ACoRN

ARC Communications Research Network

Newsletter August 2009

Update on the Future of ACoRN

As you are all aware the funding from the ARC is due to conclude at the end of 2009. The board of ACoRN are putting several measures in place to ensure that the network of people that have formed as a result of ACoRN continues to collaborate and subsequently enhance the level of researh in Australia. One of our strategies is to obtain the endorsement of industry. This will require the compilation of a dynamic proposal document to excite and engage the interest of industry and to illustrate the many benefits that the network has to offer. If you have any ideas that could be incorporated in the proposal, please do not hesitate to send me an email.

I have spent the past few months collating information on the achievements of the network. Many results are easily identified with the evidence of new collaborations, joint publications, research visits, attendance at ACoRN events etc., but I am confident that there are many intangible benefits that will not be apparent for many years.

There are many events planned before the end of the year. ACoRN will be running at least one other school event which will be given by leading international researchers. More details on this event will be released within the next two weeks.

ACoRN is also planning a 3 day Coding & Information Theory retreat on 23rd, 24th & 25th November 2009, to provide a venue for researchers to gather in an informal environment to present recent results, propose new research topics and tackle longstanding open problems. It is intended that the retreat will lead to new collaborations and bring about new exciting results in coding and information theory. Further information is available on the ACoRN website.

If you have any questions please do not hesitate to contact me.

Christine Thursby
ACoRN Administrator

Christine.Thursby@unisa.edu.au

ACoRN Workshops

ACoRN 3 Day Event

Sydney, 6th - 8th July 09

NICTA in Sydney hosted the second 3 day event. 85 people took part in what was an excellent event.

The first day - The Multi-Hop Workshop was organised by Aruna & Lavy. Prof Elizaebth Belding from Uni California gave the plenary talk entitled "GrowMesh. Organic Growth Mesh Networks for Developing Regions". There were a further 9 presentations with much discussions in the refreshment breaks.

Dr Aruna Jayasuriya; Prof Elizabeth Belding; Dr Lavy Libman

Day 2 – Industry Day – Future Wireless was organised by Mike Faulkner and Abbas Jamalipour. The speakers and presentations were diverse and the talks provided many differing opinions.

Hugh Bradlow from Telstra spoke on Future Wireless Technologies in the Real World;

Mark Reed from (NICTA) Femtocells: Technology, Business Case, and Realisation;

Iain Collings (CSIRO) MU-MIMO Techniques and User-Scheduling;

Andrew Kerans (ACMA) Wireless and Research; Spectrum Issues;

Chris Nicol (NICTA) The future of Wireless Vehicle to Vehicle and Vehicle to Infrastructure Communications;

Yanming Feng (QUT) A Nationwide GNSS Positioning; Phil Mallon (RTA) Smart Road Infrastructure;

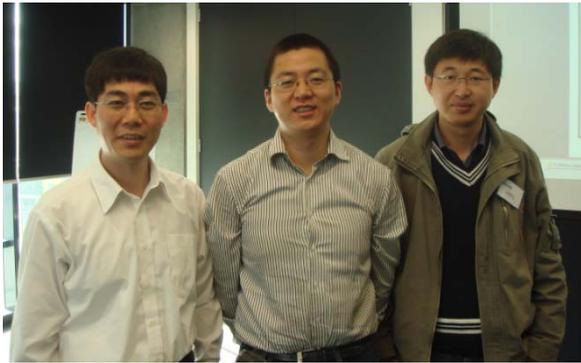Charles Thomas (NICTA) "Multi-Gigabit wireless at 60 GHz: algorithms and implementation

Prof Mike Faulkner, Hugh Bradlow - Telstra

Mark Reed – NICTA; Iain Collings – CSIRO; Chris Nicol – CSIRO; Phil Mallon – RTA; Yanming Feng – QUT

Day 3 – Co-Operative Wireless was organised by Jinhong Yuan and Yonghui Li. Ten presentations were given with keynote talks given by Ming Xiao and Jinhong Yuan.

Jinhong Yuan; Ming Xiao; Yonghui Li

On behalf of the researchers that attended this event ACoRN would like to thank the organisers and presenters for the time that they put into this event. Many new introductions were made and relationships from previous workshops further developed. The feedback has been very positive with much knowledge and information shared.

http://www.acorn.net.au/event/WorkshopsJuly09/

2010 Australian Communications Theory Workshop

2nd – 6th February in Canberra.

AusCTW 2010 will bring together researchers in physical layer communications and related areas. This year marks the eleventh Australian Communications Theory Workshop, which will be held in Canberra from Wednesday, February 3 through Friday, February 5, 2010. An industry day will be held in conjunction with the workshop and optional tutorials on Tuesday, February 2 and Saturday, February 6, 2010. The two and a half day workshop provides an opportunity for researchers and post-graduate students to gather in a largely informal environment to share ideas, make contacts and foster collaborative research links. Previous workshops have been very successful in building links and networks between researchers.

Paper submission are due by 8th November 2009

ACoRN News

NICTA

One of Australia's leading ICT research and development organisations is about to take new lessons from a recently appointed education director.

NICTA, Australia's Information and Communications Technology (ICT) Research Centre of Excellence, has appointed Dr Tim Hesketh to the position of education director.

The former Head of the University of New South Wales' (UNSW) School of Electrical Engineering and Telecommunications will be replacing Professor Aruna Seneviratne.

http://www.arnnet.com.au/article/312169/nicta_appoints_new_education_director?fp=16&fpid=2

Victoria University

Dr Jason Gao has left Victoria University and is now in Shanghai. Jason was the Local ACoRN representative for VU for many years. We would like to thank Jason for his contribution to ACoRN and wish him good luck for the future.

ACoRN Member Profile

Robby McKilliam

Robby McKilliam completed degrees in Computer Systems Engineering and Mathematics at the University of Queensland in 2006. He began his PhD in 2007 under the supervision of Dr Vaughan Clarkson at the University of Queensland and with associate supervisors Dr Iain Collings at the CSIRO/ICT in Sydney and Prof. Barry Quinn from Maquarie University. His PhD concentrates on the mathematical fields of lattice theory and number theory and its application to signal processing, estimation theory and communications. In particular the problems of frequency estimation, polynomial phase estimation, period estimation from sparse impulse data and noncoherent detection have been studied. Robby has also made a number of contributions to the field of lattice theory itself.

Since beginning his PhD Robby has submitted a number of conference and journal publications. He has used ACoRN funding to travel to conferences in New Zealand, USA, Hong Kong and Taiwan and has also travelled to Sydney and Melbourne to meet with collaborators and supervisors. These events have been invaluable for meeting colleagues and broadening his list of contacts and collaborators. Robby is indebted to ACoRN for giving him the opportunity to travel and collaborate.

Robby receives funding from an Australian postgraduate award and also from the CSIRO/ICT in Sydney. In 2007 he was awarded the Maude Walker scholarship from the school of information technology and electrical engineering. Robby's recreational interests are: swimming, soccer, skiing, math, movies, motorbikes, videogames and coffee.

Interesting Stories

World Poor Spell $7.9 Billion in Mobile Cash for Vodafone, MTN

July 20 (Bloomberg) -- James Muriithi used to make a day-long journey to deliver money to his relatives in a village 100 kilometers (62 miles) from Nairobi. Not any more. He now needs only his mobile phone.

"To be able to send money standing here, so that my sick mother can get medicine, is one of the best things to happen in my life," said the 45-year-old who sells newspapers off a folding table in Kenya's capital, and has no bank account.

Phone companies are making a beeline for emerging markets to win mobile-money business from the likes of Muriithi, who uses the M-PESA service from Safaricom Ltd., 40 percent owned by Vodafone Group Plc. Operators such as Vodafone and MTN Group Ltd., Africa's largest wireless company, are targeting about 1.7 billion people with no access to banks. Mobile-money in emerging markets could ring in $7.9 billion of sales for operators by 2012, says GSM Association, an industry group in London.

"It's hard to ignore the impact and potential of mobile as a conduit for developing financial services," said Mark Beccue, an industry analyst at New York-based ABI Research. "It makes perfect sense to marry the two together."

This is how it works: Customers store money on handsets by opening an account with the operator. They can then send cash through text messages to recipients, who collect it from the operator's local agent. In villages, the agents could be at the hamlet's grocer, gas station or post office.

To contact the reporters on this story Marcel van de Hoef in Amsterdam at mvandehoef@bloomberg.net; Sarah McGregor in Nairobi at smcgregor5@bloomberg.net.

India becomes R&D hot spot as high-tech firms cut costs

While India might seem like a natural location to expand offshoring into R&D, it is hampered by some serious structural problems that range from not enough home grown researchers to a lack of government support.

India produces about 300,000 computer science graduates a year. Yet it produces only about 100 computer science PhDs, a small fraction of the 1,500-2,000 that get awarded in the United States, or China, every year.

"Students here are not exposed to research from an early age, faculties are not exposed to research and there's no career path for innovation because there's a lot of pressure to get a 'real' job," said Vidya Natampally, head of strategy at the Microsoft India Research Center.

With few government incentives and an education system that emphasizes rote learning, India lacks the kind of environment found in say, Silicon Valley, where universities, venture capitalists and startups encourage innovation.

"China has a policy in place for R&D; we don't," Natampally said, adding that India could move up the value chain faster if even a small percentage of its engineering graduates went into research.

The small numbers of PhDs and the lack of government incentives for India's fledgling R&D sector are blunting the country's edge, analysts warn.

Further information can be found at http://nz.news.yahoo.com/a/-/technology/5740058/india-becomes-r-d-hot-spot-as-high-tech-firms-cut-costs/

OPPORTUITIES

Quantenna Communications

Senior RFIC Design Engineer

Description:

- Strong individual contributor in a fast-paced team for design specific RF, analog and mixed signal blocks for MIMO systems
- Responsible for architecture, specification and implementation of RF front-end blocks
- Assist other team members with reviewing and testing of RF systems
- Hands-on bring-up and integration of RF / Analog ICs with operations, SoC and board-level hardware engineering

Requirements:

- MS EE or equivalent; PhD preferred
- 3+ years of directly related work experience with RF, analog, high-frequency and/or mixed-signal circuits for wireless systems (Wi-Fi, UWB, Bluetooth, GSM, etc.)
- Must be fluent with IC design tools including Spectre, Spice, Matlab, ADS, ocean script
- Must be familiar with standard RF lab equipment including network analyzer, spectrum analyzer, etc.
- Experience with IC layout is desirable

http://www.quantenna.com/

Quantenna Communications

Senior Software Engineer – Mac

Description:

- Strong individual contributor working in a fast-paced environment working with other aspects of embedded software engineering
- Architecture, development and integration of key 802.11n MAC layer elements into embedded systems including QoS, Security (WPA/WPA2), WDS and WPS
- Responsible for MAC software execution along with integration IC and PHY subsystems

Requirements:

- MS in Electrical Engineering, Computer engineering or equivalent
- Fluent in C / C++ languages in embedded and Linux environments
- Expertise in wireless MAC layer (802.11a/b/g/n, WiMAX, UWB, etc.)
- 5 or more years of directly related experience
- Experience with hardware design and system level implementations and in a startup environment is a plus

http://www.quantenna.com/

Senior Software Engineer – Linux

Description:

- Responsible for Linux environment development for embedded wireless platforms
- Optimization of Linux environment for memory size and performance
- Architecture, development and integration of Linux interfaces to networking and control applications as well as driver path
- In house expert for Linux integration of L2/L3 networking functions on platform

Requirements:

- MS in Electrical Engineering, Computer engineering or equivalent
- Fluent in C / C++ languages in embedded and Linux environments
- Expertise in Linux platform development including BSP packaging
- Demonstratable experience with Linux driver development for Wi-Fi, Ethernet and/or USB interfaces
- 5 or more years of directly related experience
- Experience with hardware design and system level implementations and in a startup environment is a plus

http://www.quantenna.com/

Senior Hardware Engineer

Description:

- Strong individual contributor who will be responsible for wireless system reference board design
- Responsible for engineering test board design including FPGA-based systems
- Board testing and verification of wireless systems
- Will lead product debug, characterization and optimization
- Will provide technical support for internal engineering team and customers

Requirements:

- Minimum of BS in EE and 7+ years of board design experience in semiconductor industry
- Experience with RF and residential gateway reference design is highly preferable
- Experience with ADS design tool and using network analyzers, spectrum analyzers and signal generators
- Familiarity with Orcad schematics and Allegro PCB layout tool
- Experience with FCC type approval for RF devices is highly desirable
- Passion for startup company
- Good communications skills, both written and oral

http://www.quantenna.com/

Coming Events

20-23 Sept 2009	VTC2009 Fall- Anchorage, Alaska, USA http://www.ieeevtc.org/vtc2009fall/index.php
24-26 Sept 2009	WiCOM 2009 – Beijing, China. http://www.wicom-meeting.org/2009/
28-30 Sept 2009	ICSPCS2009 – Omaha, Nebraska, USA http://www.dspcs-witsp.com/icspcs_2009/
11-16 Oct 09	ITW 2009 – Taormina, Sicily http://www.deis.unical.it/itw2009
17-19 Oct 2009	2nd International Congress on Image and Signal Processing (CISP 2009) – Tianjin, China http://www.tjut.edu.cn/cisp-bmei2009
23 -25 Nov 2009	ACoRN Coding & information Theory Retreat
30 Nov – 4 Dec 2009	GLOBECOM 2009- Honolulu, Hawaii USA http://www.ieee-globecom.org/
15 – 17 Jan 2010	Sixth International Conference on Technology, Knowledge and Society – Germany
2-6 February 2010	AusCTW 2010 http://www.ausctw.org/
3-5 March 2010	2010 International Zurich Seminar on Communications – Switzerland http://www.izs.ethz.ch/

For a complete list of coming events and call for papers, see the event calendar
http://www.acorn.net.au/events/ .