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Message from the Director

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 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. We also 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
Notes from the Advisory Board

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 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.

-Ariel Caticha, member

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.

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.

- Robert Lerman, Chair

The Info-Metrics Institute, through its workshops, conferences and courses provides us with an excellent forum for an exchange of views and the transplantation 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.

Over the past decade, I have continued my theoretical econometric research as well as my applied analysis of interactions in the world economy, which fits well within the Institute’s research program. My research in the area of global modeling began in 1998, in the aftermath of the Asian Financial Crisis. As a consultant, I was asked how to quantify the effects of a major market down turn in one part of the globe, such as the one that had just occurred in Asia in 1997, on the loss distribution of a loan portfolio of a major bank in another country, specifically Germany. This led me to the development of a global macro-econometric model, known as the GVAR, which is now used by 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.

- M. Hashem Pesaran, member

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Graduate Students: In Their Own Words

“I am so grateful for the financial and technical support I received through the Summer Info metrics Fellowship and Professor Amos Golan. During the fellowship, I was introduced to the Science of Info-Metrics and its interesting applications in Economics.

With the support of the fellowship, 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. “...Economic processes are typically dynamic, interdependent, and stochastic, and the available economic data are often composed of limited, non-experimental observations”. 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, particularly GME, 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. The problem of grade inflation is common knowledge, so why wouldn’t employers, students, and teachers simply adjust their expectations by an appropriate expected grade inflation factor before making their decisions? An information theoretic approach to grade inflation is potentially more fruitful. From the perspective of information theory, the critical point is not that grades are being inflated over time (agents can adjust for inflation), but that they are also being compressed due to truncation in the grading scale. This implies that grade inflation not only changes the central tendency of the grade distribution; it also reduces the entropy of grades. When employers and graduate school admissions committees review college transcripts they are interested in extracting compressed information about the student’s abilities. Additional compression as a result of grade inflation degrades this information further. 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. I am using the 2008/2009 Baccalaureate and Beyond survey, which includes college transcript data for approximately 15,000 American students who graduated in the 2008/2009 academic year.”

- Daniel Kuehn, Summer 2013 Fellow
Thanks to our Sponsors

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.
Institute Events 2012-2013

Institute participants gather for a group photo during the November 2012 conference at University of California Riverside.

Fall 2012 Conference Roundtable L-R: Eric Renault, Essie Maasoumi, D.V. Gokhale, Whitney Newey, Aman Ullah
J. Michael Dunn presents at the April 2013 Workshop.

April 2013 Workshop Roundtable L-R: Pieter Adriaans, Robin Lumsdaine, Werner Ploberger, Nick Kiefer, Luciano Floridi
2012-2013 Advisory Board

Social Sciences

Duncan Foley (New School for Social Research and Santa Fe Inst.)
http://homepage.newschool.edu/~foleyd

John Geweke (U. Iowa and UTS, Sydney)
http://www.biz.uiowa.edu/faculty/jgeweke/

Alastair Hall (U. Manchester)
http://personalpages.manchester.ac.uk/staff/alastair.hall/

George Judge (Berkeley)
http://are.berkeley.edu/~judge/

Yuichi Kitamura (Yale)
http://cowles.econ.yale.edu/faculty/kitamura.htm

Robert Lerman, Chair (American U and Urban I)
http://american.edu/cas/faculty/rlerman.cfm
http://www.urban.org/about/RobertLerman.cfm

Robin Lumsdaine (American U)
http://www.american.edu/kogod/faculty/lumsdaine.cfm

Esfandiar (Essie) Maasoumi (Emory)
http://userwww.service.emory.edu/~mboerck/

M. Hashem Pesaran (Cambridge)
http://www.econ.cam.ac.uk/faculty/pesaran/

Eric Renault (Brown)

Peter M. Robinson (London School of Economics)
http://personal.lse.ac.uk/robinso1/

Richard Smith (Cambridge)
http://www.econ.cam.ac.uk/faculty/smith/

Halbert L. White, Jr. (1950-2012) (UC San Diego)
http://weber.ucsd.edu/~hwhite/

Arnold Zellner (1927-2010) (Chicago)
http://faculty.chicagobooth.edu/arnold.zellner/more/
Philosophy and the Natural Sciences

Pieter Adriaans (U. Amsterdam)  
http://staff.science.uva.nl/~pietera/

Ariel Caticha (SUNY Albany)  
http://www.albany.edu/physics/ariel_caticha.htm

Luciano Floridi (U of Oxford & U of Hertfordshire)  
http://www.philosophyofinformation.net/About.html

J. Michael Dunn (Indiana U)  
http://www.indiana.edu/~phil/people/dunn.shtml

Raphael D. Levine (The Hebrew U and UCLA)  
http://www.fh.huji.ac.il/members/Levine/  
http://faculty.chemistry.ucla.edu/institution/personnel?personnel_id=264627
2012-2013 New Research Associates

Radu Balan (U Maryland)
http://www2.math.umd.edu/~rvbalan/

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

Min Chen (U Oxford)
http://www.oerc.ox.ac.uk/people/min-chen

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. In particular, he has presented a strong case that information theory can provide visualization with a theoretic framework, underpinning many aspects of visualization.

Ehsan Soofi (U Wisconsin Milwaukee)
http://www.sba.uwm.edu/Soofi_e/

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 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.

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.

Jean-Pascal Nguessa Nganou (The World Bank Uganda)


Werner Ploberger (Washington U, St. Louis)
http://economics.wustl.edu/people/werner_ploberger

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. He was tenured in 1993 (Vienna University of Technology) and promoted to full in 1995 (University of St. Andrews).

**Refik Soyer (George Washington U)**
http://business.gwu.edu/faculty/refik_soyer.cfm

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 healthcare fraud detection, and nonGaussian dynamic time series.

**Wojciech (Wojtek) Szpankowski (Purdue U)**
https://www.cs.purdue.edu/homes/spa/

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, and in 2010 he became the Director of the newly established NSF Science and Technology Center for Science of Information.
2012-2013 Visiting Fellows

Spring 2013

Esfandiar (Essie) Maasoumi
(January 27 - February 2, 2013)
Info-Metrics Institute Senior Visiting Semester Fellow
Arts & Sciences Distinguished Professor Emory University
Editor, Econometric Reviews
Department of Economics
Emory University
http://userwww.service.emory.edu/~mboerck/

Aman Ullah
(March 25 - 29, 2013)
Info-Metrics Institute Visiting Senior Fellow
University of California, Riverside
http://economics.ucr.edu/ullah.html

Eric Renault
(April 4 - 7, 2013)
Info-Metrics Institute Visiting Senior Fellow
C.V. Starr Professor of Economics, Brown University

Luciano Floridi
(April 15 - April 28, 2013)
Info-Metrics Institute Visiting Senior Fellow
OII’s Professor of Philosophy and Ethics of Information
University of Oxford
http://www.philosophyofinformation.net/About.html

Pieter Adriaans
(April 25 - May 3, 2013)
Info-Metrics Institute Visiting Senior Fellow
Professor of Learning and Adaptive Systems Universiteit van Amsterdam
http://staff.science.uva.nl/~pietera/

Markus P.A. Schneider
(April 29 - May 10, 2013)
Info-Metrics Institute Visiting Junior Fellow
Assistant Professor of Economics University of Denver
https://portfolio.du.edu/pc/port?portfolio=MSCHNE58
Affiliate Profiles

In this section, we share the stories of the people behind the Institute’s success and shed light on the interdisciplinary nature of their work. This year, we feature Duncan Foley (New School for Social Research), Nicholas Kiefer (Cornell U) and Teddy Seidenfeld (Carnegie Mellon U).

**Duncan Foley** is the Leo Model Professor of Economics at The New School for Social Research. He served as President of the Eastern Economics Association 2012, and gave the Gordon Lecture for the annual meeting of the Union of Radical Political Economy in January, 2013.

He works on the foundations of statistical evaluation of theory, macroeconomic stability, the interaction of economic growth and climate change, the foundations of microeconomic theory, and the neuronal networks underlying the "brain clock" in mammals.

He is currently working on the development of a statistical version of game theory based on entropy-constrained behavior.

For more information on Duncan Foley’s research inserts, please visit his web page at The New School for Social Research: [http://www.newschool.edu/nssr/faculty.aspx?id=10284](http://www.newschool.edu/nssr/faculty.aspx?id=10284).

**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: [http://press.princeton.edu/titles/8903.html](http://press.princeton.edu/titles/8903.html).
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 dilation), 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 include a theory for indexing the degree of incoherence in non-Bayesian statistical decisions, work on the representation of coherent choice-functions using sets of probabilities, and investigations involving scoring rules for probabilistic forecasts. They also work on the development of finitely additive expectations for unbounded random variables.
Our Work – Advancing Interdisciplinary Info-Metrics Research

Following is a list of representative research and recent publications by some of the Institute’s affiliates.

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
- “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
- 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.

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).

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

- 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

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 on-going 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)

Other Updates
• 2nd SIRE Econometrics Lecture, University of St Andrews, April 2013

Richard Smith (Cambridge University)

Forthcoming/Recent Publications
• Neglected heterogeneity in moment condition models, forthcoming in Journal of Econometrics (with J. Hahn and W.K. Newey).
• Exogeneity in semiparametric models: Definitions and tests, (with P.M.D.C. Parente).

Other Updates
• Invited Speaker: John Nankervis Memorial Conference, University of Essex. Exeter Workshop on Econometrics and its Applications in Honour of Professor James Davidson
• International: Invited Speaker. Conference on Robust Econometric Methods for Modeling Economic and Financial Variables, Bank of Portugal, Lisbon
• International Seminar: Tinbergen Institute, University of Amsterdam and Free University Amsterdam
• Advisory Commission. CEFAGE-UE, Universidade de Evora Portugal
• Governor and Visiting Fellow. National Institute of Economic and Social Research
• Centre Fellow. Centre for Microdata Methods and Practice, U.C.L. and I.F.S.
• Co-Editor of Themes in Modern Econometrics (Cambridge University Press)

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).
• On the sample information about parameter and prediction, Statistical Science (with N. Ebrahimi and R. Soyer).
• Information measures in perspective, International Statistical Review (with N. Ebrahimi and R. Soyer).

Michael Stutzer (U of Colorado Boulder)

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

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

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).
• A nonparametric goodness-of-fit based test for conditional heteroskedasticity, forthcoming in the Econometric Theory (with Su).
• 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).
• Nonparametric regression estimation with general parametric error covariance: A more efficient two-step estimator, forthcoming in Empirical Economics (with Su and Wang).
• Robustify financial time series forecasting with bagging, forthcoming in the Econometric Reviews (with Jin and Su).
• Testing additive separability of error term in nonparametric structural models, forthcoming in Econometric Reviews (with Su and Tu).
• Local linear GMM estimation of functional coefficient IV models with an application to estimating the rate of return to schooling, Journal of Business Economics and Statistics (with Su and Murtazashvili).

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

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Forthcoming/Recent Publications

- Other Updates
  - Received grant from the Institute for New Economic Thinking (INET) on the topic “Statistical Physics Approach to Income and Wealth Distribution” http://ineteconomics.org/grants/statistical-physics-approach-income-and-wealth-distribution
  - 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
Summer 2013 Info-Metrics Summer Classes

A Special Two-Day Tutorial on Info-Metrics
May 28-29, 2013

Instructor: Amos Golan (American U)

Background
All learning, information gathering and information processing, is based on limited knowledge, both a priori and data, from which a larger “truth” must be inferred. To learn about the true state of the world that generated the observed data, we use statistical models that represent these outcomes as functions of unobserved structural parameters, parameters of priors and other sampling distributions, as well as complete probability distributions. Since we will never know the true state of the world, we generally focus, in statistical sciences, on recovering information about the complete probability distribution, which represents the ultimate truth in our model. Therefore, all estimation and inference problems are translations of limited information about the probability density function toward a greater knowledge of that probability density function. Information theory quantities, concepts, and methods provide a unified set of tools for organizing this learning process. They provide a discipline that at once exposes more clearly what the existing methods do, and how we might better accomplish the main goal of scientific learning. In this his course we will study the basic quantities of information theory and their relationships to data analysis and information processing, and then use these quantities to study and develop improved methods of estimation and data processing that compose the class of entropy and information-theoretic methods. Within the above class of Information-Theoretic models, this course concentrates on methods that use conditional and unconditional stochastic moments.

The Complete Course
This course concentrates on the statistical and econometric analysis of problems and data in the social sciences. The methods used for analyzing these problems are within the sub-field of Information-Theoretic estimation methods. The simple problem of estimating more unknown parameters than known observations is a basic example for a common problem within IT. To solve these types of problems, one resorts to the quantity known as “entropy”. That quantity is related to the concept of information. In the first part of the course, we will study the basic concepts of entropy and information. We will use these quantities to solve under-determined problems. In the next part of the course, we will extend this approach for analyzing all types of data. We will discuss both linear models and nonlinear models, including discrete choice and censored models. The course will consist of five days of class lectures and computer laboratories sessions and tutorials. We will work with real and artificial data.

The Two-Day tutorial will cover only part of the above material.

This two-day tutorial involves some computing. For those who are used to write their own computer codes, these computing can be done by using different software, such as Matlab, Gauss, GAMS, etc. For those who wish to use common econometric software, the models we
discuss in this class, can be used within the main econometric software packages: SAS, LIMDEP. In this tutorial, we will use GAMS, SAS and LIMDEP.

Topic Outline
1. Background, motivation and philosophy
   - Why Info-Metrics?
   - Brief History
   - The foundations of information theory
   - What is Entropy
   - The axiomatic and combinatorial derivations of the entropy measure
   - The basic problem
   - The classical Maximum Entropy (ME) principle and formulation
   - The dual (concentrated - unconstrained) formulation
   - Prior information
   - Basic diagnostics and test-statistics
   - Comparison with the standard Maximum Likelihood (ML) and other estimation methods.

2. Derivation of the basic Generalized ME (GME) method – A simple example
   Consider recovering the unknown coefficients of a matrix (matrix balancing) from aggregated data (e.g., estimating the coefficients of Input-Output Table, a Social Accounting Matrix, or first order Markov process). A complete comparison with the traditional methods (e.g., ML) will be developed. Extensions that allow incorporating more variables (e.g., macro/policy) and accommodating for noisy data will be discussed in great detail.
   - The basic pure problem
   - The Maximum Entropy solution
   - The Concentrated problem
   - The ML Solution
   - ME – ML
   - The real, noisy problem
   - The GME solution
   - Inference and diagnostics

3. The traditional linear statistical regression model
   - The basic set-up of the problem
   - Basic derivation of the GME
   - Primal vs. dual formulations
   - Diagnostics
   - Derivations and A comparisons with other information-theoretic methods

Depending on time availability we may discuss one/more of the topics below – but not all

4. Extensions of the linear model (autocorrelations, heteroskedasticity, etc)

5. Discussion of other IT Estimators
6. Discussion of theoretical and empirical applications

7. Additional topics
   - Discrete choice models (ordered/unordered);
   - Set of equations and simultaneous equations;

8. Summary and discussion of possible future directions
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 summarized experiences of two non-American University students.

The Info-Metrics tutorial was extremely insightful. Golan's exposition of the material was lucid and at a level perfect for later year PhDs. 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. Further, it was great to connect with other students and faculty in the field. Being a not so common interest, it was the perfect opportunity to get involved in the community of entropy econometrics.

- Ellis Scharfenaker, The New School for Social Research

The Info-Metrics 2 Day Tutorial at American University in May 2013 was a well-taught, well-organized and concise introduction to the method of generalized entropy for estimating and making inferences about imperfectly known sampling models from which a limited data sample is available for analysis. It dovetailed with my research interests. A PhD student in economics, I attended the tutorial while working on the first part of my dissertation. The contents built on what I was and am working on - 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 a insightful way I was previously unable to do. I hope to use more of these estimation techniques going forward, especially for model selection and for analyzing the behavior of some economic time series. I would like to thank Amos Golan for an excellent introduction to the field of maximum entropy estimation and inference, and providing the students with helpful lecture notes; and the Info-Metrics team for facilitating an enjoyable workshop.

- Gregor Semieniuk, The New School for Social Research
Science of Information Summer School at Purdue University

The Info-Metrics Institute sponsored seven of our PhD (and post graduate) students for participating in the 2013 Science of Information Summer School June 4-7, 2013 at Purdue University. Below, participants provide their experiences and thoughts on similar future programs and classes.

Purdue Summer School participants L-R: Jess Chen, Tual Tuang, Justin Grana, Woubet Kassa, Heath Henderson, George Panterov

“Inside the classroom, I gained an extensive list of topics and terms that were foreign to me. From an economics perspective, I was only familiar with maximum entropy and the information theoretic approaches to estimation. 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.

Outside the classroom, I was able to talk about my ideas to people who are not necessarily with the structure and paradigms of economic thinking. This provided me with useful feedback and a new perspective on many concepts. I was exposed to how a game theory problem can arise naturally in solving a problem that initially has no suggestion of strategic interaction.

For future students, I would suggest that they keep an open mind during the lessons but maximize the free time to discuss ideas with others over a meal or a drink at the local pub.”

-Justin Grana, American University PhD Economics candidate
“I found the conference quite useful. Although some of the topics were harder to follow than others due to the engineering character of the talks (e.g. wireless network design), the conference 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. Furthermore, the event was a great networking opportunity.

I think the institute can benefit more from future events like this one, especially if there are more social science talks in the program.”

-George Panterov (American U)

“First, the summer school was truly inter-disciplinary, as there were attendees who worked in the fields of engineering, computer science, physics, and so on. It was great to get a glimpse of the research in these other disciplines. Second, the program of the summer school reflected the inter-disciplinary 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. Finally, the summer school created plenty of opportunities to network with the other attendees. It seems as if most people thought this was the most important aspect of the program as it offered an opportunity to informally discuss our research, our interests, and any hang-ups in our work that others might provide insight into.

-Heath Henderson (Inter-American Development Bank, Info-Metrics Research Associate)
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 annual Info-Metrics prize will be given for the best recent published work, in any academic discipline, that is deemed likely to bring important advances to multiple academic disciplines in the area of info-metrics (the science and practice of inference and quantitative information processing). The first prize will be given in 2014.

All topics within the field of info-metrics are eligible, regardless of discipline.

Sponsors: The Info-Metrics Institute

Criteria: High quality info-metrics research is the only criteria.

Eligibility: The prize is open to researchers that have completed their PhD within the preceding 10 years. Members of the Info-Metrics Advisory Board cannot be nominated. The award consists of a certificate listing the paper/work, the author's name and affiliation and a cash prize of $2,000.00.

The interdisciplinary Award committee and its Chair will be appointed by the Advisory Board of the Info-Metrics Institute and will include at least three individuals from across the scientific spectrum.

The inaugural Award Committee consists of:
Essie Maasoumi (Emory; Social Sciences) – Chair
Ariel Caticha (SUNY Albany; Natural Sciences) – Member
Luciano Floridi (Oxford; Philosophy) – Member
Yuichi Kitamura (Yale; Social Sciences) – Member
Raphael D. Levine (Hebrew University and UCLA; Natural Sciences) – Member
Aman Ullah (UC Riverside; Social Sciences) – Member

Nomination Procedure: One or more Affiliates of the Info-Metrics Institute may nominate a paper/person (or in some cases, a body of work), with a description of the work’s merits and the impact it has had or may have. The deadline for nomination is June 30. The complete nomination should be sent via email to info-metrics@american.edu with the Subject line: “info-metrics prize nomination.” Self-nomination is not allowed.
2012-2013 Institute Seminars

Fall 2012

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”

Spring 2013

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. of Hertfordshire and U. of Oxford)
“The Design of Political Agents in the Age of Hyperhistory”

Pieter Adriaans (U. of Amsterdam)
“Theory of facticity, rethinking the foundations”
2012-2013 Workshops & Conferences

November 17, 2012 Workshop: Info-Metrics and Nonparametric Inference

Conference Objectives

The one day conference is organized jointly by the Info-Metrics Institute, American University and the Department of Economics of University of California, Riverside.

Interest in nonparametric estimation and inference goes back half a century but has rapidly increased recently (especially with recent advances in computing power) with many new directions of research that cover a vast range of applications in different disciplines. Ongoing research on information-theoretic estimation and inference methods is similarly interdisciplinary, involving information theory, engineering, mathematical statistics, econometrics and the natural sciences.

This one day conference will explore recent advances in the area of nonparametric estimation and inference and in info-metrics, which may help current and future research combining nonparametric procedures with information-theoretic methods.

The conference organizers encourage submissions of papers on any topic within this overall theme with a particular emphasis on the list below.

Conference Topics

- Nonparametric procedures and info-metrics methods
- Nonparametric and Information-Theoretic Estimation and Inference Methods
- Density and Regression Estimation (Nonparametric and Information Methods)
- Kernel estimation and info-metrics
- Mixed data estimation
- Quantile estimation
- Nonparametric and Information time series analysis
- Nonparametric and Information based panel data models

Program Committee

- Amos Golan (Info-Metrics, American U) - Co-Chair
- Aman Ullah (UC Riverside and Info-Metrics) - Co-Chair
- Robin Lumsdaine (Info-Metrics, American U) - Co-Chair
- Tae Hwy Lee (UC Riverside) - Co-Chair
- Jeffrey Racine (McMaster University)
- Nick Kiefer (Cornell)
Confirmed Speakers

John Fisher (MIT)
Nicholas (Nick) Kiefer (Cornell)
Essie Maasoumi (Emory)
Rosa L. Matzkin (UCLA)
Whitney Newey (MIT)
Jeffrey Racine (McMaster)
Eric Renault (Brown)
Peter Robinson (London School of Economics)

Conference Program

7:45-8:30 AM Registration-Coffee-Refreshments

8:30-9:00 AM Conference Opener/Objectives
Amos Golan (American U), Aman Ullah (UC Riverside)

9:00-10:10 AM SESSION I - Information and Constraints
Chair: Eric Renault (Brown U)

Invited talk: John Fisher (MIT)
“Information Gathering Under Resource Constraints: Greed is Good”
Relevant papers: 1 (primary), 2, 3

Discussant: Essie Maasoumi (Emory U)

“Semiparametric Estimations with Shape Constraints”
Ximing Wu (Texas A&M) and Robin Sickles (Rice U)

10:10-10:30 AM Coffee break

10:30-11:30 AM SESSION II – Rare Events and Default Risk
Chair: D. V. Gokhale (UC Riverside)
Discussant: Michael Stutzer (U Colorado)

“Nonparametric Estimation of Probability of Default with Varying Coefficient”
Bin Chen (U Rochester), Qingqing Chen (OCC), Dennis Glennon (OCC), Yongmiao Hong (Cornell)
"Expert Information and Nonparametric Estimation of Rare Events"

**Hwan-sik Choi** (Purdue)

"An Empirical Study of Stock and American Option Prices"

**Diego Ronchetti** (Columbia Business School and University of Lugano)

11:30-1:00 PM SESSION III – Invited Session in Memory of Halbert White
Chair: **Essie Maasoumi** (Emory U)

**Invited Talk: Rosa Matzkin** (UCLA)
“Nonparametric Simultaneous Equations with Applications”
Discussant: **Anil Bera** (U Illinois Urbana-Champaign)

**Invited Talk: Whitney Newey** (MIT)
“Alternative Asymptotics and the Partially Linear Model with Many Regressors”
Discussant: **Hyungsik Roger Moon** (USC)

1:00-2:00 PM Lunch

2:00-3:00 PM SESSION IV – Nonparametric Applications
Chair: **Anil Bera** (U Illinois Urbana-Champaign)

“Gradient Based Smoothing Parameter Selection for Nonparametric Regression Estimation”
**Daniel Henderson** (SUNY-Binghamton), **Qi Li** (Texas A&M), and **Christopher Parmeter** (U Miami)

“Partial Mean Processes with Generated Regressors: Continuous Treatment Effects and Nonseparable Models”
**Ying-Ying Lee** (U Wisconsin-Madison)

“Semiparametric Two-Step GMM Estimation with Weakly Dependent Data”
**Xiaohong Chen** (Yale), **Jinyong Hahn** (UCLA), **Zhipeng Liao** (UCLA)

3:00-3:20 PM Coffee break

3:20-4:50 PM SESSION V
Chair: **Tae-Hwy Lee** (UCR)

**Invited Talk: Peter Robinson** (London School of Economics)
“Nonparametric Regression with Spatial and Temporal Dependence”
Discussant: **Eric Renault** (Brown)
“The Smooth Colonel Introduces the Reverend to Covariates”

Nick Kiefer (Cornell) and Jeff Racine (McMaster)

4:50-5:00 PM Coffee break

5:00-7:00 PM Round Table
Moderator: Aman Ullah (UC Riverside)

D. V. Gokhale (UC Riverside)
Nicholas Kiefer (Cornell U)
Essie Maasoumi (Emory U)
Rosa Matzkin (UCLA)
Whitney Newey (MIT)
Eric Renault (Brown U)
Peter Robinson (London School of Economics)

7:00 PM-9:00 PM Reception

November 2012 Conference papers and additional materials can be found on the workshop webpage: http://www.american.edu/cas/economics/info-metrics/workshop/workshop-2012-november.cfm
April 2, 2013 Workshop: Philosophy of Information

Workshop Objectives

The overall objective of this workshop is to study some of the open questions within philosophy of information with an emphasis on the study of the value of information and the philosophy of information processing.

Interest in the philosophy and meaning of information goes back half a century but has rapidly increased recently with many new directions of research into the meaning, quantification and measures of information and complexity as well as a vast range of applications across the scientific spectrum.

In our first workshop on the topic (October, 2011) we focused on one aspect of the philosophy of information: the different techniques to measure information and to identify meaningful information.

Building on our earlier workshop and recent development, in this workshop we focus on a number of related aspects of the philosophy of information and the philosophy of info-metrics. These topics include the value of information, quantifying information, processing complementary and contradicting information and the inter-relationship between information, computation and complexity.

This one day workshop will address these basic questions and will explore recent advances in the philosophy of information and its potential applications.

Workshop Topics

Value of information
Quantifying information
Measuring information
Processing information
How to define and quantify meaningful information

Program Committee

Pieter Adriaans (U. Amsterdam)
Ariel Caticha (SUNY Albany)
Luciano Floridi (Hertfordshire and Oxford), Co-Chair
Amos Golan (American U.), Co-Chair

Speakers & Panel Discussants

Pieter Adriaans (U. Amsterdam)
Ariel Caticha (SUNY Albany)
Min Chen (Oxford)
J. Michael Dunn (Indiana University, Bloomington)
Luciano Floridi (U of Hertfordshire & U of Oxford)
Duncan Foley (New School and SFI)
Phyllis Illari (U College London)
James Moor (Dartmouth)
Werner Ploberger (Washington U St. Louis)

Workshop Program

8:00-9:00 AM Registration-Coffee-Refreshments

9:00-9:10 AM Welcoming Remarks
Peter Starr, Dean of the College of Arts & Sciences, American University

9:10-9:30 AM Conference Opener/Objectives
Amos Golan (American U.)

9:30-10:15 AM Session I
Chair: Robin Lumsdaine (American U.)

“The Dark Side of Big Data”
James Moor (Dartmouth)

10:15-11:00 AM Session II
Chair: Radu Balan (UMD College Park)

“Synthetic Non-Accruable Information”
Luciano Floridi (Hertfordshire and Oxford)

11:00-11:15 AM Coffee Break

11:20-12:05 PM Session III
Chair: Teddy Seidenfeld (Carnegie Mellon)

“Contradictory Information Can Be Valuable: The Example of the Two Firemen”
J. Michael Dunn (Indiana U. Bloomington)

12:05-1:00 PM Lunch (Provided)

1:00-2:20 PM Session IV
Chair: Duncan Foley (New School for Social Research and Santa Fe Inst.)

“How information have an intrinsic value?”
Pieter Adriaans (U. Amsterdam)
“Belief and Desire: On Information and its Value”
Ariel Caticha (SUNY Albany)

2:20-3:00 PM Session V
Chair: Nathan Harshman (American U.)

“Notes on ensembles as a model of theory choice”
Duncan Foley (New School for Social Research and Santa Fe Inst.)

3:00-3:20 PM Coffee Break

3:20-4:40 PM Session VI
Chair: Nicholas Kiefer (Cornell U.)

“Schools of Thought in Visualization”
Min Chen (Oxford)

“Is Ignorance Bliss with Sets of Probabilities?”
Teddy Seidenfeld (Carnegie Mellon)

4:45-5:00 PM Coffee Break

5:00-6:15 PM Round Table – Info-Metrics: Philosophy of Information
Moderator: Luciano Floridi (Hertfordshire and Oxford)

Pieter Adriaans (U. Amsterdam)
Nicholas Kiefer (Cornell U.)
Robin Lumsdaine (American U.)
Werner Ploberger (Washington U. St. Louis)

6:15 -7:30 PM Reception

April 2013 Workshop papers and additional materials can be found on the workshop webpage:
https://www.american.edu/cas/economics/info-metrics/workshop/workshop-2013-spring.cfm
Forthcoming Workshops & Conferences (2012-2013)

Fall 2013 Conference: November 15, 2013

Title: Information, Instability and Fragility in Networks: Methods and Applications
Location: University of Colorado Boulder

Sponsors
US Comptroller of the Currency
AU College of Arts & Sciences
XacBank - Mongolia

Conference Objectives
The one day conference is organized jointly by the Info-Metrics Institute, American University and the University of Colorado, Boulder.

The recent financial crisis raised the specter of cascading disruptions across financial institutions, due to their growing interconnectedness and the speed at which disruptions may propagate across them.

Quantitative "Connectionist" research in the physical sciences, engineering and information theory has modeled analogous phenomena, using techniques that are less familiar to economists, financial researchers and regulators and social scientists in general.

This conference will bring the seemingly disparate researchers together, in order to share ideas and jump start future collaborations.

Early researchers coped with the limited micro-level data about large networks by adopting information-theoretic estimation techniques (e.g. the maximum entropy method).

The conference is especially interested in papers employing information-theoretic, Bayesian techniques for additional purposes.

The conference organizers encourage submissions of papers on any topic within this overall theme, with a particular emphasis on the list below. Within the list of topics of interest, papers combining the tools of information theory or other approaches for inverse problems are of particular interest.
Conference Topics

- Characterization and estimation of interdependencies in financial, natural or engineered systems
- Prediction and control of disruption cascades (e.g. propagation of defaults, failures or epidemics) in financial, natural, or engineered Systems
- Analysis of factors and empirical findings concerning network stability in the face of shocks.

Program Committee

Robin Lumsdaine (American U.)
Michael J. Stutzer (Chair; U. Colorado-Boulder)
Juan Restrepo (U. Colorado-Boulder)

Invited Speakers

Speakers
Karnik Anand (Bank of Canada)
Charlie Brummit (UC Davis)
Ian Dobson (Iowa State)
Andreea Minca (Cornell)
Camelia Minoiu (International Monetary Fund)
Edward Ott (Institute for Research in Electronics and Applied Physics)
Juan Restrepo (Colorado)
Hongdian Yang (Johns Hopkins U)

Roundtable
Raphael Levine (The Hebrew U and UCLA)
Robin Lumsdaine (American U)
Eric Renault (Brown)
Wojciech Szpankowski (Purdue)
David Wolpert (Santa Fe Institute)

Fall 2014 Conference: October 31 – November 1, 2014

Title: Recent Innovations in Info-Metrics
Location: American University

Sponsors

US Comptroller of the Currency
AU College of Arts & Sciences

Conference Objectives

The overall objective of this two-day conference is to continue the study of the foundations of info-metrics and information processing across the sciences. This is our fifth year anniversary conference.

In this conference we will continue the exploration into the basics of info-metrics, information-theoretic inference and their mathematical and philosophical foundations. A special emphasis will be on the interconnection of inferential and philosophical problems and solutions across the disciplines.

The conference will consist of Invited Talks, Invited Sessions and submitted papers.

Conference Topics

In this conference we will focus on all the topics within info-metrics that we studied in the last five years. This includes, but not limited to:

1. Information-Theoretic methods of inference
2. Info-metrics across the sciences and engineering
3. Philosophy and value of information and info-metrics
4. Information processing and nonparametric inference
5. Networks and information across the sciences
6. Complexity and information
7. Large or sparse data and information
8. Recent advancements in information theory and inference
Publications

A special volume of that conference will be published. All conference papers may be submitted following the conference. All papers will be subject to the usual review process. Presentation at the conference does not imply acceptance for publication.

We encourage all presenters to submit their paper to Amos Golan at agolan@american.edu and Aman Ullah at aman.ullah@ucr.edu with copies to damaris.carlos@ucr.edu and info-metrics@american.edu with subject line "Submission for Info-Metrics Publication." After the conference the authors of selected papers would submit their papers by January 30, 2015. The review process will complete by August 30, 2015.

Open Submissions

The conference organizers encourage submissions of papers on any topic within this overall theme with a particular emphasis on the list below.

The conference organizers encourage submissions of papers on any topic within this overall theme, with a particular emphasis on the list below. Within the list of topics of interest, papers combining the tools of information theory or other approaches for inverse problems are of particular interest.

Please submit papers to info-metrics@american.edu with subject line “Submission Fall 2014.” Submission should include a very detailed abstract-summary or preferably a draft paper. Published papers will not be accepted.

Submission Deadline: Friday, May 30, 2014

Program Committee

Luciano Floridi (Oxford)
Jeff Racine (McMaster University)
Richard Smith (U. Cambridge)
Aman Ullah (UC Riverside and Info-Metrics) - Chair
David Wolpert (Santa Fe Inst.)

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 or 202-885-3770.
For More Information

Visit our website: www.american.edu/info-metrics

Sign up for our newsletter: send an email to info-metrics@american.edu

Contact us!

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