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 701320, 0730 879210
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E-mail	octavian-cezar.pastravanu@academic.tuiasi.ro, 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, Neural networks, 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)	Understanding				Speaking				Writing	
Self-assessment	Listening		Reading		Spoken interaction		Spoken production			
European level (*)										
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

Additional information

Teaching and higher education development

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

Textbooks and monographs: • 18 publications; • First monographs published in Romania on Petri nets (1997), bond graphs (2001).

Advances in higher education: • Knowledge-transfer papers 24.

Doctoral School of the Technical University of Iasi: • Ph.D. supervisor (2005 – present), • Deputy director Faculty AC (2007-2012), • Member of University Council (2012-2016); • Director Faculty AC (2020-present).

Projects for institutional collaboration: Developed within the framework of Tempus-Phare European Program; member of the international steering committees of the projects •0886 (HECE, 1990 - 1992), •2011 (IMPACT, 1991 - 1994), •11467 (COMPANION 1996 - 1999).

Research

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

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

Web of Science profile: https://www.webofscience.com/wos/author/record/AAK-6774-2020
Scopus profile: https://www.scopus.com/authid/detail.uri?authorId=6701685220
Google Scholar profile: https://scholar.google.com/citations?user=7TDHHV8AAAAJ&hl=en&oi=ao
Research Gate profile: https://www.researchgate.net/profile/Octavian-Pastravanu

***h**-index:*• Web of Science 13, • Scopus 14, • Research Gate 18, • Google-Scholar 21.

Citations - Citing articles / Without self-citations: • Web of Science 1229 / 1108, • Scopus 1561 / 1367, • Research Gate 2112, • Google-Scholar 2673. *Citations in* Clarivate - Derwent World Patents Index 36.

Impact factor per paper - cumulative: 112.18; *Impact factor* per author - cumulative: 46.06.

Papers in Q1 *journals: 23. Papers in* Q2 *journals: 2.*

Indexed:• Web of Science 97 • Scopus 113 • Google-Scholar 144,• IEEE Xplore 69 • Zentralblatt 69

Publications:• Journal papers 92, • Conference papers 156,• Book / book-chapters edited by international publishing houses 18, • Book / book-chapters edited by national publishing houses 13, • Manuals 7.

Intellectual property: • US Patent 6,185,469 B1 / Feb. 6, 2001, • O.R.D.A. Certificate 1451/20.07.2004.

R&D grants:• Coordinator 7 (2 international, 5 national), • Team member 28. (3 international, 25 national),

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

• Secretary of the Committee "Automatic control theory and optimal control" of the Romanian Academy – Iasi Branch (2001 – present)

• Member of the Academy of Technical Sciences of Romania ASTR (2005 - present). President of Section 4 Electronics and Automation (2022 – present), Secretary of the ASTR Branch in Iasi (2010 – present)

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

• Member of the Committee "Information Science and Technology" of the National Research Council CNCS (2020 – present)

• Member of the Committee "Computers, Information Technology and Systems Engineering" of the National Council of Titles, Diplomas and Certificates CNATDCU (2011 - 2024).

• Member of the Romanian Society for Control Engineering and Technical Informatics SRAIT (1991 - present). Vice-president (2021 – 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; flow invariance***,

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, (Q1, 4.9)

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, (Q1, 4.8)

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, (Q1, 4.9)

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, (Q1, 6.2)

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, (Q1, 1)

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, (Q1, 3.7)

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, (Q1, 1)

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, (Q1, 6.2)

• ***Model construction* (*non-recursive and meta-models*); *reinforced learning***.

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, (Q1, 4.8)

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. 2023, *Non-recursive Behavioural Models in Control Analysis and Design* (pages 184), Cambridge Scholars Publishing, ISBN:978-1-5275-4296-9

• ***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:* https://www.mathworks.com/products/connections/product_detail/petri-net-toolbox.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, (Q1, 4.8).

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, (Q1, 5.4)

• ***Neural networks in systems and control***

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, (Q1, 6.2)

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. (Q1, 4.4)

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, (Q1, 11.5)

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 (Q3, 1.6)