

Solomonoff 85th Memorial Conference

Preliminary Call for Papers



30 November – 2 December 2011
Melbourne, Australia

www.Solomonoff85thMemorial.infotech.monash.edu

PRELIMINARY CALL FOR PAPERS

The Conference is held in honour and memory of the 85th birthday of Ray Solomonoff. Prospective authors are invited to submit original and unpublished work that falls within the conference theme/topics - any work directly or at least indirectly building upon or comparing with Solomonoff's work.

Conference proceedings will be fully-refereed and published with a suitable prestigious publisher. Selected papers on suitable topics are expected to be chosen to be expanded upon for journal special issues.

THEME/TOPICS

The contributions sought for this conference include, but are not restricted to, the following - insofar as they pertain to Solomonoff's work:

statistical inference and prediction, machine learning, econometrics (including time series and panel data), in principle proofs of financial market inefficiency, knowledge discovery and data mining, theories of

(quantifying) intelligence and new forms of (universal) intelligence test (for robotic, terrestrial and extra-terrestrial life), the singularity (or infinity point), philosophy of science, the problem of induction, bioinformatics, linguistics, evolutionary (tree) models in biology and linguistics, geography, climate modelling and bush-fire detection, environmental science, image processing, spectral analysis, engineering, arguments that entropy is not the arrow of time, and etc.

CONFERENCE ORGANISING COMMITTEE

General and Program Chair

- David Dowe, *Monash University*, Australia

Co-ordinator

- Dianne Nguyen, *Monash University*, Australia

Program Committee

- Andrew Barron, *Yale University*, USA
- Greg Chaitin, *IBM T.J. Watson Research*, USA
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- Bertrand Clarke, *University of Miami*, USA
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- Juergen Schmidhuber, *IDSIA*, Switzerland
- Farshid Vahid, *Econometrics*, *Monash University*
- Paul Vitanyi, *CWI*, Amsterdam



RAY SOLOMONOFF

Ray Solomonoff (1926-2009) was the originator (in 1964) of algorithmic information theory. Solomonoff's work preceded Kolmogorov (1965), from whom we have the term Kolmogorov complexity, shortly before the work of the then teenage G.J. Chaitin (1966). But, unlike the slightly later Kolmogorov and Chaitin, Solomonoff also saw the relevance of this new area to statistics, machine learning, artificial intelligence and prediction - and coined the term algorithmic probability (ALP).

Given a body of data, the algorithmic probability distribution behind Solomonoff prediction is obtained by doing a posterior-weighted averaging of the outputs of all available computable theories - with the prior probabilities of theories depending (monotonically decreasingly) upon the lengths of their encodings on the chosen Universal Turing Machine (UTM).

The vast range of application areas of the works of this gentle independent pioneer includes those listed under Theme/Topics.

Solomonoff's obituary from the New York Times (January 2010) is at:

www.nytimes.com/2010/01/10/science/10solomonoff.html
www.csse.monash.edu.au/~dld/MML.html#rjs

In the year in which Ray Solomonoff would have turned 85 and some months before the year in which Alan Turing (upon whose Universal Turing Machines much of Solomonoff's work is based) would have turned 100, this conference is timed for late 2011. It also follows 15 years after the Information, Statistics and Induction in Science (ISIS) conference in 1996 and also held in Melbourne, Australia - whose invited speakers included Ray Solomonoff, (Turing Award winner and fellow artificial intelligence pioneer) Marvin Minsky, Jorma Rissanen (of MDL) and (prominent machine learning researcher) J. Ross Quinlan.

IMPORTANT DATES

Deadline of Paper Submission: **20 May 2011**

Notification of Acceptance of Paper: **10 August 2011**

Receipt of Camera-Ready Copy: **5 September 2011**

Conference Date: **30 Nov. 2011 - 2 Dec. 2011**