Europass Curriculum Vitae
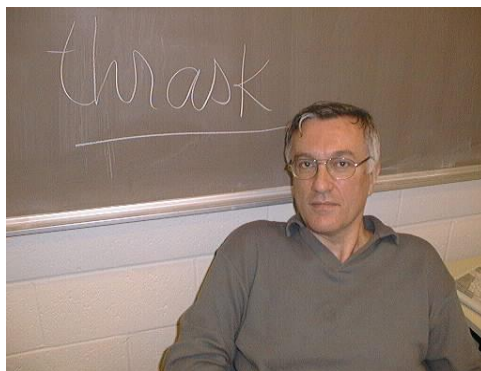
Personal information

First name(s) / Surname(s)	**STEFAN, Gheorghe**
Address(es)	Popa Savu 36, sect. 1, Bucuresti
Telephone(s)	+4021 230 27 14 (home) +4021 402 48 14 (office)
Fax(es)	
E-mail	gmstefan@comcast.net, gstefan@arh.pub.ro
Nationality	Romanian
Date of birth	
Gender	Male

Desired employment / Occupational field

Work experience

Dates	2003- 2009
Occupation or position held	Chief Scientist & co-Founder
Main activities and responsibilities	
Name and address of employer	**BrightScale** (formerly *Connex Technology* (formerly *Gemicer*)), CA, USA
Type of business or sector	

Dates	2001-2003
Occupation or position held	Visiting (research & teaching)
Main activities and responsibilities	
Name and address of employer	**St. Marry's College of Maryland University**, MD, USA
Type of business or sector	

Dates	2001-2003
Occupation or position held	Senior Consultant
Main activities and responsibilities	
Name and address of employer	**Infocruiser**, MD, USA
Type of business or sector	

Dates	2001
Occupation or position held	Visiting (research)
Main activities and responsibilities	

Name and address of employer	**Smith College**, Northampton, MA, USA
Type of business or sector	
Dates	2000-2001
Occupation or position held	Senior Consultant
Main activities and responsibilities	
Name and address of employer	**NoBug Consulting**, Sunnyvale CA (Bucharest office)
Type of business or sector	
Dates	1997- *to date*
Occupation or position held	Professor
Main activities and responsibilities	
Name and address of employer	**Politehnica Univ. of Bucharest, Faculty of Electronics**
Type of business or sector	
Dates	1992-2000
Occupation or position held	Adjunct Professor
Main activities and responsibilities	
Name and address of employer	**University Transilvania of Brasov**
Type of business or sector	
Dates	1992- *to date*
Occupation or position held	Manager
Main activities and responsibilities	
Name and address of employer	**Center of New Electronic Architecture of the Romanian Academy**
Type of business or sector	
Dates	1990-97
Occupation or position held	Associate Professor
Main activities and responsibilities	
Name and address of employer	**Politehnica Univ. of Bucharest, Fac. of Electronics**
Type of business or sector	
Dates	1988-90
Occupation or position held	Assistant Professor
Main activities and responsibilities	
Name and address of employer	**Politehnica Univ. of Bucharest, Fac. of Electronics**
Type of business or sector	
Dates	1972-88
Occupation or position held	Teaching Assistant
Main activities and responsibilities	
Name and address of employer	**Politehnica Univ. of Bucharest, Fac. of Electronics**
Type of business or sector	
Dates	1971-72
Occupation or position held	Assistant Researcher
Main activities and responsibilities	
Name and address of employer	**Institute of Atomic Physics**, Bucharest
Type of business or sector	

Education and training

Dates	1980
Title of qualification awarded	Ph.D. in Electronics,
Principal subjects/occupational skills covered	
Name and type of organisation providing education and training	Politehnica University of Bucharest (coordinator: Professor Mihai Draganescu)
Level in national or international classification	

Dates	1971
Title of qualification awarded	BS & MS in Electronics
Principal subjects/occupational skills covered	
Name and type of organisation providing education and training	Politehnica University of Bucharest
Level in national or international classification	

Personal skills and competences

Mother tongue(s) — **Romanian**

Other language(s)

Self-assessment

European level (*)

English

Understanding				Speaking				Writing	
Listening		Reading		Spoken interaction		Spoken production			
C2	Proficient user	C2	Proficient user	C2	Proficient user	C2	Proficient user	C2	Proficient user

(*) Common European Framework of Reference for Languages

Social skills and competences

Organisational skills and competences

Technical skills and competences

Computer skills and competences

Artistic skills and competences — singing: Bach, Haendel, Mozart, Schubert, Schumann, Rossini, Verdi.

Other skills and competences

Driving licence

Additional information

TEACHING EXPERIENCE:

- Digital Integrated Circuits (Politehnica University of Bucharest)
- Computer Architecture (St. Marry's College of Maryland University & University Transilvania of Brasov)
- Functional Electronics (master course at Politehnica University of Bucharest)
- Self-Organizing Systems (master course at Politehnica University of Bucharest)
- Advanced Digital Systems (master course at Politehnica University of Bucharest) Theory of Computation (St. Marry's College of Maryland University)

MAIN TECHNICAL PROJECTS:

- 1969-1973: initial stages of the CORAL system project
- 1976-1985: DIAGRAM system
- 1982-1986: DIALISP system
- 1985- ...: CONNEX PROJECT
  - Dec. 2003: CA4096 - the first prototipe produced at TSMC (the first ever made one-chip having 4096 16-bit PEs)
  - Febr. 2007: BA1024 - a SoC for the HDTV market, containing CA1024 (a ConnexArray of 1024 PEs) produced at TSMC (90 nm standard process) is the first one chip parallel machine with the following performances:
    - 200 GOPS (**G**iga 16-bit **OP**erations per **S**econd)
    - >60 GOPS/Watt
    - >2 GOPS/mm^2
  - July 2007: the first real & complex application (HDTV postprocessing) running on BA1024 in Universitatea Politehnica Bucuresti (the software team coordinated by Bogdan Mitu, Marius Stoian, and Radu Weiss)
  - March 2008: BA1024B - a SoC for the HDTV market, containing CA1024 (a ConnexArray of 1024 PEs) produced at TSMC (65 nm standard process) with the following performances:
    - 400 GOPS (**G**iga 16-bit **OP**erations per **S**econd)
    - >120 GOPS/Watt
    - >6.25 GOPS/mm^2

GRANTS:

- 2001-2003: In-Memory Data-Base with Connex Technology, granted by *Infocruiser* at St. Marry's College of Maryland University
- 1999-2000: Information Society Starts from School, in the TEMPUS program
- 1995: Interdisciplinary Laboratory for Self-Organizing Systems, from the Scientific Research Council of Romania
- 1993: research stage in ENPG, Grenoble, France, in the TEMPUS program

PROFESSIONAL AFFILIATIONS:
IEEE, ACM, New York Academy of Sciences, The World Academy of Arts and Science

PATENTS:

- Gheorghe Stefan, Dominique Thiebaut:
  Memory Engine for the Inspection and Manipulation of Data
  (United States Patent 6,760,821, July 6, 2004; Filed: August 10, 2001)
- Gheorghe Stefan, Dominique Thiebaut, Dan Tomescu:
  Associative memory device
  (United States Patent 7,069,386, June 27, 2006; Filed: May 10, 2004)
- Dan Tomescu, Gheorghe Stefan:
  Data processing system having a Cartesian Controller
  (United States Patent 7,107,478, September 12, 2006; Filed: December 4, 2003)
- Gheorghe Stefan, Dan Tomescu:
  Cellular Engine for a Data Processing System,
  (United States Patent 7,383,421, June 3, 2008 ; Filed: December 4, 2003)
- Bogdan Mitu, Gheorghe Stefan, Dan Tomescu:
  Array of Boolean logic controlled processing elements with concurrent I/O processing and instruction sequencing
  (United States Patent 7,451,293, November 11, 2008 ; Filed: Oct. 21, 2005,)
- Gheorghe Stefan, Dan Tomescu:
  Cellular Engine for a Data Processing System,
  (United States Patent 7,908,461, March 15, 2011 ; Filed: December 19, 2007)

PENDING PATENT APPLICATIONS:

- Gheorghe Stefan:
  Integral parallel machine,
  Serial No. 11/897825 - Filed August 31, 2007.
- Bogdan Mitu, Gheorghe Stefan, Lazar Bivolarski:
  Multi-sequence control for a data parallel system,
  Serial No. 11/897798 - Filed August 30, 2007.
- Marius Stoian, Gheorghe Stefan:
  Hardware Multi-Core Processor Optimized for Object Oriented Computing,
  Serial No. 20080177979 - July 24, 2008.

BOOKS AND MONOGRAPHS

- Gh. Stefan: *Ethos - Pathos - Logos. Eseuri despre unitatea triadica*, Ed. ALL, 2010.
- Gh. Stefan: *Circuite si sisteme digitale*, Ed. tehnica, 2000.
- Gh. Stefan: *Circuit Complexity, Recursion, Grammars and Information. Multiple Morphisms*, Ed. Transilvania University of Brasov, 1997.
- Gh. Stefan: *Introduction to Functional Design of Digital Systems*, IPB Press, 1994, (preprint, TIMA, ENPG, Grenoble, France, iulie 1993).
- Gh. Stefan: *Circuite integrate digitale*, Ed. Denix, Bucuresti, 1993.
- M. Draganescu, Gh. Stefan, C. Burileanu: *Electronica functionala*, Ed. Tehnica, Bucuresti, 1991.
- Gh. Stefan: *Functie si structura in sistemele digitale*, Ed. Academiei Romane, Bucuresti, 1991.
- Gh. Stefan, I. Draghici, T. Muresan, E. Barbu: *Circuite integrate digitale*, Ed. Didactica si pedagogica, Bucuresti, 1983.
- M. Draganescu, V. Sahleanu, C. Balaceanu, A. Giuculescu, Gh. Stefan, P. Mocanu: *Precursori romani ai ciberneticii*, Ed. Academiei RSR, Bucuresti, 1979; (the English version: *Odobleja between Amper and Wiener*, Ed. Academiei RSR, Bucuresti, 1981).

ELECTRONIC PRE-PRINTS:

- Gh. Stefan: *Loops & Complexity in Digital Systems. Lecture Notes on Digital Design in the Giga-Gate per Chip Era*
- Gh. Stefan: *Limite care deschid. Eseuri despre o lume avida de intelesuri si coplesita de complexitate.*

TEXT BOOKS / CURRICULUM MATERIALS

- Gh. Stefan, V. Bistriceanu: *Circuite integrate digitale. Probleme. Proiectare*, Ed. Didactica si pedagogica, Bucuresti, 1992. Reprinted by Editura Albastra, 2000.
- A. Rusu, Gh. Stefan, Gh. Brezeanu: *Dispozitive si circuite electronice - Clegere de probleme de proiectare*, IPB Press, 1988; Reprinted IPB Press, 1991
- D. Dascalu, Gh. Stefan, Gh. Brezeanu, A. Rusu, et all.: *Dispozitive si circuite electronice - Probleme*, Ed. Didactica si pedagogica, Bucuresti, 1982.
- D. Dascalu, M. Profirescu, I. Costea, E. Sofron, M. Ionescu, Gh. Stefan, Gh. Brezeanu: *Circuite electronice - Culegere de probleme*, IPB Press, 1980.
- Sanda Maican, Gh. Stefan: *Culegere de probleme de circuite integrate digitale*, IPB Press, 1979.
- M. Bodea, I. Mihut, M. Hancu, Sanda Dumitrescu, Gh. Stefan: *Aparate de masura si control - Indrumar de laborator*, IPB Press, 1977.
- Sanda Stefan, Gh. Stefan: *Circuite integrate digitale - Indrumar de laborator*, IPB Press, 1976.

TALKS:

- University of Southern California, Los Angeles, CA, USA, February, 1997: "Architectures with Connex Memory"
- Universidad Politecnica de Catalunya, Barcelona, Spain, July 30 1997: "The Connex Memory and Some of Its Applications"
- University of Massachusets of Amherst, MA, USA, February, 20, 2001: "Loops & Complexity in Digital Systems"
- University of Maryland, St. Mary's College, MD, USA, October, 4, 2001: "String Search in Bioinformatics and Some Architectural Solutions"
- Old Dominion University, VA, USA, Aug, 23, 2002: "Loops and Complexity in Digital Systems"

WORKSHOPS ON TEACHING METODS
European Colloquium on Education:

- Witten 1990: lecture on "Education / Training in Learning".
- Oxford 1995

PAPERS AND COMMUNICATIONS

2011

- Gheorghe M. Stefan: "Informatia fenomenologica si filosofia profunzimilor la inceput de mileniu", in *Academica*, Anul XXI, Nr. 4-5, Aprilie-Mai 2011.
- Mihaela Malita, Gheorghe M. Stefan: "Backus Language for Functional Nano-Devices", accepted at *CAS 2011*, Sinaia, Oct. 2011.
- Gheorghe M. Stefan: "Don Giovanni sau umbrele iluminismului", in *Curtea de Arges*, Anul II, Nr. 8(9), August 2011.
- Mihaela Malita, Gheorghe M. Stefan: "Parallel RISC Architecture. A Functional Approach Based on Backus's FP language", in *Proceedings of the 2011 International Conference on Parallel and Distributed Processing Techniques and Applications*, Las Vegas, 2011, pp 492-498.
- E. Franti, G.Stefan, P. Schiopu, A. Zafiu, A. Plavitu: "Intelligent Control System for Artificial Arms Configuration", in *Proceeding of the EUROPEAN COMPUTING CONFERENCE (ECC '11),* Paris, France pg 312 – 316.
- E. Franti, G. Stefan, P. Schiopu, M. Teodorescu: "*Modular Software for for Artificial Arms Design*", International Conference on Automatic Control, Modeling & Simulation (ACMOS'11), Lanzarote, Spain, 27.05.2011 – 29.05.2011, pag. 387 - 391

- P.L. Milea, G. Stefan, A. Barbilian, I. Codorean, M. Moga, S. Mitulescu, V. Codreanu, T. Boros, M. Teodorescu: "Control System for Locomotory Prosthesis Configuration" - *International Journal Of Systems Applications, Engineering & Development*, Issue 3, Volume 5, 2011, pp. 420-427;
- P.L. Milea, G. Stefan, M. Moga, A. Barbilian, S. Mitulescu, E. Cernat, O.Oltu, C. Moldovan, S. Pompilian: "Hardware & Software Package for Locomotory Disabled Patients Training" - *International Journal Of Systems Applications, Engineering & Development,* Issue 3, Volume 5, 2011

2010

- Gheorghe M. Stefan: "Integral Parallel Architecture in System-on-Chip Designs", in *The 6th International Workshop on Unique Chips and Systems*, Atlanta, GA, USA, December 4, 2010, pag. 23-26.
- Petronela Bumbacea, Valeriu Codreanu, Radu Hobincu, Lucian Petrica, Gheorghe M. Stefan: "Technology Driven Architecture for Integral Parallel Embedded Computing", in *CAS 2010 Proceedings*, vol.1, pag.35-42.
- Ana-Maria Calfa, Gheorghe Stefan: "Matrix Computation on the Connex Parallel Architecture", *International Conference on Signals and Electronic Systems*, Gliwice, Poland, Sept. 2010.
- Gheorghe M. Stefan: "Integral Humanism", *Conference on Intercultural Humanism*, Oxford, 9-12 September 2010.
- Mihaela Malita, Gheorghe Stefan: "Many-Processor & Kleene's Model", in *Scientific Buletin of UPB*, serie C, no. 3, 2010
- Adrian Zafiu, Lucian Milea, Orest Oltu, Monica Dascalu: "Modelling and Control System for Intelligent Prosthesis Configuration and Testing", *9th Int.Conf. on Computational Intelligence, Man-machine Systems and Cybernetics (CIMMACS '10)*, Los Andes, Merida, Venezuela, December 14-16, 2010.
- Lucian Milea, Adrian Zafiu, Orest Oltu, Monica Dascalu, Adrian Barbilian: "Software Assisted Training and Prosthetic Solutions Choosing for Locomotory Disabled Patients", *9th Int.Conf. on Computational Intelligence, Man-machine Systems and Cybernetics (CIMMACS '10)*, Los Andes, Merida, Venezuela, December 14-16, 2010.

2009

- Gheorghe Stefan: "One-Chip TeraArchitecture", in *Proceedings of the 8th Applications and Principles of Information Science Conference*, Okinawa, Japan on 11-12 January 2009.
- Mihaela Malita, Gheorghe Stefan: "Integral Parallel Architecture & Berkeley's Motifs", in *ASAP09 - 20th IEEE International Conference on Application-Specific Systems, Architectures and Processors*, 7-9 July, 2009, Boston, MA, USA, pag. 191-194.
- Mihaela Malita, Gheorghe Stefan: "The Berkeley Motifs and an Integral Parallel Architecture", in *Romanian Journal of Information Science and Technology*, Volume 12, Number 1, 2009, pag. 35-49
- Gheorghe Stefan: "The Emergence and its Architecture", in vol. *Scoala de microelectronica. Volum de lucrari dedicate profesorului acad. Mihai Draganescu cu ocazia aniversarii varstei de 80 ani*, Ed. Rosetti Educational, 2009, pag. 12-21.
- Gheorghe Stefan, Bogdan Mitu, Marius-Ciprian Stoian: "Heterogeneous vs. Homogeneous in Integral Parallel Computation", in vol. *Scoala de microelectronica. Volum de lucrari dedicate profesorului acad. Mihai Draganescu cu ocazia aniversarii varstei de 80 ani*, Ed. Rosetti Educational, 2009, pag. 114-132.

2008

- Mihaela Malita, Gheorghe Stefan: "On the Many-Processor Paradigm", in: H. R. Arabina (Ed.): *Proceedings of the 2008 World Congress in Computer Science, Computer Engineering and Applied Computing*, vol. PDPTA'08 (The 2008 International Conference on Parallel and Distributed Processing Techniques and Applications), 2008.
- Monica Dascalu, Eduard Franti, Gheorghe Stefan, Lucian Milea, Marius Stoian: "Artificial societies simulator" in *AIKED'08: Proceedings of the 7th WSEAS International Conference on Artificial intelligence, knowledge engineering and data bases*, February 2008
- Monica Dascalu, Eduard Franti, Gheorghe Stefan, Lucian Milea: "Modeling production with artificial societies: the emergence of social structure" in *AIKED'08: Proceedings of the 7th WSEAS International Conference on Artificial intelligence, knowledge engineering and data bases*, February 2008
- Monica Dascalu, Eduard Franti, Gheorghe Stefan, Lucian Milea: "Artificial societies: a new paradigm for complex systems modelling" in *AIKED'08: Proceedings of the 7th WSEAS International Conference on Artificial intelligence, knowledge engineering and data bases*, February 2008

2007

- Mihaela Malita, Gheorghe Stefan: "Membrane Computing in Connex Environment", in G. Eleftherakis, P. Kefalas, Gh. Paun, G. Rozenberg, A. Saloma (Eds.): *Membrane Comoputing*, Springer-Verlag, 2007.
- Gheorghe Stefan, Marius Stoian: "The efficiency of the register file based architectures in OOP languages era", in *SINTES13 Craiova, 2007*.
- Marius Stoian, Gheorghe Stefan: "Stacks or File-Registers in Cellular Computing?", in *CAS, Sinaia 2007*