Europass Curriculum Vitae

Personal information

First name(s) / Surname(s)	**Octavian-Cezar Pastravanu**
Address(es)	Blvd. Dimitrie Mangeron Nr. 27, 700050 Iasi (Romania)
Telephone(s)	0232 231343, 0232 230751, 0232 701320
Fax(es)	0232 231343, 0232 230751
E-mail	opastrav@ac.tuiasi.ro, octavian_pastravanu@yahoo.com
Nationality	Romanian
Date of birth	16/05/1957

Work experience

Dates	**1994** - present
Occupation or position held	Member of Academic Staff (Associate Professor 1994-1998, Full Professor 1998-present, PhD supervisor in "Systems Engineering" 2005 - present)
Main activities and responsibilities	Taught Disciplines: Systems theory, Neural network applications in control engineering, Discrete event systems, Physical system modeling. Research areas: Qualitative analysis of dynamical systems, Artificial Intelligence, Petri nets
Name and address of employer	Technical University "Gheorghe Asachi" of Iasi, Faculty of Automatic Control and Computer Engineering, Blvd. Dimitrie Mangeron Nr. 53A, Iaşi
Type of business or sector	Education and research
Dates	**1993 – 1994** (Academic year)
Occupation or position held	Associate researcher (postdoc fellowship awarded by The University of Texas System)
Main activities and responsibilities	Research areas: Discrete event manufacturing systems
Name and address of employer	Automation and Robotics Research Institute, The University of Texas at Arlington, 7300 Jack Newell Blvd. S., Fort Worth, TX 76118, USA
Type of business or sector	Research
Dates	**1992 – 1993** (Academic year)
Occupation or position held	Associate researcher (postdoc fellowship awarded by The Belgian Gouverment)
Main activities and responsibilities	Research areas: Artificial intelligence techniques in system identification and control
Name and address of employer	Department of Electrical Energy, Systems & Automation, The University of Ghent, Technologiepark 913, 9052 GENT, Belgium
Type of business or sector	Research
Dates	**1986 -1992**
Occupation or position held	Member of Academic Staff (Teaching Assistent 1986-1990, Assistant Professor 1990-1992)
Main activities and responsibilities	Taught Disciplines: Systems theory, Numerical computation, Control engineering Research areas: Modeling and simulation techniques, Real-time applications for process control, Artificial intelligence – Symbolic computation.
Name and address of employer	Technical University "Gheorghe Asachi" of Iasi (previously Polytechnic Institute), Faculty of Automatic Control and Computer Engineering, Dimitrie Mangeron no. 53A, Iaşi
Type of business or sector	Education and research
Dates	**1982 - 1986**
Occupation or position held	Engineer

Main activities and responsibilities	Design, implementation and testing of software products
Name and address of employer	National Institute for Research and Development in Automation IPA-TCT Bucharest, Iasi Branch, Str. Horia Nr 5-8, Iasi
Type of business or sector	Research and technological engineering

Education and training

Dates	**1993 - 1994**
Title of qualification awarded	Research specialization
Principal subjects/occupational skills covered	Control and computers: Discrete event manufacturing systems
Name and type of organization providing education and training	Automation and Robotics Research Institute, The University of Texas at Arlington USA (postdoc fellowship awarded by The University of Texas System)
Level in national or international classification	Postdoctoral studies
Dates	**1992 - 1993**
Title of qualification awarded	Research specialization
Principal subjects/occupational skills covered	Control and computers: Artificial intelligence techniques in system identification and control
Name and type of organization providing education and training	Department of Electrical Energy, Systems & Automation, The University of Ghent, Belgium (postdoc fellowship awarded by The Gouverment of Belgium)
Level in national or international classification	Postdoctoral studies
Dates	**1989 - 1992**
Title of qualification awarded	PhD Diploma in Control Engineering
Principal subjects/occupational skills covered	Control and computers: Analysis and control techniques for systems with unknown parameters.
Name and type of organization providing education and training	Technical University "Gheorghe Asachi" of Iasi (previously Polytechnic Institute), Faculty of Automatic Control and Computer Engineering
Level in national or international classification	Doctoral studies
Dates	**1977 - 1982**
Title of qualification awarded	Engineering Diploma in Computers and Control, specialization Computers. Grade Point Average 10.00. Graduation Thesis 10.00.
Principal subjects/occupational skills covered	Computers and Control
Name and type of organization providing education and training	Polytechnic Institute "Gheorghe Asachi" of Iasi, Faculty of Electrical Engineering
Level in national or international classification	University studies

Personal skills and competences

Mother tongue(s)	Romanian
Other language(s)	

Self-assessment	Understanding				Speaking				Writing	
European level (*)	Listening		Reading		Spoken interaction		Spoken production			
English	C1	Proficient User	C1	Proficient User	C1	Proficient User	C1	Proficient User	C1	Proficient User
French	C1	Independent User	C1	Proficient User	B2	Independent User	B2	Independent User	B2	Independent User

(*) Common European Framework of Reference for Languages

Social skills and competences	Communication and negotiation skills. Proficient collaboration as a team member.
Organizational skills and competences	Experience in managing academic activities (projects/collaborations on educational or scientific areas) at international and national level.
Technical skills and competences	Information Technology and Systems Engineering
Computer skills and competences	Advanced user - in accordance with professional tasks
Driving license	B category.
Additional information	**Teaching and higher education development**

Teaching and higher education development

Taught courses: Numerical methods, Systems theory, Discrete-event systems, Physical system modeling, Neural networks and fuzzy logic.

Textbooks and monographs: • 13 publications; • First monographs published in Romania on Petri nets (1997), bond graphs (2001).

Advances in higher education - • Ph.D. theses 5; • Knowledge-transfer papers 24.

Projects for institutional collaboration: Developed within the framework of Tempus-Phare European Program; member of the international steering committees of the projects 0886 (HECE, 1991 - 1992), 2011 (IMPACT, 1991 - 1994), 11467 (COMPANION 1996 - 2000).

Research

Current interests: • Qualitative theory of dynamical systems – switched and polytopic systems, • Discrete event systems – Petri nets , • Reinforced learning - Non-recursive models.

Previous interests: • Neural networks, • Computer-aided analysis and design of control systems - CACSD; • Process control.

ResearcherID profile: http://www.researcherid.com/rid/AAK-6774-2020
https://publons.com/researcher/3546087/octavian-pastravanu/

SCOPUS profile: https://www.scopus.com/authid/detail.uri?authorId=6701685220

GoogleScholar profile: https://scholar.google.com/citations?hl=en&user=7TDHHV8AAAAJ

h-index: • Web of Science 12, • Scopus 13, • Google-Scholar 18.

Citations - Citing articles / Without self-citations: • Web of Science 636 / 589, • Scopus 847 / 710, • Google-Scholar 1699.

Indexed articles: • Web of Science (ISI) 85 (31 journals, 54 conferences), • Scopus 101 (34 journals, 67 conferences), • Google-Scholar 137 (49 journals, 88 conferences), • IEEE Xplore 62 (3 journals, 59 conferences), • Zentralblatt 58 (46 journals, 12 conferences), • DBLP 30 (14 journals, 16 conferences)

Publications: • Journal papers 54, • Conference papers 123, • Book chapters edited by international publishing houses 17, • Book and book chapters edited by national publishing houses 13.

Intellectual property: • US Patent 6,185,469 B1, • O.R.D.A. Certificate 1451/20.07.2004.

R&D grants: • Coordinator 5, • Partner team leader 2, • Team member 20.
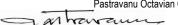
R&D projects for enterprises: • The MathWorks Inc. – Third-Party Products (Petri Net Toolbox-version 2.4).

Awards

• "Tudor Tănăsescu" Award of the Romanian Academy (2007) for a group of papers on "Flow invariance in the qualitative analysis of dynamical systems" – published in 2005.

• Fellowship awarded by the University of Texas System (1993) for postdoctoral studies in Technical Sciences (Discrete event manufacturing systems).

• Fellowship awarded by the Government of Belgium (1992) for postdoctoral studies in Technical Sciences (Artificial intelligence).

Synergistic activities

• Member of the Academy of Technical Sciences of Romania ASTR (2005 - present). Secretary of the ASTR Branch in Iasi.

• Member of the Committee "Engineering Sciences" of the National Research Council CNCSIS (2006 - 2011), CNCS (2011 - 2013).

• Member of the Committee "Computers, Information Technology and Systems Engineering" of the National Council of Titles, Diplomas and Certificates CNATDCU (2011 - present).

• Member of Technical Committee TC 1.3. Discrete Event and Hybrid Systems – IFAC "International Federation of Automatic Control" (2005 - present).

Work (20 relevant papers)	• *Qualitative theory of dynamical systems – switched and polytopic systems,*

Lupascu, C., Nechita, S., Pastravanu, O., 2019, Dual switched positive systems - a less conservative condition for diagonal quadratic stability, *International Journal of Systems Science*, vol. 50, no. 13, 2529-2538, ISSN: 0020-7721, WOS:000501343300001

Pastravanu, O., Matcovschi, M., 2014, Max-type copositive Lyapunov functions for switching positive linear systems, *Automatica-IFAC*, vol. 50, no. 12, 3323–3327, ISSN: 0005-1098, WOS:000347760100043

Pastravanu, O, Matcovschi, M. 2011, Invariance properties of interval dynamical systems, *International Journal of Systems Science*, vol. 42, issue 12, pp. 1993-2007, ISSN: 0020-7721, WOS:000295464400008

Pastravanu O., Matcovschi M., 2011, Comments on "Assessing the stability of linear time-invariant continuous interval dynamic systems", *IEEE Trans. Automatic Control*, vol. 56, no. 6, 1442-1445, ISSN: 0018-9286, WOS:000291430200021.

Pastravanu, O., Matcovschi, M., 2010, Diagonal stability of interval matrices and applications, *Linear Algebra and Its Applications*, vol. 433, no. 8-10, 1646-1658, ISSN: 0024-3795, WOS:000282560700013.

Pastravanu, O., Matcovschi, M., 2010, Linear time-variant systems: Lyapunov functions and invariant sets defined by Holder norms, *Journal of the Franklin Institute*, vol. 347, no. 3, 627-640, ISSN 0016-0032, WOS:000275432100006

O. Pastravanu, M. Voicu, 2006, Generalized matrix diagonal stability and linear dynamical systems*, Linear Algebra and its Applications*, 419, issues 2-3, 299-310, ISSN 0024-3795, WOS:000242744000002

Pastravanu, O., Voicu, M., 2004, Necessary and sufficient conditions for componentwise stability of interval matrix systems, *IEEE Trans. Automatic Control*, vol. 49, no. 6, 1016-21, ISSN: 0018-9286, WOS:000222050300021

• *Reinforced learning - Non-recursive models.*

Vrabie, D., Pastravanu, O., Abu-Khalaf, M., Lewis, F.L., 2009, Adaptive optimal control for continuous-time linear systems based on policy iteration, *Automatica-IFAC,* vol. 45, no. 2, 477-484, ISSN: 0005-1098, WOS:000263426800021

Pastravanu, O., Ibanescu, R., 2001, *Limbajul bond-graph in modelarea si simularea sistemelor fizico-tehnice*, Editura Gh. Asachi, Iasi, 469p, ISBN 973-8292-12-3

Voicu, M., Pastravanu, O., 1997, *Non-Recursive Models in Control System Analysis and Design*, Editura Dosoftei, Iasi, 1997, 145p., ISBN 973-9135-31-5.

• *Discrete event systems – Petri nets*

Mahulea, C., Matcovschi, M., Pastravanu, O., 2004 (*Last update*: 07.11.2018), Petri Net Toolbox for MATLAB (version 1.0 - 2.4), *The MathWorks Inc. USA, Third-Party Products:* http://www.mathworks.com/products/connections/product_detail/product_35741.html.

Pastravanu, O., Matcovschi, M., Mahulea, C., 2002, *Aplicatii ale retelelor Petri in studiul sistemelor cu evenimente discrete*, Editura Gh. Asachi, Iasi, 250p, ISBN 973-8292-86-7

Lewis, F.L., Tacconi, A., Pastravanu, O., Gurel, A., 2001, Method and apparatus for testing and controlling a flexible manufacturing system, *United States Patent and Trademark Office, No. 6,185,469 B1*, Date of Patent: Feb.6, 2001. http://www.freepatentsonline.com/6185469.html

Lewis, F.L., Gurel, A., Bogdan, S., Doganalp, A., Pastravanu, O. 1998, Analysis of deadlock and circular waits using a matrix model for flexible manufacturing systems, *Automatica*, Vol. 34, No. 9, 1083-1100, ISSN 0005-1098, WOS:000076083300004

Huang, H.H., Lewis, F.L., Pastravanu, O., Gurel, A., 1995, Flow-shop scheduling design in an FMS matrix framework, *Control Engineering Practice*, Vol.3, No.4, 561-568, ISSN 0967-0661, WOS:A1995QX04500013

• *Neural networks,*

Pastravanu, O., Matcovschi, M., 2005, Absolute componentwise stability of interval Hopfield neural networks, *IEEE Trans. Systems Man and Cybernetics B*, vol. 35, no. 1, 136-41, ISSN: 1083-4419, WOS:000226615000015

Lazar, M., Pastravanu, O., 2002, A neural predictive controller for non-linear systems, *Mathematics and Computers in Simulation*, vol. 60, no. 3-5, 315-324, ISSN 0378-4754, WOS:000178952300015.

Teodosiu, C., Pastravanu, O., Macoveanu, M., 2000, Neural network models for ultrafiltration and backwashing, *Water Research*, 34, 18, 4371-80, ISSN 0043-1354, WOS:000165558000007

Jagannathan, S., Lewis, F.L., Pastravanu, O., 1996, Discrete-time model reference adaptive control of nonlinear dynamical systems using neural networks, *Int. Journal of Control*, Vol. 64, No. 2, 217-239, ISSN 0020-7179, WOS:A1996UN96400003

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