



University POLITEHNICA of Bucharest
Faculty of Automatic Control and Computers

Splaiul Independenței nr.313, sector 6, cod 060042,
Bucharest, ROMANIA



Prof. Dr. Eng. Ioan Dumitrache
Corresponding member of the Romanian Academy
PhD coordination in Systems Engineering
Doctoral School of Automatic Control and Computers,
University POLITEHNICA of Bucharest

Contact:

Prof. Dr. Eng. Ioan Dumitrache
University POLITEHNICA of Bucharest
Faculty of Automatic Control and Computers
AIS Department
Splaiul Independenței, 313, room ED216, sector 6, 060042, Bucharest, Romania
Phone: +40 21 402 9167 Fax: +40 21 402 9587
E-mail: ioan.dumitrache@acse.pub.ro
Web: www.ioandumitrache.ro

Research profile:

- Advanced Control Strategies and Algorithms
- Intelligent Control for Mobile Robots
- Intelligent Control Systems applied to industrial processes in the areas of: mobile robotics, biotechnical processes, advanced Manufacturing, Transportation Systems, Smart Grid
- Cyber Physical Systems
- Biological Process Modelling and Systems Biology, Control Algorithms for Bioprocess
- Intelligent techniques and Hybrid Architectures for Process Control
- Multi-Agent Systems applied to manufacturing processes and transportation systems
- Autonomous Systems inspired from Biology
- Intelligent Manufacturing Systems

PhD coordinator since 1987;

33 finalized PhD theses
6 undergoing

Publications:

68 books;

7 book chapters;
332 research papers including 88 papers in scientific journals.

Research projects (selected, last 10 years)

- Upgrading Excellence by Strengthening Cooperation between research Teams in an enlarged Europe – UNITE, No. 248583 – FP7, 2011
- Advanced multi-criteria decision algorithms and intelligent control of biotechnologies for preparation of therapeutic products for human use – CNMP - No. 62051 (2008-2011)
- Gathering research competence from universities and research institutes in a modern IT&C based network to support innovation technology transfer, aiming at the access at -Competitiveness and Innovation –2007-2013, IN-TECH-TRANSFER, CEEEX Module I CERES 72-2 / 2006 - 2008
- Intelligent Techniques for modeling, analyzing and optimizing urban traffic -TIME OUT, 2010

Management positions

- 1994–now: Director Human Resources Training Center – Univ. Politehnica of Bucharest
- 2000–2004: Rector, Univ. Politehnica of Bucharest
- 1998–2012: President, National Scientific Research Council

Scientific organization and Scientific Committees,

- 2004–now President, ”Politehnica” Foundation
- 2006– now President, Romanian Association of Research Managers and Administrators (RARMA)
- 2011– now President, Romanian Coalition for Education in Engineering (CREDING)
- 1991– now President Romanian Society of Control Engineering and Technical Informatics (SRAIT), IFAC National Member Organization

Editorial boards

- Control Engineering and Applied Informatics - Editor in Chief
- Studies in Informatics and Control – SIC – <http://sic.ici.ro>
- ROMJIST (Romanian Journal of Information Science and Technology) - <http://www.imt.ro/romjist>
- Scientific Bulletin – Series C – Electrical Engineering and Computer Science – ISSN – 1424-234x
- Cyber-Physical Systems – Francis and Taylor - www.tandfonline.com/tcyb
- Revue roumaine des sciences techniques Série Électrotechnique et Énergétique - <http://revue.elth.pub.ro/>

Proposed subjects:

1. *Strategies for managing intelligent hybrid structures applied to mechatronics - mobile robots*

The research is concerned with how various hybrid structure configurations: GenoFuzzy, NeuroFuzzy or associative GenoNeuroFuzzy can be applied in control algorithms of mobile robots.

2. *Modeling the functions of perception and learning in the context of autonomous systems development*

Hierarchical models for perception and learning functions are developed and integrated with autonomous management structures.

3. *Some aspects of modeling cortical functions - NeuroRobotics for the study of various human behaviours*

The research is concerned with the analysis of using models of various functions in the context of multi-agent structures, emphasizing multi-agents coordination and association.