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IEEE CIFer 2014—Leading Forum on Computational Finance and Economics Research in Academia and Industry

The IEEE Conference on Computational Intelligence for Financial Engineering and Economics (CIFer) is now established as a leading research forum at the interface between academia and industry. This year the biennial event was held on 27–28 March in London, and praised by the participants and presenters for the excellent organization, beautiful and functional venue, and high quality of keynote talks, panel discussions, and technical sessions. Following in the footsteps of the 2012 IEEE CIFer held at Credit Suisse in New York, and the conference tradition in its 20 years of history, this year the event was also organized as collaboration between academia and industry, providing a forum for shared interests in applied research. Bank of America Merrill Lynch generously hosted the conference on its premises in Canary Wharf. The IEEE Computational Intelligence Society (CIS) provided the financial support for the event, with the primary academic involvement of University College London and the UCL Financial Computing and Analytics Group. The conference has also been supported throughout its history by the International Association for Quantitative Finance and the Association for the Advancement of Artificial Intelligence.

The first day opened with addresses from Alexander Lipton, Xin Yao, and

Antoaneta Serguieva, on behalf of the industry, academia, and conference committee. Alexander reviewed the emergence and evolution of the field of quantitative and computational finance, in a revelatory and entertaining style. Xin introduced the strengths of the IEEE Computational Intelligence Society in terms of its members, activities, and publications. Among the eleven periodicals published by the Society are the journals ranked, correspondingly, 1st, 3rd, 5th, and 8th of the 115 journals in the category of computer science (artificial intelligence) according to the Thomson Reuters Journal Citation Reports, as well as those ranked 1st and 2nd among the 100 journals in the category of computer science (theory and methods). Antoaneta emphasized that progress in the areas of computational finance and economics requires bringing together a wealth of different backgrounds, but that the CIFer community has grown cohe-

sive, in the ability of its members to function creatively in academia and efficiently in industry and to actively engage in both while finding clarity through seemingly prevailing complexity.

The conference attracted high-profile keynote speakers, panelists, and tutorial presenters. Charles Goodhart introduced the current regulatory focus on “The resolution of failing banks: bail-out or bail-in?” and provoked a vigorous debate with the audience. Doyne Farmer reported on recent developments from the CRISIS project—the Complexity Research Initiative for Systemic Instabilities—from the prism of “Dynamics and network properties of systemic risk”.

Michael Dempster argued in his talk on “Dynamic stochastic programming tools for individual asset liability management” about the broader implications of the financial crisis on quality of life. Don Syme demonstrated in his



Alexander Lipton and Xin Yao present opening addresses.

tutorial on “Functional elegance with F# for financial computing”, the features allowing for online access, interpretation and manipulation of ‘big financial data’.

Aistis Raudys briefed attendants on advances in “Algorithmic trading”. The panel on “Systemic risk” involved David Bholat, Jon Danielson, Mark Flood, Kevin James, and was moderated by Antoaneta Serguieva. The lively discussion and interest from the audience, the wealth of experience of the panelists, and the criticality of the topic, led to an agreement to hold a follow-up workshop supported by the IEEE-CIS Computational Finance and Economics Technical Committee.

The conference program included 18 technical sessions focused on “Agent-based computational economics”, “Algorithmic trading”, “Derivative pricing”, “Financial markets”, “Forecasting”, “Hedging”, “High frequency trading”, “Portfolios”, “Risk”, “Text mining and sentiment analysis”, “Volatility modelling”, and a poster session. The technical sessions received 122 papers, decisively revealing a trend of increasing CIFER submissions. The accepted papers for oral presentation were 54, along with 14 papers for poster presentation, at acceptance rates of 44% and 56% including posters. The strict and blind review process was managed by Dietmar Maringer (Program Chair) and facilitated by an International Program Committee of reviewers. Authors of the submitted papers from around the world totalled 358. The conference was attended by over 130 participants, with further participants involved in the CIFER satellite events—a hedging competition prior to the main event and an international spring school in financial computing and analytics immediately after the conference. The Competition Committee involved Peter Beling, William Scherer, Roy Hayes, Mark Paddrik, and was supported by a team from the University of Virginia. Features of the competition, and hedging strategies implemented by participants, were considered during the competition discussion at the conference. The Spring School Committee included



Charles Goodhart and Doyne Farmer present talks on the first day.



Michael Dempster and Don Syme present talks on the second day.



Discussion during the systemic risk panel—David Bholat, Jon Danielson, Mark Flood, Kevin James, and Antoaneta Serguieva (from right to left).

Antoaneta Serguieva, Tomaso Aste, and Uzay Kaymak, and the school took place at the University College London. It was attended by 30 participants and presenters, and supported by the UCL Financial Computing and Analytics Group. The satellite events were introduced to CIFER for the first time this year, and their success prompted towards establishing them as permanent features in the future conference installments.

We would like to thank everyone on the organizing committee, and particularly Robert Golan (Honorary Chair) for his endless enthusiasm and practical support, Dietmar Maringer (Program Chair)

for his dedication and bringing integrity to the process, Samuel Murray (Venue Sponsor) for hosting the event on behalf of the Global Quant Team at Bank of America Merrill Lynch, Vasile Palade (Publications Chair) for his reliable advice, Dawn Bailey (Treasurer) for managing the treasurer function beyond its responsibilities and for adding little touches to the social program, and Rui Almeida (Communications Chair). We acknowledge the continuous guidance and helpful advice by Gary Fogel and Pauline Haddow, as IEEE-CIS Vice Presidents for Conferences, the technical support by Jo-Ellen Snyder as IEEE-CIS

Senior Administrator, and the competence of the team at the IEEE Meetings, Conferences and Events Management Services.

The website of the IEEE CIFE conferences, www.ieee-cifer.org, contains further detailed information for the event this year and videos of the keynote presentations. The Proceedings will soon be available in the IEEE *Xplore* Digital Library,

ieeexplore.ieee.org. Following the conference, currently in progress are a special issue on Big Data Analytics for the journal of Quantitative Finance (impact factor 0.824), an issue on Complex Systems in Finance and Economics for the IEEE Systems Journal (IF 1.270), and an issue on Fuzzy Techniques in Financial Modelling and Simulation for the IEEE Transactions on Fuzzy Systems (IF 5.484). The success

of the 2014 CIFE is in evidence of the growing community in computational finance and economics and its increasing interest in CIFE. It is further evident for the capability of the IEEE CIS and its Technical Committee in Computational Finance and Economics to act on behalf of the community as the natural home for CIFE—its leading research forum at the interface between academia and industry.

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IEEE CIVEMSA 2014—Computational Intelligence and Virtual Environments for Measurement Systems and Applications

The IEEE Computational Intelligence and Virtual Environments for Measurement Systems and Applications conference (IEEE CIVEMSA 2014) was held in Ottawa, Canada during May 5–7, 2014 at the University of Ottawa campus, located in the heart of Canada's national capital, just along the famous Rideau Canal, a UNESCO world heritage site. CIVEMSA has a unique history that goes back to the year 1996. It was first organized by the IEEE Instrumentation and Measurement Society as a workshop on Emerging Technologies focusing on two main areas: computational intelligence and virtual environments. Later in 2003, the organizers of the workshop decided to start two conference meetings, each focusing on one of the two areas: the IEEE International Conference on Computational Intelligence for Measurement Systems and Applications (IEEE CIMSA), sponsored by both the IEEE Instrumentation and Measurement

Society and the IEEE Computational Intelligence Society, and the IEEE International Conference on Virtual Environments, Human-Computer Interfaces, and Measurement Systems (IEEE VECIMS), sponsored by the IEEE Instrumentation and Measurement Society. The two meetings successfully reached their tenth edition in 2012. After noticing the convergence of the topics covered by the

two meetings, the steering committees of the two conferences unanimously voted to merge the meetings in a new conference series to maximize the benefits for the communities: The IEEE International Conference on Computational Intelligence and Virtual Environments for Measurement Systems and Applications (IEEE CIVEMSA), which started from 2013, and is sponsored by both the IEEE



Cristian Gadea from University of Ottawa, Canada presenting a study on 3D NIR camera for gesture control of video game console.