effect stronger, but less artificial to the human ears.

Impact and Contributions

The 3D sound system is applicable to audio systems and can be integrated with electronic devices such as audio dockings, portable loudspeakers, computers, MP3 and DVD players.

Project Team

Dr Peter Tsang
Associate Professor, Department of Electronic Engineering

Professor Shuk Han Cheng

Professor
Department of Biology and Chemistry and
Director
Office of Education Development and General Education
City University of Hong Kong

Biography

Prof Cheng Shuk Han received her BSc (Hons) from the University of Hong Kong (Major in Zoology and Minor in Biochemistry). She received her PhD from the Royal Postgraduate Medical School, which is now part of the Imperial College, University of London. Her PhD work was on the cellular immune response of BCG vaccination, under the supervision of Prof Denny Mitchison in the Department of Bacteriology, Hammersmith Hospital. She did her postdoctoral training under the supervision of Prof Tak Mak on molecular immune response of T cells at the Ontario Cancer Institute in Toronto. Before joining City University of Hong Kong in 1997, she worked in the Department of Paediatrics and Department of Orthopaedics and Traumatology at the Chinese University of Hong Kong.

She has won many innovation awards at international exhibitions, including the Gold Medal at the 35th International Exhibition of Inventions, New Techniques and Products of Geneva in 2007, and a total of 6 awards from the Korean International Women's Invention Expositions in 3 consecutive years from 2009 to 2011. She has published over 80 peer-reviewed research articles and some of them are among the Top 25 Hottest Articles in the Science Direct database. To date, she has supervised 19 graduate students, with 5 awarded PhD and 9 awarded Mphil. She is a member of the Editorial Boards of the journal Nanomedicine: Nanotechnology, Biology and Medicine and the journal Developmental Dynamics. She is an overseas Fellow of the Royal Society of Medicine (London). She also serves on the Board of Directors of Nano and Advanced Materials Institute Limited (NAMI) in Hong Kong.

Poster - CityU-5

Transgenic Fish Technology to Detect Estrogenic Pollutants

Project Objectives

The transgenic fish technology can efficiently detect estrogenic disruptors in the environment by using transgenic medaka fish.

Brief Description of the Project

Estrogenic pollution is caused in part by the extensive use of estrogenic chemicals in food and pharmaceuticals, which enter the marine environment through sewage disposal. Such pollutants not only upset the hormonal balance of humans and organisms, but may also be carcinogenic. Medaka fish larvae with genes engineered to give off green fluorescence are exposed to sample solutions for 12 to 24 hours. The concentration of estrogenic disruptors in the sample can be measured by studying the intensity of the green fluorescence.

Impact and Contributions

The novel technology had once been exhibited in the Science News Corner of the Hong Kong Science Museum in 2010. The project team was awarded the Gold Prize and Federation of Korean Industry Special Prize at the third Korea International Women's Invention Exposition held in early May 2010, beating contestants from about 20 countries.

Three CityU students used the transgenic fish technology to come up with a business plan that won them the Asian championship of the HSBC Young Entrepreneurship of the HSBC Young Entrepreneur Awards 2010 and the bronze award of the Lee Kuan Yew Global Business Plan Competition 2010. The team eventually set up a startup company and licensed the technology.

The technology is suitable for a wide range of industries, including food production, cosmetics, pharmaceuticals and environmental monitoring.

Project Team

Professor Cheng Shuk Han
Professor, Department of Biology and Chemistry
Director, Office of Education Development and General Education

Professor Weijia Jia

Professor
Department of Computer Science
City University of Hong Kong

Biography

Prof. Jia is currently a full Professor in the Department of Computer Science and the Director of Future Networking Center, ShenZhen Research Institute of City University of Hong Kong (CityU), leading several large R&D projects on next-generation mobile phone and multimedia software and devices. He received BSc and MSc from Center South University , China in 1982 and 1984 and Master of Applied Sci. and PhD from Polytechnic Faculty of Mons, Belgium in 1992 and 1993 respectively, all in Computer Science. He joined German National Research Center for Information Science (GMD) in Bonn (St. Augustine) from 1993 to 1995 as a research fellow. In 1995, he joined Department of Computer Science, CityU as an assistant professor.

Prof. Jia's research interests include next generation wireless communication, protocols and heterogeneous networks; distributed systems, multicast and anycast QoS routing protocols. In these fields, he has a number of publications in the prestige international journals (IEEE Transactions, e.g., TPDS, TN, TMC, TC etc.), books/chapters and refereed international conference proceedings (e.g. ACM CCS, WiSec, MobiHoc, IEEE ICDCS, INFOCOM etc.). He has received the best paper award in a prestige (IEEE) conferences and has proposed an improved algorithm for well-known Vertex Cover and Set-packing NP-hard problems with time bounds of O(kn+1.2852k) and O((5.7k)kn) respectively. Both results stand on the current best time-bound to date for the fixed-parameterized intractable problems. In 2005 and 2008, he has been awarded total HK$22 millions from the Innovation & Technology Fund of the HKSAR Government for two projects with intentions of design and implementation of cyber cross-platform secure communications to integrate the Internet with 3G, WiFi,WiMAX, ad-hoc, Sensor and networks for real-time multimedia communications and mobile video surveillance.

Prof. Jia is the Chair Professor of Central South University, Changsha, China, Guest Professor of Shanghai Jiao Tong University, University of Science and Technology of China, Beijing Jiao Tong University and Jinan University, Guangzhou, China. He has served as area editor for prestige international journals (IEEE TPDS and ComCom) and chair and PC member/keynote speaker for various prestige international conferences. He is the Senior Member of IEEE and the Member of ACM.

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Project Objectives

The invention is a software tool that connects 3G mobile network, WiFi, and the internet.

Brief Description of the Project

By installing the WeZOOM software tool in their personal gateway, users can access the WeZOOM-3G mobile surveillance system via cell phones and the internet. Upon detection of abnormalities, the surveillance camera will send signals to users through 3G phones. Users can operate the surveillance camera by using the phone keypad or PC keyboard. The system is equipped with infrared and RF315/433MHz remote sensing technology for monitoring home temperature, lighting, and heating from different locations.

Impact and Contributions

The invention has wide application in both domestic and business settings. WeZOOM was recipient of the Excellent Product Award in the 12th China Hi-Tech Fair. The software is licensed to several companies.

Project Team

Professor Jia Weijia
Professor, Department of Computer Science