ACoRN

ARC Communications Research Network

Newsletter May 2005

Welcome to the first edition of the ACoRN newsletter. Our aim is to send out a newsletter on a monthly basis to advise you of future events, report on previous events and encourage you to share your research with other ACoRN members. Any feedback on conferences attended, items of interest, publications that you have found useful or problems that you may have encountered are most welcome. Please forward them directly to ACoRN Network Administrator christine.thursby@unisa.edu.au

Convenors Report

Lars K. Rasmussen
ACoRN Network Convenor

Welcome to the first issue of the ACoRN newsletter. The Convenor's Report is my forum to briefly inform the ACoRN Community about the current ACoRN activities.

The concept of Research Networks is new to Australia, so it has taken some time and effort to organise a suitable program of activities. I am happy to announce that we now have four strong programs, addressing different networking aspects relevant for our community,

- Researcher Mobility
- Postgraduate Education
- National and International Workshops
- Knowledge Management Systems

each with a portfolio of activities and associated budgets. More information about each of the programs is included in this newsletter. Alternatively, please consult the ACoRN web site. http://www.acorn.net.au

Administrative Staff

The administrative infrastructure in terms of application procedures and guidelines is still under construction. We have employed an ACoRN Administrator, Christine Thursby, who is responsible for the administrative side of ACoRN, and an ACoRN Information Technologist, Simon Patterson, who is responsible for the technical development and maintenance of the ACoRN web site. Christine and Simon will take on vital roles in getting ACoRN fully operational within the next few months.

NEWCOM Collaboration

The European Union **N**etwork of **E**xcellence in **W**ireless **COM**munication (NEWCOM) and ACoRN are currently setting up a mutual agreement, allowing for the organisation of joint events, participation in events across the networks, and mutual exchange of students and researchers. This will be a very important foundation for building up close links with Europe, leading to strong collaboration. We expect the first joint event will take place early next year.

ACoRN Events

In addition to supporting existing activities in Australia, ACoRN actively supports new events

created for networking ACoRN students and researchers. So far in 2005, we have six ACoRN events scheduled. These events range from Winter/Spring School events to smaller focused technical workshops. Some of these events are described in more detail in this newsletter, and more information can be found on the ACoRN web site, http://www.acorn.net.au

Challenges Ahead

We have started well, and now need to keep the momentum up making sure we create the maximum benefit for our community from ACoRN. Our main challenge is to spread the awareness of ACoRN. We need the entire ICT community in Australia, including students, researchers and engineers to be aware of the opportunities ACoRN provides. Further, we need to engage the ACoRN Members to take an active lead in providing useful events and activities, realising the potentials of the ACoRN opportunities.

We have a vibrant community, so I am convinced we can successfully meet these challenges.

Programs

Researcher Mobility

Tad Wysocki/Abbas Jamalipour

The ACoRN's researcher mobility program offers domestic and international visiting opportunities for researchers within the ACoRN network, opportunities for domestic internships in collaboration with industry, and visiting opportunities for relevant international researchers to work within ACoRN. It will also initiate an Alumni society for expatriate Australians.

The program currently contains three main activities, namely international travel fellowships, domestic travel fellowships, and visitors travel fellowships. In all cases, the travel fellowships are enabling grants, providing the seed funding to leverage further support from other sources.

The ACoRN International Travel Fellowships are intended for Australian researchers to visit recognized researchers and research groups abroad for longer periods of time. Further details about the scheme can be found at: http://www.acorn.net.au/mobility/international

The ACoRN Domestic Travel Fellowships are intended for Australian researchers to visit ACoRN member researchers and research groups for longer periods of time. This subprogram also supports industry researcher internships. Further details about the scheme can be found at: http://www.acorn.net.au/mobility/domestic

The ACoRN Visitors Travel Fellowships are intended for recognized International researchers to visit ACoRN researchers and research groups for longer periods of time. It is expected that as a result of such visit a formal, long lasting collaboration will be established between the ACoRN researchers and the research group represented by the overseas visitor. Further details about the scheme can be found at: http://www.acorn.net.au/mobility/visitors

Questions can be directed to the Executive Board members responsible for this program, A/Prof. Tad Wysocki and A/Prof. Abbas Jamalipour

National and International Workshops

Jamie Evans/Rod Tucker

The NIWP aims to support attendance of ACoRN researchers at international and national workshops and conferences, establish a coordinated calendar of workshops with emphasis on the ACoRN research themes and support bids for hosting major international telecommunications conferences in Australia.

ACoRN will fund a limited number of travel grants, up to $2000 to enable ACoRN researchers to attend international workshops and conferences held outside Australia. Details on how to apply are found on the ACoRN website.

ACoRN is proud to announce that it is a major sponsor of the IEEE International Symposium on Information Theory (ISIT), which will be held in Adelaide 4-9 September this year. ACoRN would like to support bids for hosting other major international conferences in Australia (contact Jamie Evans for details).

ACoRN will support a number of new workshops in 2005. A workshop on cross-layer design is currently being organised by Professor Lars Rasmussen.

ACoRN is interested in supporting more workshops in 2005 so if you have an idea for a workshop which would be relevant to the ACoRN themes, please contact us. We are particularly interested in workshops which aim to bring together researchers from different backgrounds.

For enquiries about any of the above activities please contact us.
http://www.acorn.net.au/contact

Postgraduate Education Program

Steve Weller/Rod Kennedy

For postgraduate students working in information and communications technologies, the Postgraduate Education Program (PEP) of ACoRN offers unique opportunities for learning, information exchange, technical collaboration, mentoring and career development.

ACoRN is committed to involving postgraduate students as key elements of the research network, and the PEP is the mechanism by which we achieve this.

ACoRN's Postgraduate Education Program makes available resources to support postgraduate students to travel, both domestically and internationally, for periods of up to 6 weeks for research collaboration. In addition, PEP provides support for student attendance at summer/winter schools, such as the ACoRN-NICTA winter school being run in Canberra over 11-15 July.

An ACoRN spring school (11-16 September) is being organised to take best advantage of the truly exceptional opportunity presented by the hosting of the IEEE International Symposium on Information Theory (ISIT) in Adelaide.

ACoRN's Postgraduate Education Program is encouraging student participation in these events through student workshop attendance grants. For information on travel scholarships visit
http://www.acorn.net.au/postgrad

For academic staff who are already members of ACoRN, please encourage your postgraduate students in ICT to become participants of ACoRN by making a brief written proposal to your local ACoRN representative.

For postgraduate students who are yet to become participants, pester your supervisor! For postgraduate students already participating in ACoRN, check the ACoRN web site at http://www.acorn.net.au for details on how you can get involved, and to start taking advantage of the opportunities provided by ACoRN.

Knowledge Management Systems

Alex Grant/Lang White

The goal of the Knowledge Management program is to facilitate the dissemination of information within ACoRN, and to communicate the achievements of the Australian telecommunications research community to the general public.

The original ACoRN website was focused on the report that was required for the initial ARC application, and has admirably served that purpose. Now that ACoRN is up and running, ACoRN Information Technology officer, Simon Patterson is redeveloping the website, to meet the ongoing operational needs of ACoRN. The new website will offer the same database powered access to individual and organizational data, as well as providing general ACoRN information, news items, online funding application forms and event calendars. We are also investigating the feasibility of webcast seminars, to improve Australia-wide access and technical interaction.

This newsletter is also an initiative of the Knowledge Management program, and we hope that it helps to further promote a sense of community among ACoRN researchers.

Ideas or suggestions for the ACoRN website should be sent to webmaster@acorn.net.au

Coming Events

16-17 June 05
Adelaide

Introduction to Satellite Communications
ITR Short Course

The course gives an introduction to the Satellite Communications field. It introduces the basic orbital parameters, the space environment, followed by a detailed presentation of the link budget and various satellite access schemes.

The ground station architecture and requirements are formulated. The building blocks of the satellite platform and the satellite payload are discussed together with the issues related to satellite installation in orbit.

The most important types of satellite services including satellite Internet applications are presented.

A brief history of Australian contributions in this area with a focus on the latest developments in satellite communications equipment will conclude this course.

The practical session will allow participants to become familiar with a state-of-the-art satellite receiver and the Satellite Network Access Point concept: aggregation of communication services for remote communities using the latest wireless technologies e.g., WiFi, WiMAX.

http://www.itr.unisa.edu.au/about/docs/adrian-2005-satcoms.pdf

23-24 June 05
Adelaide

Cross-Layer Design Problems for Wireless Communications
ACoRN Workshop

The workshop will feature eight invited speakers from Australian research groups working on cross-layer design problems for wireless communications. Examples of topics are "Satellite Network Access Point (SNAP)" presented by A/Prof. Adrian Barbulescu, and "Joint Detection and Power Control in Wireless Networks" presented by A/Prof. Jamie Evans. The invited talks will be tutorial in nature, providing a forum for researchers from all protocol layers with an interest in cross-layer design.

In addition to invited speakers, ACoRN members are encouraged to submit a summary of relevant work for presentation at the workshop.

The workshop will be very informal, mainly aiming to provide a forum for discussion and potential collaboration. The aim is to keep the registration fee very low, so lunch/dinner will be at delegates own expense.

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

4-9 July 05
Sydney

Australian Conference on Optical Fibre Technology (ACOFT)
Conference

BGPP/ACOFT 2005 will have a strong and diverse program covering a wide range of topics pertinent to fibre optics and photonics industries, academia and research areas.

The scope of the 2005 meeting is broadened to include linear and nonlinear effects in structured fibers and photonic bandgap materials. BGPP/ACOFT 2005 will provide an excellent opportunity for participants to share ideas, review current industry trends and discuss the future of photonics and fibre optics. In addition, the Conference will be co-located with the satellite workshops Photonic Crystals: Fundamentals to Devices, and the 14th International Workshop on Optical Waveguide Theory and Numerical Modelling (OWTNM). These workshops will be held on the dates of 7-8 July 2005.

http://www.bgppacoft2005.com/

Coming Events

11-15 July 05 Canberra	**ACoRN-NICTA Winter School Wireless Communications and Signal Processing** *School* A selection of senior Australian researchers present tutorial talks and one-day tutorials in the areas of wireless communications and signal processing at the Australian National University, Canberra. http://wws2005.rsise.anu.edu.au/

4-9 Sept 05
Adelaide

IEEE International Symposium on Information Theory (ISIT)
Conference

The 2005 IEEE International Symposium on Information Theory will be held at the Adelaide Convention Centre in Adelaide, Australia from Sunday, September 4 through Friday September 9, 2005. Plenary Speakers:

- Professor Richard Blahut (Shannon Lecturer)
  University of Illinois at Urbana-Champaign, U.S.A.

- Professor P. R. Kumar
  University of Illinois at Urbana-Champaign, U.S.A.

- Professor David MacKay
  Cambridge University, U.K.

- Professor Benjamin Schumacher
  Kenyon College, Ohio, U.S.A.

- Professor Terry Speed
  University of California, Berkeley and Walter & Eliza Hall Institute of Medical Research, Melbourne Australia.

A preliminary technical program will be made available via the website in June 2005.
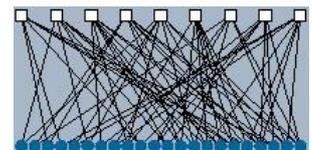
http://www.isit2005.org/

11-16 Sept 05
Adelaide

ACoRN Spring School Coding Information Theory
School

Taking advantage of the IEEE International Symposium of Information Theory in Adelaide (Sept. 4-9), the target is a spring school in the Barossa Valey, with in depth tutorials in hot-topic areas presented by world-renowned researchers.

http://www.acorn.net.au/event/isit2005school

Event Calendar

For a comprehensive listing of upcoming events refer to the events calendar
http://www.acorn.net.au/events

Workshop Reports

Australian Communications Theory Workshop

Brisbane

The sixth Australian Communications Theory Workshop (AusCTW2005) was held 2-4 February 2005 at the University of Queensland in Brisbane, Australia. This annual workshop concentrates on theoretical aspects of physical layer communications, in particular communications and information theory. Specific topics included coded modulation, coding theory and practice, communication systems, channel characteristics and modeling, detection and estimation, digital signal processing for communications, information theory and statistics, iterative decoding algorithms, multiuser detection and space-time coding and processing.

This year a total of 66 full papers were submitted for publication in the workshop proceedings.

The AusCTW 2005 student prize winners were Matthew McKay (best poster) and Nick Letzepis (best paper).

An important contribution to the technical depth of AusCTW is the opportunity for researchers to present material in a relatively informal format of a poster. Both peer reviewed and non reviewed work may be presented. This provides an excellent opportunity for all researchers to interact. It is an excellent forum for research students to gain feedback on work, and for all those attending to see the very latest results from 'work in progress'. The collaborative links and sense of community inspired by AusCTW, has played a vital role in the inception of ACoRN, which is now one of the major sponsors of the workshop.
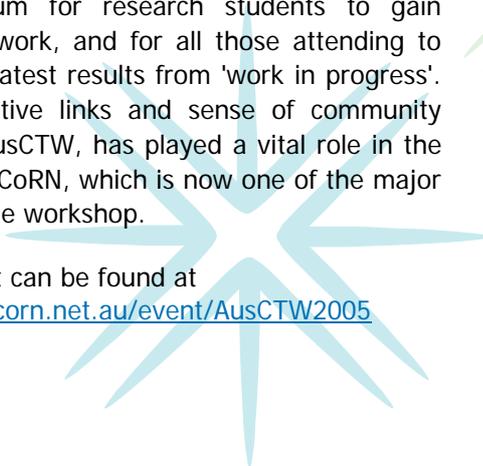
The full report can be found at
http://www.acorn.net.au/event/AusCTW2005

Turbo Receiver Design: From Theory to Practice

Brisbane

A total of 27 researchers and students attended the tutorial, out of which 22 delegates were ACoRN members and 5 non-members.

This tutorial studied the baseband signal processing technique including detection criteria, decoding methods, transmitter configurations, wireless channel modeling, receiver design and analysis techniques.

A full report can be found at
http://www.acorn.net.au/event/trd

Opportunities

University of South Australia

Research Fellow/
Senior Research Fellow
Institute for Telecommunications Research

5 Positions

Established in 1994, The Institute for Telecommunications Research (ITR) is one of Australia's premier research organisations in the area of wireless telecommunications. Its focus is on coding and information theory, communications signal processing and wireless networks for a variety of satellite and terrestrial applications.

We are currently seeking to fill **up to 5 positions** to work on Australian Research Council (ARC) Linkage and Discovery Grants.

The Research Fellows will be required to have a PhD or relevant experience and undertake applied research and development in the following areas:

- Information Theory for Networks with Uncertain Topology (2 positions)

- Quality-of-Service-Based Adaptive Coding for Wireless Communications Networks (1 position)

- Advanced Signal Processing Techniques for Very High Rate Satellite Demodulators (1 position)

- Millimetre Wave Communication Systems for Consumer Applications (1 position)

Selection for these positions will be based on applicants addressing specified selection criteria, which can be accessed at:
http://www.unisa.edu.au/hrm/jobs/index.htm

or alternatively, contact Ms Sandy Sherry on
phone: +61 8 8302 3769
email: sandy.sherry@unisa.edu.au

agere systems

Principal Investigator
Member of Technical Staff
Agere Systems Australia

Agere Systems is a global leader in semiconductors for storage, wireless data, and public and enterprise networks. The company's chips and software power a broad range of computing and communications applications, from cell phones, PCs, PDAs, hard disk drives and gaming devices to the world's most sophisticated wireless and wireline networks. Agere's customers include top manufacturers of consumer electronics, communications and computing equipment. Agere's products connect people to information and entertainment at home, at work and on the road -- enabling the connected lifestyle. Agere Systems Australia is an engineering R&D team of roughly 20 people focused on silicon solutions for future mobile wireless terminals. Formerly Bell Labs Australia.
http://www.agere.com

The role of principal investigator is to function as a member of a research team within Agere Systems Australia.

Please refer to the full advertisement
http://www.acorn.net.au/positions/agere/principalinvestigator

Opportunities

Win an Agere Internship!

Undergraduate Internship

If you're an undergraduate student studying Electronic Engineering (or similar) then this could be your opportunity to gain valuable industry experience working with a cutting edge microelectronics design team. You could win a paid 12 week internship at Agere Systems Australia plus cash towards next year's study expenses.

While competition details are still to be finalised applicants are encouraged to start planning their submissions.

To enter you will be required to write a short project proposal exploring a current design challenge in the telecommunications or microelectronics field. You should explain the design issues and why they are of interest to you. Discuss some strategies that you could use to address the problems and explain how you could contribute towards a solution. Each entry will be judged on merit.

Please refer to the full advertisements
http://www.acorn.net.au/positions/agere/internship

Newsletter Items

Please forward newsletter contributions directly to ACoRN Network Administrator
christine.thursby@unisa.com.au

Contact Us

If you have any queries about anything in the newsletter or any other related ACoRN information please visit the ACoRN website for full contact details at http://www.acorn.net.au/contact