

## NEWS HEADLINES

- **New CIS UKRI Chapter Chair**
- **Significant CI awards for UKRI researchers**
- **Interview with the President of the IEEE CIS – Dr. David Fogel**
- **Call for GOLDs - Virtual networking tools assessment**

### NEW CHAPTER CHAIR

After many years of service Prof. Leslie Smith has stepped down from the position of chair of the CIS UKRI chapter. Leslie was the inaugural chair of the CIS UKRI chapter and has contributed significantly to getting this CIS chapter up and running, supporting many important UKRI events and championing CI research in the UKRI. I am sure you will join the committee in thanking Leslie for all his efforts and support. Leslie intends to stay actively involved in the chapter and, as past chair, he will offer a valuable supporting role to his successor Dr. Damien Coyle who has taken up the role of chair.

Leslie commented "I have enjoyed setting up the UKRI Neural Networks (later CIS) chapter, but I think it is time for a new chair. As I am now heading up my own Department, it would be even harder to find time to be chair".

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### CI AWARDS FOR UKRI RESEARCHERS

Three researchers from the UKRI region have been awarded or announced as recipients of significant CI based international awards.

#### **Announced for 2009 IEEE Neural Networks Pioneer Award**

Congratulations to Prof. John G. Taylor, King's College London, UK who is the 2009

recipient of the IEEE Neural Networks Pioneer Award.

John started in the NN field in 1969 with his first paper being on spontaneous noise at synapses and how that can be incorporated into neuronal activity and thence into a 'noisy neural network'. This went on to be developed into the pRAM neuron and implemented in hardware (chip) form with on-chip learning; it has since been developed further, or applied, by various groups. John also developed a mathematical analysis of Carver Mead's silicon retina and explained a number of its important properties. He developed a temporal Kohonen map in its early days; spent a decade developing techniques for applying NNs in the financial markets (where he has now moved to hedge funds), ran workshops and set up a Special Issue of Neural Networks on 'neural networks and consciousness' with colleagues, and developed a better understanding of local minima and how to handle them using homotopy methods. More recently John has developed an engineering control model of attention and applied it to create a neural model of consciousness, as well using it to create a more general model of cognition (and thence to construction of a cognitive robot).

### **Outstanding Doctoral Dissertation award**

Congratulations also goes to Dr. Siang Yew Chong, University of Birmingham, who will be the 2009 recipient of the IEEE CIS Outstanding Doctoral Dissertation Award for his thesis on "Generalization and Diversity in Co-evolutionary Learning".

Dr. Chong's thesis presents a comprehensive theoretical framework for studying the generalization of co-evolutionary learning. The thesis addresses challenging problems in the field such as, determining the relationship between generalization performance and diversity and understanding how co-evolutionary learning can scale to more complex problems.

### **2008**

#### **Outstanding Doctoral Dissertation award**

Congratulations to Dr. Damien Coyle, lecturer at University of Ulster (chair of the CIS UKRI chapter) who is the 2008 recipient of the IEEE CIS Outstanding Doctoral Dissertation Award for his thesis on "Intelligent Preprocessing and Feature Extraction Techniques for a Brain-Computer Interface".

Damien's thesis illustrates how computational intelligence can be employed to tackle complex biosignal analysis and discrimination in brain-computer interface (BCI) technology. Research into BCI is targeted at developing methods to assist seriously disabled people to communicate effectively through thought alone. BCI also has applications in neurorehabilitation and computer games augmentation. BCI requires accuracy, speed and autonomous adaptation capabilities and this thesis addresses these requirements using novel CI methods to produce an intelligent system that can accurately classify brainwaves within real-time constraints.

Damien was presented with the award by the President of the IEEE Computational Intelligence Society, Dr. David Fogel, at the 2008 IEEE World Congress on Computational Intelligence (WCCI) in Hong Kong.

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### **INTERVIEW WITH THE CIS PRESIDENT**

David Fogel, the president of the IEEE CIS was attending and presenting at the recent Workshop and Lecture Series in Evolutionary Computation at the University of Ulster in Northern Ireland and Damien Coyle (Chair UKRI CIS) took a few moments to talk with him on the topic – **IEEE chapters and the role of the CIS UKRI chapter**

***There are a number of places in which to access information on running an effective IEEE chapter but, as a past chapter founder and chair and now the President of the IEEE Computational Intelligence Society, I would like to get your opinion on how to run an effective chapter and what CIS members can do to engage their chapter so:***

***What, in your opinion are the main roles of chapters in IEEE societies?***

Chapters provide the opportunity for people in an area to get together on a regular basis both to share what they are working on and to develop a greater sense of community. Chapters also provide a means for bringing in lecturers from outside the local area so that people who may not otherwise hear someone's lecture at an international conference can still have the opportunity. Some of these lectures can also be given by "distinguished lecturers" who are supported by the society.

***Is it fair to say that local CIS chapters are of significant importance to the CIS? Can you outline any specific key roles CIS chapters should be undertaking?***

In addition to what I've mentioned above, chapter organizers have an opportunity to ensure that members in the local area advance to the highest level of IEEE membership. Many current regular members of the IEEE are qualified for senior membership, for example. Chapter chairs can help find these people and ensure that they are recognized for their contributions. Chapters can also organize conferences and summer schools, and we encourage anyone interested in doing so to contact our vice president for conferences to ensure that we coordinate our efforts between the chapters and the IEEE CIS society.

***The UKRI chapter has approximately 470 members. This is vast network of like-minded people in the UKRI region. What can the chapter do to leverage this network for the benefit of the chapter and society and, as importantly, for the benefit of each individual CI researcher in the region?***

This is a great question, and it is one that it is likely best answered "bottom-up" rather than "top-down," meaning that the IEEE CIS is happy to support its chapters in ways that the local communities feel work best for them. In the case of UKRI, however, with such a diverse range of locations, I think it would be appropriate to look into video conferencing sites so that a larger number of members could benefit from individual chapter meetings.

***How important is it to have a core group of dedicated people to help organise the chapter?***

It's really critical. Without such a dedicated group, chapter activities have a tendency to wane. It's important that any chapter not rely on a single dedicated individual organizer, but generally a core group is really important.

***With 470 members spread across a relatively large geographical area, 2 islands with 5 regions (England, Northern Ireland, Republic of Ireland, Scotland and Wales), what is the best process to organise meetings and encourage interaction from all regions?***

I do like the video conferencing idea. Another idea is to have a meeting in cyberspace; say in a forum such as is provided by Second Life or another such venue. Again, the preferences here really should depend on local communities' likes and dislikes.

***Meetings are important part of chapter activities. What in your experience is the best format for chapter meetings? Who can organise meetings?***

The chapter chairperson is the one with the responsibility to organize meetings. He or she needs to organize at least two meetings per year to be an active chapter, but we recommend having more meetings. Some chapters have six meetings per year and organize additional events as well. For me, the best format is to have an invited lecturer, where you have the opportunity ahead of time to discuss any IEEE CIS business and then the lecture is given, followed by questions, and hopefully answers!

***In terms of student and recent graduates or Graduates of The Last Decade (GOLDs) – the CIS, and indeed any IEEE society, offers many benefits to those just starting out in the field such as***

***helping them to establish local and global networks via new technologies, organising local activities etc. – activities which can be excellent for students and GOLDS personal development in terms of establishing links with industry leaders – possible job opportunities, meeting new colleagues and establishing new working relationships - for work and R&D discussions/collaboration and friendship, advice and socializing. What would be your advice to anyone wishing to get involved in chapter activities and student societies or organise events?***

This is a simple answer, but perhaps it is really this simple: Get involved. By that I mean there should be nothing standing in the way of anyone who wants to get involved. If you have an idea for a chapter activity or event, and you are not the chairperson, then contact the chairperson and make the suggestion. Volunteer to help organize it. If for any reason you encounter some resistance and you don't think it makes sense, then contact one of the vice presidents of the society to talk about it further. For example, if it were a summer school, then you could contact the vice president of technical activities (and soon, the vice president of education) to discuss the idea further.

***The CIS has its own GOLD subcommittee of which you are particularly supportive. The student/GOLD networking reception at the 2008 IEEE World Congress in Computational Intelligence was a great success, enabling student/GOLDS to meet and interact and enjoy some great food and drink. This event was particularly appreciated by all in attendance. The CIS GOLD committee has a number of goals and initiatives. Have you any advice to students/GOLDS who may have a particular need or***

***requirement as they progress into an R&D job or branch out into industry or government positions?***

Well you've gone from perhaps a simple question to a difficult question. Every situation is different for each individual. I think each person needs to be honest with himself or herself about what he/she would like to do. Industry jobs are quite different from government positions in many cases, and are again quite different from post-docs or other research-type positions. Some offer great freedom to explore ideas. Some offer the opportunity to work on projects of considerable practical importance. Fortunately, not everyone in the world wants to work on only one type of problem. Broadly I would simply say that a student or a GOLD member should be open to new opportunities and experience enough to get a good sense of what feels right.

***The CIS UKRI chapter is experimenting with a new Virtual World technology where all chapter information can be viewed, members can meet virtually within a virtual board room and streamed media such as meeting or conference presentations can be viewed by a virtual conference gathering plus more. What is your opinion of new technologies such as Second Life and networking sites such as LinkedIn, IEEE MemberNet and Facebook. Do you think these technologies will be important for IEEE members in the future?***

I do, and particularly so as travel costs continue to increase. I appreciate the role the UKRI chapter is taking in this experimentation and I hope it will point the way to future success in using these technologies to help promote interactions between members of our community.

***Finally, with CI R&D growing at a significant pace, exemplified by the growth rate of CIS, being one of the fastest growing societies within the IEEE, do you see the role of the society or chapters evolving over the coming years? What is your outlook for the future?***

IEEE CIS has been very successful and that is a testament to the activity and motivation of our individual community members. In recent years we've started multiple publications, including our IEEE CI Magazine, and now two new IEEE Transactions – one on Computational Intelligence and Artificial Intelligence in Games, and the other on Autonomous Mental Development, both forthcoming in 2009. We've also seen the success of the 2007 IEEE Symposium Series on Computational Intelligence and this now looks to be a regular biannual event. Each of these types of advances is intended to provide greater support to the individuals who help make the community so successful. Chapters are often the most direct contact that IEEE CIS has with local communities, so it's even more important now that we continue to promote strong chapters and help them to be successful with innovative ideas. And I know that the officers of the IEEE CIS are looking forward to doing just that.

**Many thanks to Dr. David Fogel, President of the IEEE CIS, for taking the time to answer these questions. Please forward any comments to [d.coyle@ieee.org](mailto:d.coyle@ieee.org)**

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#### CALLING ALL CIS UKRI GOLDS



GOLD stands for Graduates of the Last Decade. IEEE Members who have received their first professional degree within the last ten years are automatically part of IEEE GOLD! The CIS GOLD subcommittee wants to encourage and stimulate stronger affinity and participation among its younger members. We believe participation, interaction and engagement can lead to personal gain for the members and help create a stronger and more effective society. We want CIS GOLD members in the UKRI region to get involved and engage the CIS UKRI chapter. We believe that networking and organising local activities can be of significant benefit to those at an early stage of their career:

- ✦ Network with industry leaders – possible job opportunities
- ✦ Meet colleagues and establish new working relationships – new research project proposals and funding
- ✦ Work and technology discussions – new ideas, feedback on research.

It is not always possible to meet and discuss research with like-minded people however there are range of networking technologies to enable meeting and discussing research with others on a global scale. These technologies are becoming more popular among the younger and older members of the CI research community. The IEEE CIS GOLD committee is keen to investigate these technologies to determine if they can be of benefit to CI members and the society. As the CIS UKRI chapter is the first chapter (a first also for the IEEE) to create a virtual building in Second Life, the online Virtual World, we are keen to find out how useful this is for members. The virtual building basically presents all the information which is available on the website but it also offers

a virtual board room and conference facility and more. If you are a GOLD and are willing to meet virtually with other CIS UKRI GOLDS at the CIS UKRI chapter virtual building in Second Life and provide your views and feedback on its effectiveness as an information provider and virtual networking facility, please contact us now ([d.coyle@ieee.org](mailto:d.coyle@ieee.org)). If you don't already have a Second Life avatar you will need to login and create one. Once we have enough participants we will meet at the virtual space and discuss it and get to know each others backgrounds etc. Your feedback on this would be much appreciated. If successful we will form a CIS UKRI GOLD task force to discuss what the CIS can do for GOLDS in the UKRI region. Please let us know if you have any opinions – good or bad.



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#### CI RELATED EVENTS IN THE UKRI

##### Forthcoming Events

**UKCI2008**, UK Workshop on Computational Intelligence, De Montfort University, Leicester, UK, September 10-12 2008.

**Computational Neuroscience 2008**, *EPSRC Symposium Workshop on Computational Neuroscience*, Mathematics Research Centre, University of Warwick, UK, 8-11 December, 2008.

**CIS event - SSCI2009**, *IEEE Symposium Series on Computational Intelligence*,

Nashville, Tennessee, USA, 30 March - 2 April, 2009.

Check out the CIS UKRI events page for links to these events:

<http://ewh.ieee.org/r8/ukri/cis/events.html>

If you know of or are organising any CI related events in the UKRI region, please keep us informed.

##### Recent Events

**The Irish Signals and Systems Conference (ISSC2008)** which was co-sponsored by the CIS UKRI chapter was a great success. The CIS UKRI are keen to sponsor, support and get involved in more events such as this, so please keep us informed about these events and we will gladly offer support where possible.

**The Workshop and Summer School on Evolutionary Computing (WSSEC2008)**, and Lecture Series by Pioneers, jointly organised by the IEEE CIS and Intelligent Systems Research Centre, University of Ulster, Magee Campus, Northern Ireland, was a great success. A number of very informative talks by some of the top researchers in evolutionary computation were complemented by excellent contributions from attendees.

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#### UKRI CI PUBLICATIONS

We are considering listing recent CI related journal publications by UKRI based researchers. It is thought that this may enable UKRI researchers to be more informed about recent developments in the region and what other UKRI researchers are working on. If you have any comments on this please let us know. Also, please send us brief details of any recent (within one year) CI related journal publications. Please

ensure that all references are formatted IEEE style.

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#### CI RELATED SPECIAL ISSUE JOURNALS

Springer Artificial Intelligence Review  
Special Issue on Artificial/Computational  
Intelligence in Brain-Computer Interfaces  
<http://www.infm.ulst.ac.uk/~damien/aire-specialissue-BCI.pdf>

Computational Intelligence: An International  
Journal Special Issue on Swarm Intelligence  
Algorithms and Applications  
<http://www.blackwellpublishing.com/journal.asp?ref=0824-7935&site=1>

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#### CI LABS IN THE UKRI

After the relaunch of the website in April it was suggested that we compile a list of UKRI based computational intelligence related research centres/laboratories for the website. If you would like your CI related research centre/lab included on the website please send a brief description of research activity, web details, and contact info etc. and we will post it on the website. This type of information will enable researchers in the UKRI and internationally to know what types of centres and labs are here and be more informed about CI research in the UKRI region.

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#### CIS UKRI CHAPTER SECRETARY NEEDED

We are looking for an enthusiastic and energetic CIS member to take up the role of Secretary on the CIS UKRI committee. This will be a fairly demanding role involving collating information for this newsletter, organising events etc. so please consider carefully if you are keen to get more involved and invest valuable time in undertaking this role. Please send a CV and a cover letter to [d.coyle@ieee.org](mailto:d.coyle@ieee.org) outlining your reasons for aspiring to get involved in the committee. We encourage all CIS UKRI members to get more involved in the society and, even if you don't have time, to get involved in the committee please take the time to send us your views, news, comments and suggestions.

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Please provide feedback on this newsletter and if you have any CI related news items please keep us posted ([d.coyle@ieee.org](mailto:d.coyle@ieee.org))

Dr. Damien Coyle  
Chair, IEEE CIS UKRI Chapter:  
<http://ewh.ieee.org/r8/ukri/cis/>

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