

MGR. GIANFRANCO BASTI

CURRICULUM VITAE

PERSONAL DATA

- Date of birth: January 2nd 1954
- Place of birth: Rome
- Sacerdotal Ordination : Rome, December 9th 1978.
Ordered Priest for the Diocese of Rome
- Residence: Via Urbana 161, I-00184 Rome
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EDUCATION

1972-1974

Pontifical Lateran University
Rome

- B. A., Philosophy

1975 - 1980

Pontifical Gregorian University
Rome

- S.T.L., Theology

1980 - 1984

State University "La Sapienza"
Rome

- Ph.D., Philosophy
- Thesis: "On the relationship between Aristotelian-Thomistic theory of intentionality and the informational approach to cognitive functions"

1986 - 1988

Pontifical Gregorian University
Rome

- M. Phil., Philosophy

PASTORAL EXPERIENCE

1978-1992

Pontifical Major Roman Seminary
Rome

- Charged of the vocation pastoral for young people.

1992-

Diocese of Rome
Rome

- Consultant of the Vicariate of Rome, “Office for the Family Pastoral”

2002-

Diocese of Rome
Rome

- Nominated Rector of the Basilica St. Pudenziana of Rome

PASTORAL HONOURS

1993

Patriarchal St. John in Lateran Arch-Basilica
Rome

- Nominated by His Holiness the Pope John-Paul II, Coadjutor Canon of the Patriarchal St. John in Lateran Arch-Basilica

1998

State Secretary of the Holy See
Vatican City

- Nominated Chaplain of His Holiness the Pope John-Paul II

PROFESSIONAL EXPERIENCE

1987 – 1995

Pontifical Gregorian University
Rome

- Professor in Charge in the Philosophy Faculty

1988 - 1999

Pontifical Urbanian University
Rome

- Associate Professor of “Philosophy of Nature and of Science” in the Philosophy Faculty

2000–2007

Pontifical Gregorian University
Rome

- Invited Professor of “Logic” in the Philosophy Faculty

1992 -

Pontifical Lateran University
Rome

- 1992-1995: Professor in Charge of “Philosophical Anthropology” at the Philosophy Faculty
- 1995-1997: Professor in Charge of “Philosophy of Nature and of Science” at the Philosophy Faculty.
- 1997-2002: Stable Professor of “Philosophy of Nature and of Science” at the Philosophy Faculty.
- 2003- : Full Professor of “Philosophy of Nature and of Science” at the Philosophy Faculty.
- 2008-2014: Elected Dean for two terms of the Philosophy Faculty

RESEARCH INTERESTS

- Scientific Research Interests:

Since his doctoral thesis, Dr. Basti devoted his scientific research interests to the study of the relationship between classic, realistic, theory of intentionality and the informational approach to cognitive functions. These interests have been developed along two main directions:

1. Study of particular computational architectures such as “neural networks”, both as models of complex, non-linear dynamic systems (chaotic, unstable, non-stationary), and as plausible models of the physical (neurophysiologic) and informational (computational) basis of intentional behavior in humans and animals.
2. Study of the foundational problems of logic, mathematics and computability theory in relationship with several problems of the semantics of intentionality, such as the relation between extensional and intensional logic, the problem of reference, of analogy, etc.

- Philosophical Research Interests:

Strictly related to his scientific interests is the philosophical research of Dr. Basti that has been developed along two main directions:

1. The mind-body problem and its dual (neither dualistic, nor monistic) solution, typical of the Aristotelian as well as of the cognitive science approaches to it.
2. A rigorous new proposal of the dual Aristotelian and Thomistic theory of the spiritual component of the human mind, formalized through the powerful means actually offered by the so-called “formal ontology”. This discipline – as logical symbolization of the metaphysical discourse — offers indeed a rigorous approach to the study of the relationship between the mathematical (extensional) language of modern science and the content-related (intensional) language of the ordinary language, typical of philosophy and of other humanistic disciplines (ontology, ethics, philosophy of law, etc.).

SCIENTIFIC RESEARCH COLLABORATIONS

1991 - 1992

Institute of Electronic Circuits (ICE)

of the Italian National Research Council (CNR)
Genoa

- Associate Researcher for the development and the application of neural nets models to problem of pattern recognition.

1993 - 1997

Italian National Institute for Nuclear Physics (INFN)
Sect. "Rome 2, Tor Vergata"
Rome

- 1993: Associate Researcher for the development of the "WiZard" Project.
- 1994-1997: Associate Researcher for the ideation and the development of the project "Skynet" (1994-1997), for the design and the application of neural net models to problems of pattern recognition and information compression in high-energy physics experiments in the space.

1997 - 1998

Exchange Italian Office of the Bank of Italy
Rome

- Scientific Consultant for the development of parallel computation techniques (neural nets) for financial forecasting, particularly the yen/dollar exchange rate, in real time.

1999 – 2000

Western European Union Satellite Centre (WEUSC)
Madrid (Spain)

- Scientific Consultant for the development of encryption-compression algorithms of satellite images for their secure dissemination

2001-

Italian Space Agency (ASI)
Rome

- Scientific Consultant for the development of encryption-compression algorithms of satellite images for their secure dissemination.

SCIENTIFIC HONOURS AND AWARDS

- 1995 : *Neural Network Leadership Award* conferred by : *INNS-International Neural Network Society* at WCNN'95. World Conference on Neural Networks. Washington D.C., July 17-21, 1995.
- 1995 : *Chairman of the Special Sessions* : "General Aspects of Neural Networks" and "Neural Networks for Off-Line Analysis in High-Energy Physics" at the SPIE International Conference on Applications of Artificial Neural Networks, VI, Orlando FL, 17-21/4/1995.
- 1995 : *Chairman of the Special Session* : "Physics and Neural Networks" at WCNN'95. World Conference on Neural Networks. Washington D.C., July 17-21, 1995.
- 1996 : *Chairman of the Session* : "Physical Theory of Artificial Neural Networks" at the SPIE International Conference on Applications of Artificial Neural Networks, VII, Orlando FL, 8-12/4/1996.
- 1996: *Chairman of the Session*: "Image compression" at the 4th International Conference of Soft

Computing, Iizuka, Fukuoka, Japan Sept.30-Oct.5, 1996.

- 1997: *Nominated Director* of IRAFS-*International Research Area on Foundations of the Sciences* by the Pontifical Lateran University.
- 1997: *Member of the Organizing Committee* of: SPIE International Conference on Applications and Science of Artificial Neural Networks, III, Orlando FL, 21-24/4/1997.
- 1998: *Member of the Organizing Committee* of: SPIE International Conference on Applications and Science of Computational Intelligence, Orlando FL, 13-17/4/1998.
- 1998: *Member of the Editorial Board* of the International Journal *Biomedical Fuzzy and Human Science*. Journal of the Biomedical Fuzzy Systems Association, Mizumoto Laboratory, Dept. Of Information Sciences, Osaka University (Japan).
- 1999: *Member of the Organizing Committee* of: SPIE International Conference on Applications and Science of Computational Intelligence, II, Orlando FL, 4-9/4/1999.
- 2000: *Member of the Organizing Committee and Chairman* of: SPIE International Conference on Applications and Science of Computational Intelligence, III, Orlando FL, 24-28/4/2000.
- 2001: *Member of the Organizing Committee and Chairman* of: SPIE International Conference on Applications and Science of Computational Intelligence, IV, Orlando FL, 16-19/4/2001.
- 2001: *Nominated Correspondent Member of the* “Pontifical Academy St. Thomas Aquinas”
- 2002: *Member of the Organizing Committee* of: SPIE International Conference on Applications and Science of Computational Intelligence, V, Orlando FL, 1-4/4/2002.
- 2003: *Member of the Organizing Committee and Chairman* of: SPIE International Conference on Intelligent computing: theory and applications, Orlando FL, 21-27/4/2003.
- 2004: *Member of the Organizing Committee and Chairman* of: SPIE International Conference on Intelligent computing: theory and applications II, Orlando FL, 12-16/4/2004.
- 2005: *Member of the Organizing Committee and Chairman* of: SPIE International Conference on Intelligent computing: theory and applications III, Orlando FL, 28-29/3/2005.
- 2005: *Organizer as President of the Organizing Committee of the*: “STOQ’05 International Conference on *Infinity in Science, Philosophy and Theology*”, Pontifical Lateran University, November 9-11, 2005.
- 2006: *Member of the Organizing Committee and Chairman* of: SPIE International Conference on Intelligent computing: theory and applications IV, Orlando FL, 17-18/4/2006.
- 2007: *Member of the Organizing Committee and Chairman* of: SPIE International Conference on Intelligent computing: theory and applications V, Orlando FL, 16-17/4/ 2007.
- 2007: *Organizer and Chairman* of the Special Session “Biomedical Applications” at SPIE International Conference on Intelligent computing: theory and applications V, Orlando FL, April 17/ 2007
- 2008: *Member of the Organizing Committee and Chairman* of: SPIE International Conference on Intelligent computing: theory and applications VI, Orlando FL, March 17-18/ 2008
- 2009: *Main Organizer* of: "Lateran '09 International Conference: '1609-2009. From Galilei's Telescope to Evolutionary Cosmology. Science, Philosophy and Theology in Dialogue'. Lateran University, 30/11-2/12/2009". With the participation of the Nobel Laureates: George F. Smoot, Berkeley University (USA); Carlo Rubbia, CERN, Génève (Switzerland).
- 2013: *Member of the Organizing Committee and Chairman of*“Convegno Internazionale ‘Salute e Cittadinanza Biologica’. Pontificia Università Lateranense, 11-12 Aprile, 2013
- 2014: *Member of the Organizing Committee* of AISB-50, 2014 Convention. Symposium on: "Representation of Reality: Humans, Animals and Machine", London 1-4 April, 2014.
- 2014: *Member of the Organizing Committee* of IV World Congress on The Square of Oppositions, Rome, 5-9 May 2014.

SCIENTIFIC ASSOCIATIONS

1987-

SITA-International Society St. Thomas Aquinas
Rome

1988-

INNS-International Neural Network Society
Washington D.C.

1990-

IEEE-Institute for Electric and Electronic Engineering
Computer Society and Neural Network Council
Piscataway NJ

1993-

SPIE-The International Society for Optical Engineering
Bellingham WA

1993-

The New York Academy of Science
New York NY, USA

2001-

Pontifical Academy St. Thomas Aquinas
Vatican City

2013-

Brazilian Academy of Philosophy
Brazil

2014-

AISB – The Society for the Study of Artificial Intelligence and Simulation of Behaviour
London, UK.

PARTICIPATION TO INTERNATIONAL CONFERENCES, SYMPOSIA, SCHOOLS, ETC.

International Conferences (see also the respective *Proceedings* quoted in the Publications section):

- *L'anima nell'antropologia di S.Tommaso d'Aquino*, Congresso della Societa' Tomistica Internazionale, Roma, 2-5 gennaio 1986.
- *IEEE First Annual International Conference on Neural Networks*. San Diego CA, June 21-24, 1987.
- *Intelligenza naturale ed intelligenza artificiale*. XLIII Convegno del Centro Studi Filosofici di Gallarate, Gallarate (VA), Aprile 1988.
- *IEEE/INNS International Joint Conference on Neural Networks*. Washington D.C., June 18-24, 1989.
- *Second Italian Workshop. Parallel Architectures and Neural Networks*. Vietri sul Mare (SA), 26-28/4/1989.
- *International Joint Conference on Neural Networks, IJCNN-90-WASH-DC*. Washington D.C., January, 15-19,

1990.

- *Third European Conference on Science and Theology*, Geneva (CH), March 29 to April 1, 1990.
- *Third Italian Workshop. Parallel Architectures and Neural Networks*. Vietri sul Mare (SA), May 15-18, 1990.
- *IEEE/INNS International Joint Conference on Neural Networks*. San Diego CA, June 17-21, 1990
- *INNC 90 PARIS - International Neural Network Conference*, Paris, July 9-13, 1990.
- *Iizuka's International Conference on Fuzzy Logic and Neural Networks*, Iizuka (Japan), July 19-24, 1990.
- *SPIE International Conference on Applications of Artificial Neural Networks II*, Orlando FL, April 2-5, 1991.
- *Fourth Italian Workshop. Parallel Architectures and Neural Networks*. Vietri sul Mare (SA), May 8-10, 1991.
- *IEEE/INNS International Joint Conference on Neural Networks IJCNN-Seattle '91*, Seattle WA, July 8-12, 1991.
- *Fourth European Conference on Science and Theology . "Origins, Time and Complexity"*, Castelgandolfo (Rome) March 23-29, 1992
- *SPIE International Conference on Science of Artificial Neural Networks*, Orlando FL, April 21-24, 1992
- *Fifth Italian Workshop. Parallel Architectures and Neural Networks*. Vietri sul Mare (SA), May 15-18, 1992
- *IEEE/INNS International Joint Conference on Neural Networks IJCNN-Baltimore'92*, Baltimore, June 11-16, 1992
- *International Symposium on Information Sciences (ISKIT '92)*, Iizuka, Fukuoka, July 12-15, 1992
- *2nd International Conference on Fuzzy Logic and Neural Networks*, Iizuka, Japan, July 17-22, 1992
- *Secondo Workshop su reti neurali per il riconoscimento della voce*, Firenze 10-11 Dicembre, 1992
- *Pontificia Università Lateranense: "Colloquio Internazionale di Antropologia"* Roma, 11-13 Gennaio 1993. Lecture on: "Nuovi approcci al rapporto mente-corpo"
- *I.R.R.S.A.E. - MARCHE: Convegno su "Filosofia, Logica e Matematica dal periodo classico al nostro secolo"*, Ancona, 25-27 Marzo, 1993.
- *SPIE International Conference on Applications of Artificial Neural Networks IV*, Orlando FL, April 12-16, 1993
- *SPIE International Conference on Science of Artificial Neural Networks II*, Orlando FL, April 12-16, 1993
- *WCNN'93 - Portland, World Congress on Neural Networks*, Portland OR, July 11-15, 1993
- *JCNN'93 - Nagoya. Proceedings of 1993 International Joint Conference on Neural Networks*, Nagoya, Japan, October 25-29, 1993
- *SPIE International Conference on Applications of Artificial Neural Networks, V*, Orlando FL, April 5-8, 1994.
- *ICANN'94. Proceedings of the International Conference on Artificial Neural Networks*. Sorrento, Italy, May, 26-29, 1994
- *Fondazione Giorgio Cini, Isola di S.Giorgio Maggiore. Convegno Internazionale "Le origini dell'universo"*, Venezia, 5/9/1994. Lecture on: "In Principio... Tempo e Creazione".
- *Università degli Studi "Tor Vergata". International Conference on "Models of cognition and complexity theory"*, Rome, 17-19/11/1994. Lecture on: "The cognitive role of chaos in neural information processing"
- *SPIE International Conference on Applications and Science of Artificial Neural Networks, I*, Orlando FL, 17-21/4/1995.
- *WCNN'95. World Conference on Neural Networks*. Washington D.C., July 17-21, 1995.
- *SPIE International Conference on Applications and Science of Artificial Neural Networks, II*, Orlando FL, 9-12/4/1996.
- *4th International Conference of Soft Computing*, Iizuka, Fukuoka, Japan Sept.30-Oct.5, 1996.
- *International School of Biocybernetics: «Processes in the perception representation mechanisms»*, organized by "Istituto Italiano per gli Studi Filosofici" (Napoli) and by "Istituto di Biocybernetica", CNR (Napoli). Ischia 20-26 Ottobre 1996. Lectures on: "Neural images and neural coding the semantic problem in cognitive neuroscience"; "The cognitive role of chaos in neural information processing".

- *Symposium on: “Le radici del nostro tempo: assenza di Dio, nihilismo culturale e crisi epistemologica”, organized by Centro Studi Domenicano di Bologna. Modena 22 Marzo 1997. Debate between E. Severino e G. Basti on: “Le radici del nihilismo: una questione aperta tra metafisica cristiana e modernità”.*
- *SPIE International Conference on Applications and Science of Artificial Neural Networks, III, Orlando FL, 21-24/4/1997. Lecture on: “A parallel implementation of a new compression algorithm for S.A.R. images”.*
- *International School of Biocybernetics: «Neuronal bases and psychological aspects of consciousness», organized by “Istituto Italiano per gli Studi Filosofici” (Napoli) and by “Istituto di Biocibernetica”, CNR (Napoli). Ischia 13-18 Ottobre 1997. Lecture on: “Consciousness and Computability in Human Brain”.*
- *Convegno Internazionale “Credere – non credere. Riflessioni e proposte di fronte alla non credenza oggi”, organizzato dal Pontificio Istituto Patristico «Augustinianum» e dal Pontificio Consiglio della Cultura. Roma, 27-29 Novembre 1997. Lecture on: “Nuovi rapporti tra scienza e fede”.*
- *SPIE International Conference on Applications and Science of Computational Intelligence, Orlando FL, 13-17/4/1998.*
- *Convegno Internazionale «Dio è morto in televisione? Linguaggio biblico e comunicazione oltre la babele contemporanea». Roma 27-29 Settembre 1998. Lecture on: “Il linguaggio multimediale e la formazione di una nuova coscienza religiosa”.*
- *International Conference «Origin of the Intelligent Life in the Universe. Evolution, Distribution and Originality», organized by the “International School of Plasma Physics P. Caldirola”. Villa Monastero, Varenna (Lecco), 28/9-1/10/1998. Lecture on: “Metalogical and metaphysical foundations of intentionality”.*
- *Organizzatore dell' «IRAFS-98, International Symposium on "Foundations in Mathematics and Biology: problems, prospects, interactions", Rome, Pontifical Lateran University, November 26-27, 1998» in qualità di Direttore dell'IRAFS, International Research Area on Foundations of the Sciences.*
- *SPIE International Conference on Applications and Science of Computational Intelligence II, Orlando FL, 5-9/4/1999. Lectures on: "New theorem for the definition of the optimal neural structure for financial forecasting: applications to stochastic time-series" e "Lossy plus lossless residual encoding with dynamic pre-processing for Hubble Space Telescope FITS images".*
- *Forum Engelberg, 11th Conference: “Neuroscience. Is it the last human frontier?”, Engelberg (Geneva), March 21-24, 2000, organizzato dal Governo della Confederazione Elvetica; Commissione Europea; Ministero Italiano dell'Università e della Ricerca Scientifica; Cantone di Ginevra; European Science Foundation, Strasburgo; Swiss National Science Foundation, Berna. Invited Lecture on: “The Cognitive Science of Intentionality. Its Metalogical and Metaphysical Foundations”.*
- *International Conference “The emergence of Mind”, Milan March 30-31, 2000, organized by Fondazione Carlo Erba. Invited Lecture on: “Intentionality and Mind-Body Problem. Mind beyond consciousness”.*
- *SPIE International Conference on Applications and Science of Computational Intelligence III, Orlando FL, 24-27/4/2000. Lectures on: “Novel SAR images compression with de-speckle algorithm» e «A fast block-sorting algorithm for lossless data compression”*
- *SPIE International Conference on Applications and Science of Computational Intelligence IV, Orlando FL, 16-20/4/2001. Invited to join the International Panel «Computational Intelligence. Prospects for the New Millennium».*
- *Organizer of IRAFS-2002. International Conference on: «Foundations and the Ontological Quest. Prospects for the New Millennium», Rome, Pontifical Lateran University, January 7-10, 2002.*
- *SPIE International Conference on Applications and Science of Computational Intelligence V, Orlando FL, 1-4/4/2002. Lectures on: “Neural self-adapting architecture for video-on-radio devices”; “Security encryption for video-on-radio devices”.*
- *Convegno di studi su: «Implicazioni Ontologiche dei Saperi Scientifici. Questioni e prospettive nel dialogo fra scienza e teologia. Roma, Pontificia Università Lateranense, 23-25/1/2003. Invited Lecture on: «L'ontologia formale. Strumento per un dialogo rigoroso fra scienze naturali e scienze umane».*
- *SPIE International Conference on Intelligent computing: theory and applications, Orlando FL, 22/4/2003. Organization of a Special Session on: “Transfer Phenomena Processing”, in collaboration with Prof.*

Rodolfo Guzzi, dell'ASI, Agenzia Spaziale Italiana and with Antonio Luigi Perrone, Secretary of IRAFS, International Reserach Area on Foundations of the Sciences (PUL),

- *SPIE International Conference on Intelligent computing: theory and applications*, Orlando FL, 21-25/4/2003. Partecipation as member of the *Organizing Committee* e di *Chairman*, and presentation of a Invited Lecture on: "A fast hybrid block-sorting algorithm for the lossless interferometric data compression".
- *Meeting of the European Board of the John Templeton Foundation*, Paris, France, 2-4/5/2003. Invited Presentation on: "A presentation of the STOQ (Science, Theology and the Ontological Quest) Project among three Roman Pontifical Universities".
- *SPIE International Conference on Intelligent computing: theory and applications II*, Orlando FL, 12-16/4/2004. Organizer of the whole Session as member of the *Organizing Committee* and *Chairman* of the Session.
- *SPIE International Conference on Intelligent computing: theory and applications V*, Orlando FL, 16/4/2007. Invited Lecture on: "Automatic pattern recognition applied to thermal imaging, for large-scale breast cancer detection".
- *SPIE International Conference on "Evolutionary and Bio-Inspired Computation: Theory and Applications III"*. Orlando, Florida, USA, 14-15/4/2009.
- *The World Phenomenological Institute, Italian Section. V Convegno Internazionale di Fenomenologia*, Bari, 26-27/5/2011". Invited lecture on: "L'ontologia dello spirito in Tommaso d'Aquino ed Edith Stein".
- *Euresis. Association for the Promotion of Scientific Endeavour. International Symposium on 'Brain, mind and language. The mystery of the unity of the self'* San Marino, August 24-26, 2011. Invited lecture on: "From the mind-brain to the person-brain relationship: the intentional paradigm in cognitive neurosciences".
- *PUL Faculty of Philosophy. 2012 Symposium on: "Cornelio Fabro: Essere, Pensiero, Trascendenza. Verso una Metafisica per il Terzo Millennio"*, Rome 22/3/2012. Lecture on: "La teoria complexa della cogitativa in Cornelio Fabro: dall'essere al pensiero".
- *CLE – Centro de Lógica, Epistemologia e História de Ciência. 1st CLE-Colloquium for Philosophy and History of Formal Sciences, March 24-27, 2013, University of Campinas (Brazil)*. Invited lecture on: "From Formal Logic to Formal Ontology: The New Dual Paradigm in Natural Sciences".
- *Dept. of Mathematics, University of Campinas. X SNHM 2013 – X Seminário Nacional de História de Matemática, March 24-27, 2013*. Lecture on: "A new causal theory of reference in the formal ontology of dissipative structures".
- *PUL Faculty of Philosophy & Camillianum Institute. 2013 International Conference on: "Salute e Cittadinanza Biologica"*. Rome 11-12/4/2013.
- *SPIE International Conference on: "Independent Component Analyses, Compressive Sampling, Wavelets, Neural Net, Biosystems, and Nanoengineering"*, Baltimore (USA), May 1-3, 2013. Lecture on: "Stem Cell Re-Programming with Physical Energy. The Dissipative QFT New Perspective".
- *WCP2013- XXIII World Congress of Philosophy, Athens University Campus, August 4-10, 2013, Special Session on "Phenomenology of life and ontology or 'metaphysica generalis'"*. Lecture on: "For a constructive post-modernity. Toward a scientific ontology of life and person".
- *AISB-50 2014 Convention. Symposium on: "Representation of Reality: Humans, Animals and Machine"*, London 1-4 April, 2014. Invited lecture on: "The quantum field theory (QFT) dual paradigm in fundamental physics and the semantic information content and measure in cognitive sciences".
- *IV World Congress on The Square of Oppositions, Rome, 5-9 May 2014*. Plenary speech on: "*Scientia una contrariorum*. Paraconsistency, induction and formal ontology".

Lectures, Tutorials and Short Courses

- *Russian Academy of Sciences. Center for Mathematical Problems of Biology*, Pushchino (Moscow Region) 5-12/2/1991. Invited Tutorial on: "Chaotic models of neural networks".
- *Istituto per i Circuiti Elettronici" del CNR*, Genova, 8/3/1991. Invited Tutorial on: "Modellizzazione di una rete neurale non stazionaria".
- *CSELT, Centro Studi e Laboratori Telecomunicazioni*, Torino, 15/3/1991. Invited Tutorial on: "Un modello

di rete neurale non stazionaria per il trattamento di input funzione del tempo".

- *Dip. di Matematica della II Università di Roma "Tor Vergata"*, Roma, 7/6/1991. Invited Tutorial on: "Un modello di rete neurale non-lineare per l'analisi di correlazioni di ordine elevato in pattern rumorosi".
- *Princeton Theological Seminary*, Princeton N.J. (23/7/1991). Invited Lecture: "Time And Number, Being And Intentionality: Some Reflections On The Aristotelian Approach".
- *Dept. of Mathematics, University of Princeton*, Princeton N.J.(19-26/7/1991). One week workshop on Mathematics Foundation on invitation by: Prof. Edward Nelson.
- *Dip. di Elettronica, Politecnico di Torino*, Torino (15/11/91). Invited Tutorial on: "Un modello di rete asimmetrica non-stazionaria per il riconoscimento di pattern in ambiente rumoroso".
- *Centro Studi Tomistici. Serate di Filosofia su "Tomismo e pensiero contemporaneo"*, Modena (20/5/1992). Invited Lecture on: "Il nichilismo e i fondamenti della matematica: le radici forti del pensiero debole".
- *"Biosistemi e complessità Scuola CNR (Gruppo Nazionale di Bioingegneria) per il dottorato di ricerca in bioingegneria"*, Bressanone (BZ), 27-30 settembre 1993. Two Invited Tutorials on: "Per un ruolo costitutivo del caos deterministico nei sistemi neurali biologici ed artificiali"
- *"Incontro del Gruppo 'Scienza e Fede', Primavera 1994"*. Ariano (Lucca), Maggio 6-8, 1994. Invited Lecture on: "La dottrina dell'anima spirituale, forma del corpo in S.Tommaso d'Aquino".
- *Centro San Domenico di Bologna*. Invited Lecture on: "Il problema dell'anima". Imola, 24/10/1994
- *Dip. INFOCOM Fac. Ingegneria Università degli Studi "La Sapienza"*. Roma, 1/6/1995. Invited Lecture on: "Principi di codifica e trasmissione dell'informazione in sistemi caotici"
- *Banca d'Italia. Ufficio Italiano Cambi*. Roma 9-13/10/1995. Serie di lezioni su : "Reti neurali : teoria ed applicazioni economiche".
- *Associazione "Rivista Nuova Civiltà delle Macchine", Seminari Interdisciplinari di Scienza e Teologia*. Roma, Università di Roma "La Sapienza", Facoltà di Economia e Commercio e Forlì, Hotel della Città, 3-4/11/1995. Organizer of an Interdisciplinary Workshop on "The Foundations Quest: from Mathematics to Wisdom", with the participation of: Prof. E.Nelson of the Dept. of Mathematics, Princeton University, Princeton N.J. and of Prof. E.De Giorgi of Scuola Normale Superiore di Pisa.
- *Italian Exchange Office of Bank of Italy*. Rome, February 1st 1997. Introductory Workshop on the Joint Research Project: "Development of a Parallel Computation System Applied to Financial Market Forecasting" between: *Italian Exchange Office of the Bank of Italy and Pontifical Lateran University, IRAFS-Interantional Research Area on Foundations of the Sciences..*
- *Chair «St. Thomas Aquinas» by Pontifical Lateran University*, Rome May 25th, 1997. Lecture on: "Modern Physics and Eucharistic Mystery".
- *Università della Terza Età di Praia a Mare (CS)*, Praia a Mare 10 Febbraio 1998, Lecture on: "Creazione e moderne teorie cosmologiche"
- *Incontro Annuale Docenti Cattolici delle Scuole d'ogni Ordine e Grado «La scuola verso il 2000», organizzato dall'Ufficio Scuola del Vicariato di Roma*, Roma, 22-24 Settembre 1998, relazione dal titolo: "In principio... Creazione ed Evoluzione".
- *IJCNN-'99, International Joint Conference on Neural Networks, organized by IEEE, Neural Network Council and INNS-International Neural Network Society, Washington D.C. 10/7/1999. Special Session of World Bank on "Financial Applications"*. Tutorial on: "An Optimal Criterion of Neural Network Structure Selection for Financial Forecasting".
- *Berkeley Institute for Soft Computing Seminars (BISC Seminars) del Dip. di Computer Science dell'Università di Berkeley, CA (USA)*, April 20th, 2000. Invited Seminar on: "Information Coding in Chaotic Systems".
- *IJCNN-'01, International Joint Conference on Neural Networks, organized by IEEE, Neural Network Council and INNS-International Neural Network Society, Washington D.C. 15/7/2001*. Tutorial on: "Some Principles of Computational Dynamics in Convergent, Oscillatory, and Chaotic Neural Networks"
- *Ettore Majorana Centre for Scientific Culture, Erice. International School on Neural Nets "E. R. Caianiello", 5th Course: «From Synapses To Rules: Discovering Symbolic Rules From Neural Processed Data», Erice-Sicily, 25 February – 7 March 2002*. Two Classes on: "The Puzzle of Intentionality, its Metaphysical and

Metalogical Foundations”.

- *Arcidiocesi di L'Aquila. Progetto Cultura. «Due vie una verità: scienza e fede», L'Aquila, 11-13 Marzo, 2002.* 13 Marzo 2002, Lecture on: “Reasoning for Believing. The Reasonableness of Faith”.
- *Servizio Nazionale della CEI per il Progetto Culturale, Fondazione Giacomo Lerario, Istituto Veritatis Splendor, Convegno su «La questione della verità. Filosofia, Teologia, Scienze», Bologna, 10-11 Maggio, 2002.* 11 Maggio 2002, Chairman of the Section: “Analitici ed Ermeneutici sull'idea di Verità”.
- *Dominican Institute of Philosophy in Bologna, August 9-15, 2002:* Five Classes at the Summer School on “The Mystery of Knowledge and the Mind-Body Problem”.
- *George Washington University, School of Engineering and Applied Science, Washington D.C. 17/4/2003.* Seminario dal Titolo: «The Institute for New Media Technology and Art at PUL. Short Presentation of the Project».
- *ASI, Agenzia Spaziale Italiana, Roma 10/6/2003.* Seminar on: «Lossy plus lossless residual encoding with dynamic pre-processing».
- *Pontificia Università Gregoriana, Progetto STOQ, Roma 13-28/2/2004.* Short Course on: «Connectionism, eliminativism and the mind-body relationship».
- *Pontificio Ateneo Regina Apostolorum. Progetto STOQ, Roma, 16/3/2004. Conferenza Pubblica dal Titolo: «Mente-Corpo e Scienze Cognitive».*
- *Rovigo, Sala del Comune 16/6/2004. Conferenza Pubblica e Dibattito con il Prof. Giuseppe Toniolo dell'Università di Padova organizzata dal «Movimento per la Vita» su: «La Persona Umana: Scienza, Ontologia e Teologia a confronto».*
- *Gubbio, 8-10/10/2004. Serie di Lezioni patrocinate dall'Assessorato alla Sanità della Regione Umbria sul tema: «L'Approccio Intenzionale alle Scienze Cognitive».*
- *Detroit, MI (USA), March 21-25, 2005. Lecture Series with A.L. Perrone (PUL) on: “Intelligent computation applied to breast cancer infrared imaging”, organized by the: International Society of Medical Thermography. Thermoscan Inc., Huntington Wood, Detroit MI (USA).*
- *Washington DC, USA, March 31, 2005. Seminar with A. L. Perrone (PUL) on: “The International School of New Media Art, Law and Technology. A collaboration between GWU and PUL”, given to the Faculty Staff of SEAS ((School of Engineering and Applied Sciences) of the George Washington University, Washington D.C., (USA).*
- *Bologna 19/11/2005. Invited Lecture on: “Ontologia formale: per una metafisica post-moderna” at the Symposium: Relazione al Convegno: Il problema dei fondamenti: da Aristotele e Tommaso d'Aquino all'ontologia formale, organized by the Institute: Veritatis Splendor of the Italian Bishop Conference (CEI).*
- *Roma 21/2/2006. Pontificio Ateneo Regina Apostolorum, Rome: 2 Lectures on “Mind-Body and Cognitive Sciences”.*
- *Roma 14/11/2006. Cultural Meetings for University Students at S. Ivo alla Sapienza. Invited Lecture on: “The origins of Universe: Science, Philosophy and Faith. The Rationality of Faith in the Post-Modern Age”*
- *Center of Study “Philoctetes”, New York, 27/1/2007. Participation at the Panel “The Mystery of Mind”, with an address on: “The Mystery of Mind: Human Person and Intentionality”.*
- *Roma, 6-7/3/2007. Second Interdisciplinary Canon Law Meeting on: “Canon Law, Anthropology and Personalism”. Invited Lecture on: “Human person as Christian foundation of the Canon Law”.*
- *Pontremoli, Italy 21/4/2007, International Conference on “Bible and Science, a Century-Old Confrontation”, organized by BIBLIA, Laic Association of Biblical Culture, 20-22/4/2007. Invited Lecture on: “Origine scientifica dell'universo. Sfida per un credente (Scientific Origins of the Universe. A Challenge for the Believer)”.*
- *Portogruaro, Italy 25/10/2007. Symposium on “Christian Thought Challenged by Complexity”, organized by “Center J. Maritain”, 25/10/2007. Study Seminar on: “Ontologia formale: una metafisica per la post-modernità. Per un dialogo con la scienza nell'età post-moderna (Formal ontology: a metaphysics for the post-modern age. For the dialogue with science in a post-modern age)”.*

- *Rome Italy, 5/3/2008.* Thid Interdisciplinary Canonic Law Meeting on: “Norms and Rules in the Life and in the Law”. Invited Lecture on: “Regolarità e leggi nella scienza (*Rules and Laws in Science*)”.
- *Rome, Italy, 19/4/2008.* III National Conference of SEPI, Italian Section of the *Society for the Exploration of the Psychotherapy Integration*, On “Which Science for the Psychotherapy?”, 18-20 Aprile 2008. Lecture on: “Logica della scoperta e paradigma intenzionale nelle scienze cognitive (*Logic of the Discovery and Intentional Paradigm in the cognitive sciences*)”.
- *Modena, Italy, 4/10/2008.* Istituto Superiore di Scienze Religiose. Opening Lecture of the Academic Year 2008-9: “Ragionare per credere. La ragionevolezza della fede nell’età post-moderna” (*Reasoning for Believing. Faith Rationality in the Post-Modern Age*).
- *Roma, 26/2/09.* Convegno: "1609-2009. Quattrocento Anni dal 'Sidereus Nuncius'". Lecture on: "In ricordo del Prof. Pietro Giustini".
- *Roma, 11/3/09.* Roma, Pontificia Università Lateranense, Cattedra S. Tommaso d'Aquino e il Pensiero Contemporaneo. Lecture on: “Epistemologia aristotelico-tomista e neuroscienze cognitive”.
- *Pistoia, 10/9/09.* 23° Settimana Teologica, 7-11 Settembre, 2009. Lecture on: “Anima, corpo, informazione”.
- *Bologna, 20/10/09.* Convegno di Studi: "L'Eredità dell'Occidente: Cristianesimo Europa Nuovi Mondi. Centro S. Domenico, 19 -21 ottobre 2009". Lecture on: "Ontologia, etica, religione e pensiero scientifico".
- *Perugia, 3/11/09.* Università degli Studi: Convegno con presentazione del libro: "Galileo Galilei, 'Sidereus Nuncius'. Trad. di Pietro A. Giustini, a cura di Flavia Marcacci". Lecture on: "Le teorie scientifiche e le ipotesi: questione e metodo galileiano".
- *Roma, 25/11/09.* Pontificia Università Lateranense. Convegno: "Oltre la crisi. Elementi per il Dialogo tra Culture e Religioni". Lecture on: "La proposta dell'ontologia formale. Al servizio del dialogo fra saperi e culture".
- *Roma, 30/11/09.* Organizzazione del: "Lateran '09 International Conference: '1609-2009. From Galilei's Telescope to Evolutionary Cosmology. Science, Philosophy and Theology in Dialogue'. Lateran University, 30/11-2/12/2009". Con la partecipazione dei Premi Nobel: George F. Smoot, Berkeley University (USA); Carlo Rubbia, CERN, G n ve (Switzerland). Opening Lecture.
- *Roma, 1/12/09.* "Lateran '09 International Conference: '1609-2009. From Galilei's Telescope to Evolutionary Cosmology'. Science, Philosophy and Theology in Dialogue. Lateran University, 30/11-2/12/2009". "Lateran '09 International Conference: '1609-2009. From Galilei's Telescope to Evolutionary Cosmology'. Science, Philosophy and Theology in Dialogue. Lateran University, 30/11-2/12/2009". Lecture on: "Divine Cusality vs. Physical Causality. The Formal Ontology Approach".
- *Roma, 22/9/2010.* “La questione antropologica. Visioni a Confronto, Roma, 22-23 Novembre, 2010”, Convegno organizzato dalla Facolt  di Filosofia della PUL in collaborazione col Vicariato di Roma e il Centro Italiano di Ricerche Fenomenologiche. Conferenza dal Titolo: “Ontologia formale, uno strumento per il dialogo inter-disciplinare e inter-culturale”.
- *Bologna, 16/02/2011.* “V Seminario di Scienza e Filosofia: ‘Indagare la mente. Chi sono io?’, Bologna, 14-18 Febbraio 2011”, organizzato dallo Studio Filosofico Domenicano e dalla Facolt  di Scienze Fisiche, Matematiche e Naturali. Conferenza dal Titolo: “Le origini: dall’Intelligenza Artificiale alle Neuroscienze Cognitive”.
- *Bologna, 17/02/2011.* “V Seminario di Scienza e Filosofia: ‘Indagare la mente. Chi sono io?’, Bologna, 14-18 Febbraio 2011”, organizzato dallo Studio Filosofico Domenicano e dalla Facolt  di Scienze Fisiche, Matematiche e Naturali dell’Universit  di Bologna. Conferenza dal Titolo: “Dall’approccio rappresentazionale all’approccio intenzionale nelle Neuroscienze Cognitive”.
- *Bari, 27/05/2011.* “V Convegno Internazionale di Fenomenologia, Bari, 26-27 Maggio, 2011”, organizzato da: The World Phenomenological Institute, Italian Section, Universit  di Bari, ASUS-Accademia di Scienze Umane e Sociali, con il patrocinio del Presidente della Repubblica Italiana.

- Conferenza dal Titolo: “L’ontologia dello spirito in Tommaso d’Aquino ed Edith Stein”.
- *San Marino, 25/08/2011*. “International Symposium on ‘Brain, mind and language. The mystery of the unity of the self’ August 24-26, 2011. Organizzato da: Euresis. Association for the Promotion of Scientific Endeavour. Conferenza dal Titolo: “From the mind-brain to the person-brain relationship: the intentional paradigm in cognitive neurosciences”.
 - *Shanghai, Cina, 2/09/2011*. Normal University of Shanghai, Faculty of Philosophy, Seminario ai Dottorandi dal titolo: «Formal Ontology, a Powerful Tool for the Interdisciplinary and Intercultural Dialogue».
 - *Shanghai, Cina, 4/09/2011*. Normal University of Shanghai, Faculty of Philosophy, Seminario ai Dottorandi dal titolo: «Heart-Mind Entailment. The Intentional Paradigm in Cognitive Sciences».
 - *Roma, 3/12/2011*. “L’avventura educativa. Antropologia, pedagogia, scienze”. Convegno organizzato dalla Facoltà di Filosofia della PUL Conclusioni del Convegno dal Titolo: “Il ruolo della famiglia nella sfida educativa”.
 - *Bologna, 23/02/2012*. “VI Seminario di Scienza e Filosofia: ‘Indagare la Mente: la Persona e il Dolore’, Bologna, 20-24 Febbraio 2012”, organizzato dallo Studio Filosofico Domenicano e dalla Facoltà di Scienze Fisiche, Matematiche e Naturali. Conferenza dal Titolo: “Persona, Intersoggettività e Dolore”.
 - *Bologna, 24/02/2012*. “VI Seminario di Scienza e Filosofia: ‘Indagare la Mente: la Persona e il Dolore’, Bologna, 20-24 Febbraio 2012”, organizzato dallo Studio Filosofico Domenicano e dalla Facoltà di Scienze Fisiche, Matematiche e Naturali. Conferenza dal Titolo: “Persona e Mistica del Dolore”.
 - *Roma, 2/03/2012*. “In ricordo di Shahbaz Bhatti”. Convegno organizzato dalla Facoltà di Filosofia della PUL, presieduto dal Decano Prof. Gianfranco Basti, 2 Marzo 2012. Introduzione al Convegno.
 - *Roma, 22/3/2012*. “PUL Faculty of Philosophy. 2012 Symposium on: ‘Cornelio Fabro: Essere, Pensiero, Trascendenza. Verso una Metafisica per il Terzo Millennio’”, Rome 22/3/2012. Lecture on: “La teoria complexa della cogitativa in Cornelio Fabro: dall’essere al pensiero”.
 - *Campinas (Brazil), 24/3/2012*. “CLE – Centro de Lógica, Epistemologia e História de Ciência. 1st CLE-Colloquium for Philosophy and History of Formal Sciences, March 24-27, 2013, University of Campinas (Brazil)”. Invited lecture on: “From Formal Logic to Formal Ontology: The New Dual Paradigm in Natural Sciences”.
 - *Campinas (Brazil), 26/3/2012*. “X SNHM 2013 – X Seminário Nacional de História de Matemática, March 24-27, 2013”. Invited Lecture on: “A new causal theory of reference in the formal ontology of dissipative structures”.
 - *Rome, 12/4/2013*. “2013 International Conference on: “Salute e Cittadinanza Biologica”, organized by: PUL Faculty of Philosophy & Camillianum Institute. Rome 11-12/4/2013. Lecture on: “Il rischio di nuove eteronomie: la neuroetica”
 - *Baltimore (USA)*. “SPIE International Conference on: ‘Independent Component Analyses, Compressive Sampling, Wavelets, Neural Net, Biosystems, and Nanoengineering’”, Baltimore (USA), May 1-3, 2013. Lecture on: “Stem Cell Re-Programming with Physical Energy. The Dissipative QFT New Perspective”.
 - *Athens (Greece), 6/8/2013*. “WCP2013- XXIII World Congress of Philosophy, Athens University Campus, August 4-10, 2013, Special Session on “Phenomenology of life and ontology or ‘metaphysica generalis’”. Lecture on: “For a constructive post-modernity. Toward a scientific ontology of life and person”.
 - *London (UK), 1/4/2014*. “AISB-50 2014 Convention. Symposium on: ‘Representation of Reality: Humans, Animals and Machine’, London 1-4 April, 2014. Invited lecture on: “The quantum field theory (QFT) dual paradigm in fundamental physics, and the semantic information content and measure in cognitive sciences”.
 - *Rome, 5/5/2014*. “IV World Congress on The Square of Oppositions, Rome, PUL, 5-9 May 2014. Plenary speech on: “*Scientia una contrariorum*. Paraconsistency, induction and formal ontology”.

PARTICIPATIONS AND ADVICES TO RADIO-TELEVISION PROGRAMS

1993 - 2001

LUX-VIDE Film

Rome

- Theological and Biblical Consultant of the Project “BIBLE” within which 20 movies on the Ancient and New Testament characters have been produced, in an International Collaboration, including among all in time: RAI (Italy), Turner Television Productions (USA), Discovery Channel (USA), Beta-Film (Germany).

The television movies were broadcasted in more than 60 countries all over the world (Italy, USA and most of the European countries included), with globally more than 2 billions of viewers.

1995-

RAIUNO. RAI, Radiotelevisione Italiana

Rome

- Participation and Advice to several programs on the Science-Religion topics.

2000-

SAT2000. Satellite Television of the Italian Catholic Church

Rome

- Participation and Advice to several programs on the Science-Religion topics.

PUBLICATIONS

BOOKS

1. BASTI G., *Il rapporto mente-corpo nella filosofia e nella scienza*, Edizioni Studio Domenicano, Bologna, 1991, 300pp. (Philosophia 8).
2. BASTI G., *Filosofia dell'uomo*, Edizioni Studio Domenicano, Bologna, 1995, 390pp. (Philosophia 21). [Second Edition] 2003; [Third Edition] 2009).
3. BASTI G. & PERRONE A.L., *Le radici forti del pensiero debole: dalla metafisica, alla matematica, al calcolo*, Il Poligrafo e Pontificia Università Lateranense, Padova-Roma, 1996, 332pp. (Percorsi della scienza. Storia testi e problemi, 7).
4. BASTI G., BARONE F., TESTI C. (EDS.), *Il fare della scienza. I fondamenti e le palafitte*, Il Poligrafo, Padova, 1997. Contributi di: S.J.Jaki, C.A. Testi, G. Basti, J.J. Sanguineti, L. Pozzi, F. Barone, G. Giorello, M. Marsonet, M. Matteuzzi, A. Massarenti, E. De Giorgi, M. Forti, G. Lenzi, A.L.Perrone. 310pp. (Supplemento alla Rivista *Contratto, Rivista di filosofia tomista e filosofia contemporanea*).
5. BASTI G., *Filosofia della natura e della scienza*. Vol.I: *I fondamenti*, Edizioni della Pontificia Università Lateranense, Roma 2002, 523pp. (Dialoghi di Filosofia. Sezione Manuali, 1). English Translation In Press.
6. BASTI G & TESTI C.A. (Eds.), *Analogia e autoreferenza, Marietti 1820*, Genova-Milano, 2004, 392pp.
7. BASTI G., *Filosofia del hombre*, Istituto Teologico S. Idelfonso, Toledo, 2011.
8. BASTI G. & GHERRI P. *Logica e Diritto: tra scoperta ed argomentazione. Atti della Giornata canonistica interdisciplinare*, Lateran University Press, Vatican City, 2012, 443pp.
9. ANGELA ALES-BELLO, GIANFRANCO BASTI, ANNA MARIA PEZZELLA (Eds.), *L'avventura educativa. Antropologia, pedagogia, Scienze*, Lateran University Press, Città del Vaticano, 2013, 182pp
10. BASTI G., *The formal logic of the natural realism*, Sociedade Brasileira de Historia de Matematica, Campinas, 2014 (In Press).

ARTICLES

1. BASTI G., A cybernetical, operational re-proposal of the Aristotelian-Thomistic theory of intentionality. In *Energieia. Etudes Aristotéliennes Offertes à Mgr. Antonio Iannone*, Centre International d'Etudes Platoniciennes et Aristotéliennes, Vrin, Paris, 1986, 322-349.
2. BASTI G., L'uso di modelli computazionali in psicofisiologia ed il principio gnoseologico di rappresentazione, *Epistemologia*, (1986)**IX-1**:123-150 (with Abstract in English).
3. BASTI G., L'istanza analogica nelle scienze del cervello, *Epistemologia*, (1986)**IX-2**:233-264 (with Abstract in English).
4. BASTI G., Una riproposizione operativa della fisica aristotelico-tomista dell'intenzionalità. In A.LOBATO (Ed.), *L'anima nell'antropologia di S.Tommaso d'Aquino*, Atti del Congresso della Società Tomistica Internazionale, 2-5 gennaio 1986, Ed. Massimo, Milano, 1986, 483-510.
5. BASTI G., Cognitive neuroscience, intentionality and realism. The philosophical importance of the connectionist approach. In CAUDILL M.-BUTLER CH. (Eds.), *Proceedings of IEEE First Annual International Conference on Neural Networks. San Diego CA, June 21-24, 1987*, San Diego, 1987, IV:795-817.
6. BASTI G., La formazione del verbum come operazione spirituale di un'anima razionale atto di un corpo. In: G.BASTI ET ALII, *Homo loquens. Uomo e linguaggio. Pensiero, cervelli e macchine*, a cura di A.LOBATO, Ed.Studi Domenicani, Bologna, 1989, 49-76.
7. BASTI G., Modelli connessionisti della conoscenza e teoria tomista dell'atto cognitivo. In A.LOBATO (a cura di), *Homo loquens*, cit., 211-242.
8. BASTI G., Conoscenza della natura e responsabilità del sapere scientifico, *La Nuova Critica. Nuova Serie*, (1988)**5-6**: 51-84.
9. BASTI G., Cervello, informazione, pensiero: la rilevanza filosofica dello studio informazionale della mente, *Cultura & Libri*, (1989)**50**: 5-34.
10. BASTI G., Le scienze cognitive: un ponte tra intelligenza naturale ed intelligenza artificiale. In E.AGAZZI, G.BASTI ET ALII, *Intelligenza Naturale ed Intelligenza Artificiale. Contributi al XLIII Convegno del Centro Studi Filosofici di Gallarate, Aprile 1988*, a cura di S.BIOLO, Ed.Marietti, Genova, 1990, 117-144.
11. BASTI G., Breve bibliografia ragionata su intelligenza naturale ed intelligenza artificiale, in S.BIOLO (a cura di), *Intelligenza naturale ed intelligenza artificiale*, cit., 229-251.
12. BASTI G. & PERRONE A.L. On the cognitive function of deterministic chaos in neural networks, in *Proceedings of IEEE/INNS International Joint Conference on Neural Networks. Washington D.C., June 18-24, 1989*, Wahington, 1989, I:657-663.
13. BASTI G. CIMAGALLI V., PASERO E., GIONA M. & PERRONE A.L., An asymmetrical spin-glass model of long-term memory in a dynamic network architecture, in *Proceedings of the International Joint Conference on Neural Networks, IJCNN-90-WASH-DC. Washington D.C., January, 15-19, 1990*. Washington, 1990, I, 333-336.
14. BASTI G. & PERRONE A.L., Time-dependent short-term memories in neural networks, in E. CAIANIELLO (Ed.), *Second Italian Workshop. Parallel Architectures and Neural Networks. Vietri sul Mare (SA), 26-28/4/1989*, World Publishing, London-Singapore, 1990, 69-80.
15. BASTI G., CIMAGALLI V., PASERO E., GIONA M. & PERRONE A.L., Some informational properties of the chaotic dynamics in neural networks, in E.V.HOLDEN & V.I.KRYUKOV (EDS.), *Neurocomputers and Attention*, vol.I: Neurobiology, Synchronisation and Chaos, Manchester U.P., Manchester, 1991, 228-253.
16. PERRONE A.L., GIONA M. & BASTI G., Information storage and relaxation in biological systems, in *Relaxation and Related Topics*, I.A.CAMPBELL & C.GIOVANNELLA (EDS.), NATO ASI Series, Series B: Physics, Vol.222, Plenum Press, New York, 1990, 215-222.
17. BASTI G., PERRONE A.L., GIONA M., CIMAGALLI V., MORGAVI G., PASERO E., Invariant extraction from complex dynamic systems in chaotic neural nets, In: E. CAIANIELLO (Ed.), *Third Italian Workshop. Parallel Architectures and Neural Networks. Vietri sul Mare (SA), May 15-18, 1990*, World Publishing, London-Singapore, 1990, 57-64.
18. BASTI G., PERRONE A.L., CIMAGALLI V., GIONA M., PASERO E., MORGAVI G., A dynamic approach to invariant extraction from time-varying inputs by using chaos in neural nets, in *Proceedings of IEEE/INNS International Joint Conference on Neural Networks. San Diego CA, June 17-21, 1990*, San Diego, 1990, II:505-510.
19. BASTI G., PERRONE A.L., CIMAGALLI V., GIONA M., PASERO E., MORGAVI G., Informational versus bifurcative

- use of chaotic dynamics in neural networks, in *Proceedings of INNOC 90 PARIS - International Neural Network Conference, Paris, July 9-13, 1990*, **II**: 941-944.
20. BASTI G. & PERRONE A.L., A qualitative approach to the dynamics of a non-stationary neural network. Early version. *Internal Report, Dept. of Physics, University of Rome "Tor Vergata"*, Rom 2F 90/043, Rome, 1990.
 21. BASTI G., PERRONE A.L., GIONA M., CIMAGALLI V., Chaos in neural networks a pathway from dynamics to logic, in : *Proceedings of Iizuka's International Conference on Fuzzy Logic and Neural Networks, Iizuka (Japan), July 19-24, 1990*, **II**: 601-606.
 22. BASTI G., PERRONE A.L., MORGAVI G., Relaxation properties and learning paradigms in complex systems. In: S.K.ROGERS (ED.), *Applications of Artificial Neural Networks II, Orlando FL, April 2-5, 1991*, SPIE Proceedings Series vol.1469, Washington 1991, 719-736.
 23. BASTI G., PERRONE A.L., CIMAGALLI V., MORGAVI G., BALLARIN A., Higher order statistics in a non-stationary neural network , in E. CAIANIELLO (ED.), *Fourth Italian Workshop. Parallel Architectures and Neural Networks. Vietri sul Mare (SA), May 8-10, 1991*, World Publishing, London-Singapore, 1991 , 3-10.
 24. BASTI G., PERRONE A.L., CIMAGALLI V., MORGAVI G., BALLARIN A., PASERO E., Dynamic properties of an asymmetrical non-stationary neural network, in *Proceedings of IEEE/INNS International Joint Conference on Neural Networks IJCNN-Seattle '91, Seattle WA, July 8-12, 1991*, **IIA**: 982..
 25. BASTI G., PERRONE A.L., FUSI S., MORGAVI G., A non-linear net to extract symmetries form inputs $f(t)$, *Proceedings of IEEE/INNS International Joint Conference on Neural Networks IJCNN-Singapore'91, Singapore, November 18-21, 1991*, **II**: 1912-1917.
 26. BASTI G. & PERRONE A., Teorema di computabilità dinamica per macchine finite, *Internal Report Dept. of Physics, Univ. of Rome "Tor Vergata"*, ROM2 F/92/01, Roma 1992.
 27. BASTI G., Information processing in the brain considered as a non-linear self-organizing system. Toward a "dual" theory of the mind-body problem. In: WASSERMANN C. KIRBY R. & RORDORFF B. (EDS.), *The Science and Theology of Information, Proceedings of the Third European Conference on Science and Theology, Geneva (CH), March 29 to April 1, 1990*, Labor et Fides, Genève, 1992, 203-214 (Publications de la Faculté de Théologie de l'Université de Genève, n.16).
 28. BASTI G., PERRONE A.L. & PASERO E., A non-stationary and asymmetric net for real-time pattern recognition in noisy environments, in D.K.RUCK (ED.), *Science of Artificial Neural Networks, Orlando FL, April 21-24, 1992*, SPIE Proceedings Series vol.1710, Washington 1992, 133-149.
 29. PERRONE A.L., BASTI G. & CHIAVONI A., A neural module for simultaneous discrimination and locking on different temporal series in noisy environments, in S.K.ROGERS (ED.), *Applications of Artificial Neural Networks III, Orlando FL, April 21-24, 1992*, SPIE Proceedings Series vol.1709, Washington 1992, 926-936.
 30. CASTIGLIONE P., BASTI G., FUSI S. & PERRONE A.L., A net for automatic detection of minimal correlation order in contextual pattern recognition, in *Proceedings of IEEE/INNS International Joint Conference on Neural Networks IJCNN-Baltimore'92, Baltimore, June 11-16, 1992*, **II**: 1192-1198.
 31. BASTI G. & PERRONE A.L., A theorem of computational effectiveness for a mutual redefinition of numbers and processes, in I.TSUDA & K.TAKAHASHI (EDS.), *Int. Symp. on Information Physics, as a part of Int. Symp. on Information Sciences (ISKIT '92), Iizuka, Fukuoka, July 12-15, 1992*, Kyushu Institute of Technology Press, Iizuka, 122-133.
 32. BASTI G., PERRONE A.L. & PASERO E., Chaotic neural nets, computability, undecidability and fuzzy sets, in *Proceedings of the 2nd International Conference on Fuzzy Logic and Neural Networks, Iizuka, Japan, July 17-22, 1992*, 925-931.
 33. PERRONE A.L., DE GIOVANNI L., MONTESI S., PELAGGI A. & BASTI G., A multiscale invariant method for speaker independent speech recognition in telecom environment, in E. CAIANIELLO (ED.), *Fifth Italian Workshop. Parallel Architectures and Neural Networks. Vietri sul Mare (SA), May 15-18, 1992*, World Publishing, London-Singapore, 1992 (In Press).
 34. PERRONE A.L., DE GIOVANNI L., MONTESI S., PELAGGI A. & BASTI G., A neural net with varying topology for speaker independent speech recognition in telecom environment, in GORI M. (ED.), *Atti del Secondo Workshop su reti neurali per il riconoscimento della voce, Firenze 10-11 Dicembre, 1992*, (In Press).
 35. BASTI G., CASOLINO M., MESSI R., PERRONE A.L. & PICOZZA P., Cosmic ray particle recognition for WiZard experiment, *Internal Report Dept. of Physics, Univ. of Rome "Tor Vergata"*, ROM2 F/92/58, Roma 1992.
 36. BASTI G. & PERRONE A.L., Time and non-locality. From the logical to the metaphysical being: an Aristotelian-Thomistic approach. In: COYNE G., SCHMITZ-MOORMANN K., & WASSERMANN C. (EDS.), *Origin Time and Complexity, Part I*, Labor et Fides, Geneva, 1994, 31-74 (Studies in Science and Theology, **1**(1993)).
 37. BASTI G. & PERRONE A.L., Le radici forti del pensiero debole: nichilismo e fondamenti della matematica. Parte I. In *Con-tratto* **1**(1992), 13-82.
 38. PERRONE A.L., MESSI R., PASQUALUCCI E. & BASTI G., Neural nets with varying topology for high-energy

- particle recognition. In: S.K.ROGERS (ED.), *Applications of Artificial Neural Networks IV, Orlando FL, April 12-16, 1993*, SPIE Proceedings Series, Vol.1965, Washington 1993, 328-343.
39. BASTI G., PERRONE A.L., CASOLINO M. & PICOZZA P., Automatic redefinition of the fuzzy membership function to deal with high fluctuating phenomena in neural nets. In: D.K.RUCK (ED.), *Science of Artificial Neural Networks II, Orlando FL, April 12-16, 1993*, SPIE Proceedings Series, Vol. 1966, Washington 1993, 322-324.
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