Director’s Update

In the Info-Metrics Institute’s fourth year, the Advisory Board and I continued to expand our activities with a strong emphasis on interdisciplinary activities and on engaging new researchers and students. Examples of interdisciplinary activity include the spring conference on the philosophy and value of information, as well as the list of visiting fellows and new affiliates from the fields of philosophy, physics and complexity studies. The fall conference at UC Riverside and the info-metrics tutorials, which were provided free for all interested graduate and post-graduate students, serve as examples of our commitment to reaching out to new researchers and students. We also sponsored the participation of graduate students from across the east coast for a one-week summer school at the Center for Science of Information (CSoI). We also initiated our new Info-Metrics Prize (see page 10) with expected winner(s) to be announced next spring.

In the next year, our fifth, we plan to expand the Institute’s activities in four ways: First, we will continue our efforts to reach young researchers from across the sciences and researchers from the natural, medical and engineering sciences. Second, we will continue our efforts to initiate activities outside the Washington, DC area, such as with the upcoming November conference in Boulder, Colorado. Third, we will work to improve the tutorials and consider providing more tutorials at different locations. Fourth, we will organize a fifth-year event that will include a cross-disciplinary conference in conjunction with tutorials and discussions on future directions.

In the next year, we will also continue open discussion among our affiliates and others about the overall goal and long-term direction of the Institute. Please bookmark the Institute’s website and check in frequently to find information about our activities. Ideas for new initiatives are always welcome!

As always, we thank the Office of the Comptroller of the Currency (OCC) for its continued support. The recent grant from the OCC will allow the Institute to continue strengthening its role as a leading interdisciplinary institute helping to shape future research, supporting and tutoring graduate students, and introducing new generations of researchers across disciplines to the theory and practice of info-metrics. We also thank our affiliate Aman Ullah and the Economics Department of UC Riverside for organizing (and co-sponsoring) our November conference. Additionally we thank CSoI for co-sponsoring our students at their summer school.

I would also like to thank you all for your continued support and interest in the Institute. Our efforts to establish a common language to link disciplines in solving similar info-metric problems is starting to show results. However, there is still much to do and I look forward to working with you all in the coming years.

- Amos Golan, Director, Info-Metrics Institute
Welcome, New Research Associates!

Radu Balan (University of Maryland)
Professor Balan’s research interests include topics in harmonic analysis and applications to engineering and computer science, particularly statistical signal processing, information theory, and machine learning.

Min Chen (University of Oxford)
Professor Chen, who currently holds the position of professor of Scientific Visualization at the University of Oxford, has made significant contributions in volume graphics, video visualization, face modelling, automated visualization, and theory of visualization. He has presented a strong case that information theory can provide visualization with a theoretic framework, underpinning many aspects of visualization.

Ehsan Soofi (University of Wisconsin Milwaukee)
Professor Soofi is recognized for his research in developing information measures for statistical analysis and showing their use in economic and business applications. Research topics include developing models based on partial information, measures of loss and gain of information, measuring levels of uncertainty in decision-making situations, measures of importance of various factors in statistical models, and methods for emphasizing or de-emphasizing attributes to match competitors.

Jean-Pascal Nganou (The World Bank Uganda)

Werner Ploberger (Washington University St. Louis)
Professor Ploberger’s research focus is in the areas of statistics, econometric methodology and time-series econometrics. He has been affiliated with Vienna University of Technology (Austria), the University of St. Andrew (Scotland) and the University of Rochester. In 1993, he was tenured at Vienna University of Technology and promoted to full at the University of St. Andrews in 1995.

Heath Henderson (Inter-American Development Bank)
Dr. Henderson is an applied microeconomist whose research generally focuses on agricultural development. Recently, he has used information-theoretic methods to examine questions of structural transformation in developing country agriculture.

Refik Soyer (George Washington University)
Professor Soyer’s areas of interests are Bayesian statistics and decision analysis, information theory statistics, stochastic modeling, statistical aspects of reliability analysis, and time series analysis. His research focuses on modeling and methodology development and applications of these models and methods to real problems. Recent examples of such work include Bayesian queueing models, mortgage default assessment, Bayesian methods for health care fraud detection, and non-Gaussian dynamic time series.

Wojciech (Wojtek) Szpankowski (Purdue University)
Professor Szpankowski teaches and conducts research in analysis of algorithms, information theory, bioinformatics, analytic combinatorics, random structures, and stability problems of distributed systems at Purdue University. In 2008, he launched the interdisciplinary Institute for Science of Information. In 2010, he became the Director of the newly established NSF Science and Technology Center for Science of Information.
Notes from the Advisory Board

Starting an Institute is exciting but sustaining the initial enthusiasm and activity is the test of whether the organization can be counted as successful. By this measure, the Info-Metrics Institute passes with flying colors. After the extraordinary 2011-2012 Academic Year, the Institute has maintained and even accelerated the momentum for staging conferences, seminars, research visits, and many other venues for sharing ideas and testing empirical and theoretical findings.

Especially satisfying is the degree to which scholars in information theory and empirics are increasingly proud to affiliate with and to promote their research through the Institute. Under the tremendous leadership of Amos Golan, the Institute has established a genuine network of peers serious about advancing an interdisciplinary field. The research that 25 of our affiliates are producing and the range of outlets they are reaching illustrate the vitality of a field spurred on by the Institute.

Teaching and research collaborations with PhD students are other major successes of the Institute. In the past year alone, the Institute has included graduate students in conferences, staged a two-day tutorial on Info-Metrics, has encouraged interactions between graduate students and visiting fellows, and sponsored seven graduate students to participate in Purdue University’s Science of Information Summer School.

What first drew me to the newly established Info-Metrics Institute was the possibility of extending our understanding of entropy by exploring its application to subjects totally disconnected from my own field, physics. Some background might be useful: throughout most of the 20th century the two main methods of inference—Bayesian and Entropic—flourished side by side quite independently of each other. The connection between them had been a source of controversy and even their compatibility had been repeatedly brought into question. Recent developments in entropic inference have, however, culminated in their complete unification. Indeed, the new entropic methods include the old MaxEnt, all Bayesian methods, and the general subject of large deviations as special cases.

The consequences of these developments are potentially enormous both for statistics and for science in general. In physics, for example, the new understanding of entropic principles can be used not just as the foundation of thermodynamics and statistical mechanics, but also as the foundation for other fundamental laws such as Newton’s F = ma in classical mechanics, and the Schroedinger equation in quantum mechanics. From this perspective – the laws of physics are not regarded as fundamental laws of nature, but rather as highly effective rules to process information about the world – just like any other science, including economics. In collaboration with Amos Golan we have

The Info-Metrics Institute, through its workshops, conferences and courses provides us with an excellent forum for an exchange of views and the transplntation of ideas across fields and disciplines. Its focus is timely and much appreciated by many of us who see the future of economics in the analysis of large, multi-dimensional data sets, with the help of insights from many disciplines in order to bring about better and more informed private and public decisions. I saw this interdisciplinary process in action when I attended the Institute’s spring 2012 workshop on info-metrics and social networks.

My current research on testing for and modeling of cross-sectional dependence in large dynamical systems fits well within the scope of the Institute. At the spring 2012 workshop, I benefited from listening to mathematicians, physicists and biologists.
Our Work – Advancing Interdisciplinary Info-Metrics Research

Following is a list of representative research and recent publications by some of the Institute’s affiliates. More detailed information can be found in the 2012-2013 Info-Metrics Annual Report, which will be available on our website in December 2013.

Radu Balan (University of Maryland)

Forthcoming/Recent Publications

Other Updates
- Co-organized FFT 2013 conference and the special “Phaseless Reconstruction” workshop, University of Maryland http://www.norbertwiener.umd.edu/FFT/2013/phaseless.html
- “Quantifying the intrinsic value of information” (with Amos Golan)

Marine Carrasco (University of Montreal)

Current Research
- Generalization of empirical likelihood estimation to handle a continuum or a countable infinite number of moment conditions
- Regularization techniques of the covariance matrix and its application to portfolio selection in finance

Forthcoming/Recent Publications
- On the asymptotic efficiency of GMM, forthcoming in Econometric Theory (with Jean-Pierre Florens)

Other Updates

Ariel Caticha (SUNY – Albany)

Current research
- Development of general methods of entropic and Bayesian inference
- Application of principles of entropic inference to the foundations of physics (statistical mechanics, quantum mechanics and general relativity)
- Application of principles of entropic inference to economic modeling (with Amos Golan)

J. Michael Dunn (Indiana University Bloomington)

Current Research
- Static and dynamic aspects of coping with inconsistent information
- Quantum logic, information, and computation
- Relevance logic

Forthcoming/Recent Publications
- “A New Consecution Calculus for R -> t” Notre Dame Journal of Formal Logic (with Katalin Bimbó)
- “The decidability of implicational ticket entailment,” The Journal of Symbolic Logic (with Katalin Bimbó), solves a problem that had been open since 1960.
- “Editors introduction to a special issue on Quantum Logic Inspired by Quantum Computation” (with Lawrence S. Moss and Zhenghan Wang).

Luciano Floridi (University of Oxford)

Forthcoming/Recent Publications
- The Fourth Revolution - How the infosphere is reshaping human reality, scheduled for publication by Oxford University Press in 2014.
- Volume of collected paper to be published by Springer on the AHRC-funded project on “Understanding Information Quality Standards and their Challenges.”
- A successful one-day Workshop, funded by an academic grant from Google, was held at the European Institute, Florence on “Protection of Information and the Right to Privacy: A New Equilibrium?” A short volume will ensue.

We welcome Jon Michael Dunn from the University of Indiana Bloomington to the Institute’s Advisory Board.

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Other Updates

- Moved to University of Oxford with a Research Professorship in Philosophy and Ethics of Information, joining the Oxford Internet Institute (http://www.oii.ox.ac.uk) in September 2013
- Editor-in-Chief of Philosophy & Technology
- Editor of the Synthese Library
- Recipient of the 2012 Covey Award for “outstanding research in philosophy and computing” by the International Association for Computing and Philosophy
- Elected President of the International Society for Information Studies
- Elected Keynote Speaker: The General Assembly of ISIS’ next international congress to be held in Vienna
- New President Elect: International Society for Information Studies
- Elected Keynote Speaker: The General Assembly of ISIS for the next international congress to be held in Vienna

Amos Golan (American University)

Current Research

- The foundations of Info-Metrics
- Value of information
- Info-Metrics modeling and inference

Recent Publications

- Information Dynamics, Minds and Machines (Forthcoming, 2013)

Other Updates

- Keynote Speaker (and invited paper): Annual International Conference of the Thailand Econometric Society
- Invited - Santa Fe Institute
- Five Day Info-Metrics Tutorial – Chiang Mai University, Thailand
- Info-Metrics Institute: Two-Day Tutorial on Info-Metrics

Alastair Hall (University of Manchester)

Current Research

- Info-metric approaches to inference about the parameters of economic and statistical models based on the information in moment conditions
- Applications of info-metric methods to economic models examining issues related to monetary policy, health expenditures by the UK government, and the returns to education

Nathan Harshman (American University)

Forthcoming/Recent Publications

- Observables can be tailored to change the entanglement of any pure state, Physical Review A, 84 (2011) 012303 (4 pages), arXiv: 1102.0955. (with Kedar Ranade).

Other Updates

- Invited Speaker: The emergence of privileged subsystems in few-body systems, Noise Information & Complexity @ Quantum Scale, Ettore Majorana Centre, Erice (Sicily), Italy, 2013.

Heath Henderson (Inter-American Development Bank)

Current Research

- Information-theoretic synthetic controls
- Optimal priors for generalized cross entropy estimation
- Markov chain analysis of non-traditional renewable energy growth in Latin America

Forthcoming/Recent Publications

- Structural transformation and smallholder agriculture: An information-theoretic analysis of the Nicaraguan case
- Modern value chains and the organization of agrarian production
- Considering technical and allocative efficiency in the inverse farm-size productivity relationship

Maria Heracleous (U Cyprus)

Current Research

- Exploring the relationship between preferential-trade agreements and conflict
- Investigating fiscal policy cyclicality in resource rich countries

Atsushi Inoue (Southern Methodist University)

Current Research

- Empirical and statistical methods for macroeconomics and forecasting
- Interests include: Identification and specification issues with estimation of macroeconomic models

Other Updates

- Moved to Southern Methodist University in 2013

George Judge (University of California-Berkeley)

Current Research

- Quantitative basis for reasoning in the context of an economic system that is stochastic, dynamic, and seldom in equilibrium
- The hidden dynamics of non-linear economic time series
- A probability basis for recovering information regarding unknown and unobservable micro processes
- Network tomography

Forthcoming/Recent Publications

- Implications of the Cressie-Read family of additive divergences for information recovery, Entropy (with Ron Mittelhammer).
- An information theoretic approach to understanding the micro foundations of macro processes, Theoretical Economics letters (with Sofia Villas).

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Raphael Levine (UCLA and the Hebrew University of Jerusalem)

Recent Publications
• Surprisal analysis of transcripts expression levels in the presence of noise: A reliable determination of the onset of a tumor phenotype, PLoS 1, 2013, volume 8 issue 4A (with Ayelet Gross).

Robin Lumsdaine (American University)

Current Research
• Exploring the relationship between financial market perceptions and reality, and the role of news and information in shaping those perceptions
• How survey design affects participant responses and subsequent inference
• The impact of the changing demographic landscape on the global financial markets

Recent Publications

Esfandiar Maasoumi (Emory University)

Forthcoming/Recent Publications
• Robustness in multidimensional wellbeing analysis: Introduction to the special issue, Econometric Reviews, 1-6, Issue 1, Vol 32, 2013 (with Gaston Yolanetsky).

Jean-Pascal Nguessa Nganou (The World Bank Uganda)

Current Research
• Exploring entropy-based methods for the estimation of fiscal rules in resource-rich African countries
• Entropy-based estimation of import elasticities for use in CGE models

Rossella Bernardini Papalia (University of Bologna)

Current Research
• Entropy-based methods in ecological inference with spatial dependence
• Small area estimation problems
• Spatial econometric models for panel data

Forthcoming/Recent Publications

Jeff Racine (McMaster University)

Current Research
• Bandwidth selection for kernel-based copulas and unconditional distribution functions, kernel-based copula estimation with discrete and continuous data

Forthcoming/Recent Publications
• Nonparametric kernel regression with multiple predictors and multiple shape constraints, Volume 23, Number 3, 1343–1372, Statistica Sinica (with P. Du and C. Parmeter).

Eric Renault (Brown University)

Current Research
• Volatility modeling with transaction data
• Stochastic volatility models for option pricing
• Inference with implied probabilities
• Multivariate volatility models
• Non-parametric inference with ill-posed inverse problems
• Inference with implied probabilities provided by entropy maximization subject to constraints of moment conditions is an ongoing research agenda. A paper co-authored with S. Chaudhuri and entitled “Shrinkage of Variance for Minimum Distance Based Tests” has been revised and resubmitted for a special issue of Econometric Reviews in honor of Arnold Zellner.
• Inference with ill-posed inverse problems sets the focus on regularization techniques to prevent the explosive impact of estimation errors when solving inverse problems. Penalization based on entropy is one of the key regularization techniques

Forthcoming/Recent Publications
• Testing for common GARCH factors, forthcoming in the *Econometrica* (with P. Dovonon).
• Realized volatility when sampling times are possibly endogenous, forthcoming in the *Econometric Theory* (with Y. Li, P. Mykland, L. Zhang and X. Zheng).

**Other Updates**
- Associate Editor of *Journal of Econometrics*

**Peter Robinson (London School of Economics)**

**Forthcoming/Recent Publications**
- Exogeneity in semiparametric models: Denitions and tests, (with P.M.D.C. Parente).

**Richard Smith (Cambridge University)**

**Forthcoming/Recent Publications**
- Bagging nonparametric and semi-parametric forecasts with economic constraints: re-examining the redictability of U.S. equity premium, forthcoming in the *Journal of Econometrics* (with Lee and Tu).
- Why does growing up in an intact family during childhood lead to higher earnings during adulthood in the United States, forthcoming in the *American Journal of Economics and Sociology* (with Mohanty).
- Direct and indirect effects of happiness on wage: A simultaneous equations approach, forthcoming in the *Journal of Socio-Economics* (with Mohanty).
- Robustify financial time series forecasting with bagging, forthcoming in the *Econometric Reviews* (with Jiu and Su).
- Testing additive separability of error term in nonparametric structural models, forthcoming in *Econometric Reviews* (with Su and Tu).

**Ehsan Soofi (University of Wisconsin Milwaukee)**

**Current Research**
- Information-theoretic and Bayesian approaches to distribution theory and statistics, and their applications in reliability, economics and management sciences, including measures of information and uncertainty, importance of components for a system, and importance of attributes in multi-attribute decision models

**Recent Publications**
- Importance of components for a system, *Econometric Reviews* (with N. Ebrahimi, N.Y. Jalali, and R. Soyer).
- When are observed failures more informative than observed survivals? *Naval Research Logistics* (with N. Ebrahimi and R. Soyer).

**Aman Ullah (UC Riverside)**

**Current Research**
- Nonparametric and semi-parametric econometrics
- Model averaging: frequentist and information theoretic
- Finite sample econometrics
- Panel data econometrics
- Models of happiness, integrated family, and positive attitude

**Michael Stutzer (U of Colorado Boulder)**

**Other Updates**
- Invited Speaker: Entropy in Financial Contagion
- Research, Euro 26/INFORMS, Rome, Italy, 2013

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Ximing Wu (Texas A&M University)

Current Research
- Nonparametric and information-theoretic methods in econometrics
- Data-driven information-theoretic methods of distributional and specification hypotheses
- Nonparametric estimation of multivariate density and copula density functions
- Semiparametric estimation of shape-constrained functions

Forthcoming/Recent Publications
- Detecting Statistical Abnormality by Combining Benford’s Law and Panel Data Models, *Statistical Research*
- Global Joint Distribution of Income and Health, (with A. Savvides and T. Stengos).
- Recent advances in estimating nonlinear models with applications in economics and finance, forthcoming in *Springer Books* (In J. Ma and M. Wohar, editors).
- Climate change influences on agricultural research productivity, forthcoming in *Climatic Change* (with X. Villavicencio, B. McCarl, and W. Huffman).

Victor Yakovenko (U of Maryland, College Park)

Current Research
- Studying global probability distribution of energy consumption per capita around the world using EIA data

Forthcoming/Recent Publications

Other Updates
- Invited Speaker: General Conference of IARIW, Boston, 2012
- Invited Speaker: Econophysics Colloquium, ETH Zurich, 2012
- Invited Speaker: Econophysics Colloquium and Asia Pacific Econophysics Conference, Asia Pacific Center for Theoretical Physics, Pohang University of Science and Technology, Korea, 2013
- Invited Speaker: Models from Statistical Mechanics in, Applied Sciences, Mathematics Institute, University of Warwick, UK, 2013
- Invited Speaker: Statistical modeling, financial data analysis and applications, Palazzo Franchetti, Venice, Italy, 2013

Check out our website for updates on the Institute’s work and upcoming events. Bookmark our site and visit often!

[www.american.edu/info-metrics](http://www.american.edu/info-metrics)
Science of Information Summer School at Purdue University

The Info-Metrics Institute sponsored seven of our PhD (and post graduate) students to participate in the 2013 Science of Information Summer School this past June at Purdue University.

“I was exposed to how a game theory problem can arise naturally in solving a problem that initially has no suggestion of strategic interaction. Now I realize the IT goes far beyond maximum entropy and I will be investigating such topics as source coding, relay networks, capacity and qubits.”
-Justin Grana, PhD Economics candidate

“The summer school was an excellent opportunity to get some exposure to new ideas and people. I received some useful feedback by non-economists during an informal presentation of one of my dissertation chapters.”
-George Panterov, PhD Economics candidate

“The program of the summer school reflected the interdisciplinary nature of the attendees, as there were presentations on large-scale networks, quantum computing, complex diseases, etc. While these topics are in and of themselves interesting, for me it was most beneficial to see the tools with which problems in these areas were being explored.”
-Heath Henderson (Inter-American Development Bank, Info-Metrics Research Associate)

Info-Metrics Two-Day Tutorial: Experiences of Students from Outside Institutions

The Info-Metrics Institute held a Special Two-Day Tutorial on Info-Metrics at American University in May 2013, taught by Professor Amos Golan (American U). Below are a few words on the experiences of two students from other institutions.

“It is really quite difficult to find a systematic exposition of the material anywhere and due to the fact that is quite difficult to learn such material independently, the tutorial was really an invaluable experience. It was the perfect opportunity to get involved in the community of entropy econometrics.”
-Ellis Scharfenaker, The New School for Social Research

“The contents built on my dissertation - the theoretical characterization of a particular empirical frequency distribution. In particular, the generalized maximum entropy method provided me with a flexible tool to analyze the data in an insightful way I was previously unable to do.”
-Gregor Semieniuk, The New School for Social Research

Graduate Students In Their Own Words

“I investigated application of the Generalized Maximum Entropy (GME) Model as an extension to the general linear model for a study on land titling and investment. The data that is available and often employed in the empirical literature in land titling in developing economies suffers from similar problems. When these problems prevail, the traditional “economic-statistical models may be ill-imposed or underdetermined”. Using the tools of Info-Metrics, I attempted to re-examine the empirical literature on land titling and investment.”
-Woubet Kassa, Summer 2013 Fellow

“The economic literature on grade inflation has primarily been concerned with the biased representation of student ability and the impact on student major choices. However, the studies to date are not completely satisfactory if we expect agents operating in the labor market to behave rationally. An information theoretic approach to grade inflation is potentially more fruitful. This summer I have been working on an investigation of the relative entropy of grades by college major, its impact on student and employer choices and the determination of wages inside and outside one’s field.”
-Daniel Kuehn, Summer 2013 Fellow

Robert Lerman
The partnerships emerging through the Institute are exciting, as scholars from a variety of disciplines and sub-fields work together to generate new insights and to diffuse the emerging knowledge. The Visiting Scholar program allows participants sufficient time for the type of in-depth interactions that can yield serious contributions to the field.

We greatly appreciate the many scholars who have generously devoted their time and initiative to helping the Institute become the go-to place for Info-Metrics and, more broadly, to raising the visibility of info-metrics. Last but certainly not least, we thank the Office of the Comptroller of the Currency (OCC) for its critical and ongoing support for the Institute. The Institute’s success could not have been possible without the OCC and other sponsors.

Ariel Caticha
recently developed an entropic framework to model economies from the point of view of an external observer who has very limited access to information about the individual agents. The framework, which relies purely on macroscopically accessible information, avoids the usual rationality assumptions and leads to a different perspective on the nature of economic equilibrium.

M. Hashem Pesaran
many researchers and financial institutions for stress testing, shock scenario analysis, and forecasting. Seventeen of such applications are published in a GVAR Handbook by Oxford University Press.

The GVAR modeling approach can be used in network analysis, spatiotemporal modeling, analysis of disease diffusion, and financial risk diffusion. I see all these areas to be complementary to what is being done at the Institute and I am happy to be a part of it.

The Office of the Comptroller of the Currency (OCC) is the primary sponsor of the Info-Metrics Institute. We thank the OCC for their continued generous support. We also thank the University of California Riverside for help in supporting the Info-Metrics and Nonparametric Inference conference in November 2012. We also thank the American University College of Arts and Sciences, as well as the Economics Department for their support toward general Institute activities.

The Info-Metrics Annual Prize in Memory of Halbert L. White, Jr.
The Info-Metrics Institute is pleased to announce the creation of the Halbert L. White, Jr. prize in memory of one of the Institute’s founding Board members who passed away on March 31, 2012.

The prize is intended to reward outstanding academic research by an early career scholar in the field of info-metrics and carries an award of $2000 to be conferred either to an individual or shared among joint recipients. A maximum of one prize will be awarded each year. The award ceremony will occur at the first Info-Metrics meeting (conference or workshop) following the announcement of the award recipient.

The inaugural Award Committee consists of:

Essie Maasoumi (Emory; Social Sciences), Chair
Ariel Caticha (SUNY Albany; Natural Sciences), Member
Luciano Floridi (Oxford U; Philosophy), Member
Yuichi Kitamura (Yale; Social Sciences), Member
Raphael D. Levine (Hebrew U and UCLA; Natural Sciences), Member
Aman Ullah (UC Riverside; Social Sciences), Member

For information on eligibility and the nomination procedure, visit the Info-Metrics Prize webpage at http://www.american.edu/cas/economics/info-metrics/prize.cfm.

Recent Institute Events
Workshops and Conferences

Info-Metrics and Nonparametric Inference
November 17, 2012, University of California Riverside

Program committee:
Amos Golan (Info-Metrics, American U)
Aman Ullah (UC Riverside and Info-Metrics)
Robin Lumsdaine (Info-Metrics, American U)
Tae Hwy Lee (UC Riverside)
Jeff Racine (McMaster University)
Nick Kiefer (Cornell U)

Philosophy and Value of Information
April 26, 2013, American University

Program committee:
Pieter Adriaans (U. Amsterdam)
Ariel Caticha (SUNY Albany)
Luciano Floridi (Oxford U)
Amos Golan (American U)

Summer Tutorials
A Special Two-Day Tutorial on Info-Metrics
Amos Golan (American U)
Teddy Seidenfeld (H.A. Simon University Professor of Philosophy and Statistics) works on “foundations,” at the interface between philosophy and statistics, often being concerned with problems that involve multiple decision makers. For example, in collaboration with M.J. Schervish and J.B. Kadane (Statistics, CMU), they have relaxed the norms of Bayesian theory to permit a unified standard, both for individuals acting as separate decision makers and collectively, in forming a cooperative group agent. By contrast, this is an impossibility for strict Bayesian theory. For a second example, in collaboration with Larry Wasserman (Statistics, CMU), they have examined the short-run consequences of using Bayes rule for updating a set of expert Bayesian opinions with shared information. They focus on anomalous cases (they call dilatation), where an experiment is certain to result in new evidence that increases the experts: uncertainty about an event of common interest where uncertainty is reflected in the extent of probabilistic disagreements among the experts.

His current collaborations with Kadane and Schervish incude a theory for indexing the degree of incoherence in non-Bayesian statistical decisions, work on the representation of coherent choice-functions using sets of probabilits, and investigations involving scoring rules for probabilistic forecasts. They also work on the development of finitely additive expectations for unbounded random variables.

Nicholas Kiefer

Nicholas Kiefer (Ta-Chung Liu professor at Cornell University) works primarily in econometrics and statistics, using Bayesian methods and combining economic theory and statistics. He is widely known for his theoretical and applied contributions in the econometric modeling of duration data, the development and estimation of dynamic models under uncertainty, models of learning and the valuation of information, and financial market microstructure. These days, he is continuing research on quantitative methods for anti-money laundering procedures, operational risk control, credit scoring, and model validation in banking. He is also continuing work on the value and nature of information and on Bayesian methods generally.

Professor Kiefer’s recent activities include attending the 40th Annual meeting of the Danish Econometric Society, visiting the research institute CREATE at the University of Aarhus, Denmark, and presenting work with Professor Jeffrey Racine (McMaster U.) on the relation between kernel methods and Bayesian methods. Professor Kiefer has also presented a lecture on the foreclosure reviews in US banks at Wharton’s Department of Statistics and a keynote address at the Credit Scoring and Credit Control XIII Conference, Edinburgh, Scotland. He has also visited Koc University in Istanbul, Turkey and lectured there and at TUSAID. Professor Kiefer’s point of view is reflected in the book with B.J. Christensen Economic Modeling and Inference.
Institute Seminars
Fall 2012/Spring 2013

Robert Rich (Federal Reserve Bank of New York)
“The Measurement and Behavior of Uncertainty: Evidence from the ECB Survey of Professional Forecasters”

Amos Golan (American U)
“On the Foundations and Philosophy of Info-Metrics”

Refik Soyer (GWU)
“When is Failure Preferable to Survival?”

Timo Teräsvirta (Aarhus University)
“Conditional Correlation Models of Autoregressive Conditional Heteroskedasticity with Nonstationary GARCH Equations”

Aman Ullah (UC Riverside)
“Local Linear GMM Estimation of Functional Coefficient IV Models with an Application to Estimating the Rate of Return to Schooling”
(Liangjun Su, Irina Murtazashvili, Aman Ullah)

Luciano Floridi (U Oxford)
“The Design of Political Agents in the Age of Hyperhistory”

Pieter Adriaans (U of Amsterdam)
“Theory of facticity, rethinking the foundations”

Visiting Fellows
Fall 2012/Spring 2013

Esfandiar Maasoumi
(Emory University)

Aman Ullah
(University of California Riverside)

Eric Renault
(Brown University)

Luciano Floridi
(University of Oxford)

Pieter Adriaans
(University of Amsterdam)

Markus P.A. Schneider
(University of Denver)

Ariel Caticha
(State University of New York Albany)

Support the Institute!

The Info-Metrics Institute is happy to receive donations toward its different activities. Contributions to the Info-Metrics Institute are tax deductible, subject to federal and state guidelines.

With these resources, we hope to establish more long-term fellowships for students and junior and senior researchers. We also hope to be able to expand our classes and knowledge dissemination activities.

For more information on how to donate, please contact Aisha Khan at info-metrics@american.edu.

Participants get ready for a presentation at the November 2012 Nonparametric Information Workshop in Riverside, CA

Editors: Carol Hong and Aisha Khan.