



Professor Nicolae Goga

PhD coordination in “Computers and Information Technology”
Doctoral School of Automatic Control and Computers,
University POLITEHNICA of Bucharest

Contact:

Prof.dr.ing. Nicolae Goga
University POLITEHNICA of Bucharest
Dept. Engineering Taught in Foreign Languages
313, Splaiul Independenței, Office CJ208, sector 6, 060042 Bucharest
Romania
Phone: +40 (0) 21 402 9607, Fax: +40 (0) 21 402 9607 E-
mail: n.goga@rug.nl

Research profile (according to ERC panels)¹:

PE6_2 Computer systems, parallel/distributed systems, sensor networks, embedded systems, cyber-physical systems

- Parallel/Distributed Systems for Smart Buildings and Smart Cities
- Embedded Systems
- Cyber-Physical Systems
- Internet of things (IoT)

PE6_3 Software engineering, operating systems, computer languages

- Software Testing
- Software Modelling and Evaluation
- Systems Engineering

PE6_4 Theoretical computer science, formal methods, and quantum computing

- Formal Methods applied to Industrial Systems

PE6_5 Cryptology, security, privacy, quantum crypto

- Security for Industrial Systems

PE6_6 Algorithms, distributed, parallel and network algorithms, algorithmic game theory

- Distributed Algorithms for Smart Buildings
- Distributed Algorithms for Medical Systems
- Game theory applied in Education

PE6_7 Artificial intelligence, intelligent systems, multi agent systems

- Intelligent systems and Multi Agent Systems applied for Industrial Systems

PE6_8 Computer graphics, computer vision, multi media, computer games

- Computer Graphics applied for Industrial Systems with emphasis on Medical Systems

PE6_9 Human computer interaction and interface, visualization and natural language processing

- Computer Music Generation
- Natural Language Processing

¹ <https://erc.europa.eu/sites/default/files/document/file/erc%20peer%20review%20evaluation%20panels.pdf>

PE6_10 Web and information systems, database systems, information retrieval and digital libraries, data fusion

- Non-relational DataBase systems
- Big Data Algorithms

PE6_11 Machine learning, statistical data processing and applications using signal processing (e.g. speech, image, video)

- Machine learning and statistical data processing for medical data

PE6_13 Bioinformatics, biocomputing, and DNA and molecular computation

- Molecular Dynamics
- Medical Information systems
- Medical Devices

PhD coordinator since 2016:

2 undergoing theses

Publications:

4 books/chapters;

98 papers.

Recent research projects (in the last 10 years):

Years	Acronym	Role	Title	Program	Beneficiary
2013-pr	AIMMS ²	director	Application for Using Image Data Mining and 3D Modelling in Dental Screening	UEFISCDI PN2	Hospitals
2012-pr	Eurica ³	director	Eurica – Mobility for EU (Postdoc, PhD, Graduate)	Erasmus Mundus	Universities from EU and Latin America
2016 -pr	Premises ⁴	director	Multi-agent based middleware Providing Semantically-Enabled Information for SmES knowledge workers	Eurostar	SME's
20011-2013	QUESTOR ⁵	director	Quest for Reports	Eureka	SME's
2016-pr	DeExMedDi v	director	Designing the Data Transmission Protocol for Medical Equipment Personal Services	UEFISCDI	ISO/IEEE 11073

Proposed subjects:

1. Deploying an experimental pilot in a real clinical environment for clinical decision support

Objective: design and implementation of a clinical decision support system for a given medical domain. If we take the dental domain, the novelty resides in offering advanced computer-aided detection capabilities for the challenging field of oral pathology diagnostic represented by caries and periodontal diseases, periapical pathology orthodontic syndrome, etc

Specific areas of research: recognition of medical pathologies, clinical decision support systems

² <http://aimms.osf-demo.com>

³ www.eurica.nl

⁴ <http://www.premises-project.eu/the-project/>

⁵ www.questor.ro

2. Multi-agent based middleware system for industry

Objective: The aim of the project is to help companies to better exploit their information spaces. The solution will be developed as a software framework, which couples with legacy data systems (commonly used by SME) and will add semantically-enabled information integration, providing the employees with work process-embedded and context-sensitive information services.

Specific areas of research: automatic ontology generation, systems of systems, multi-agents systems

3. Smart Home based on intelligent luminaries

Objective: design and implementation of a smart home that will be based on intelligent luminaries. This product will be defined as a next-generation intelligent LED bulb that includes an additional electronic core for environment interfacing, data acquisition and transmission. This novel solution will enable a set of services to prospective users/clients: telehealth applications, ambient assisted living, home rehabilitation applications, educational or training scenarios, or any other framework where long term pervasive monitoring is required.

Specific areas of research: cyber-physical systems, pattern recognition, ambient assisting living