

Curriculum vitae

Lucian Buşoniu , Prof. dr. eng., research group lead

Web: <http://busoniu.net> , Google Scholar: <https://scholar.google.com/citations?user=INMQGAIAAAAJ>

Contact:

1. Degrees

- Oct 2015: Habilitation (right to independently supervise PhD students) (**at 36 years old**).
- Jan 2009: PhD in control, Delft University of Technology (TUDelft), the Netherlands.
- Mar 2007: Doctoral school *Dutch Institute for Systems and Control* , the Netherlands.
- June 2004: Advanced studies, Technical University of Cluj-Napoca (UTCluj), Romania.
- June 2003: Masters (5-year degree) in control engineering, UTCluj , Romania. Valedictorian.

2. Academic experience

- 2013 – present: **Founder & lead** of the research group in [Robotics and Nonlinear Control](#), which **spearheaded reinforcement learning for control in Romania**, 6 permanent members and about 20 research students in employment; attracted over 5MEUR in funding under my lead.
- Oct 2011 assistant, Oct 2014 associate, Oct 2018 **full professor**, Automation Dept., UTCluj.
- Mar 2020: **Co-founder** of Robotics.AI startup in artificial intelligence for robotics.
- Jan 2012 – Sept 2013: CNRS Researcher, Research Center for Automatic Control of Nancy, France. Position obtained **via a highly selective competition with a success rate of ~5%** .
- Jan 2009 – Dec 2011: Postdoctoral researcher at INRIA, France, and TUDelft, Netherlands.
- Oct 2003 – Jan 2005: Teaching assistant, Automation Department, UTCluj.

3. Awards, honors, and notable achievements

- Author of more than **110 scientific publications** , including: more than 30 articles in journals (most of them in the ISI "red zone" Q1), more than 70 papers at international conferences, most of them indexed by ISI or IEEE, 7 book chapters, 1 book at the publishing house Taylor & Francis, 1 book edited at Springer.
- **Highest-cited researcher** from UTCluj (1500+ researchers), see [Google Scholar of UTCluj](#).
- My first journal article, *A Comprehensive Survey of Multi-Agent Reinforcement Learning*, in IEEE Transactions on Systems, Man & Cybernetics Part C, received the 2009 **Andrew Sage Award for Best Article** and the **Highly Cited Paper Award** – top 1% of ISI cited papers. Over **2000** Google Scholar citations , the most important reference in the field.
- Monograph *Reinforcement Learning and Dynamic Programming Using Function Approximators* , Taylor & Francis CRC Press, has become a **major reference in the field** , with over 1000 Google Scholar citations.
- *Cum laude* distinction for the PhD thesis – **the highest in the Netherlands**, awarded to ~ 7% of PhD defenses at TUDelft.
- Over **1.5 million euros** obtained as PI in international and national funding calls (total value of projects won over 15 million euros).
- **Ranked first** for a faculty position at Université Charles de Gaulle Lille III.
- 18 times awarded PRECISI prize for publication in high-impact journal; one of these for **the top 1 journal** in Measurement & Instrumentation - IEEE Trans. on Industrial Electronics.

- Invited many times by **the media** to discuss research topics in reports on television, radio, and printed media, both international and Romanian.
- Best Presentation in Session, double award received at the 2004 IEEE-TTTC International Conference on Automation , Quality and Testing, Robotics (AQTR-04).

4. Scientometric indicators

- Over **8000 citations** and h-index 26 in Google Scholar
- Over 2500 citations and h-index 13 in ISI Web of Knowledge .
- On average over 30 ISI citations / article, **more than 3 times the average** in computer science (7.98) and engineering (8.94) according to InCites .

5. Projects led as Principal Investigator (funded by competition; selection)

- 2023 – 2026: Institution PI and proposal lead for the Horizon Europe Innovation Action project *SeaClear2.0: Scalable Full-cycle Marine Litter Remediation in the Mediterranean : Robotic and Participatory Solutions* , total budget 9 MEUR, UTCluj 600 KEUR.
- 2020 – 2023: Institution PI and proposal lead for the Horizon 2020 Research and Innovation Action [*SeaClear : SEarch , identification and Collection of marine litter with Autonomous Robots*](#) , total budget 5 MEUR, UTCluj 555 KEUR. Team of 7 people at UTCluj .
- 2021 – 2023: PI UEFISCDI Premiere Orizont 2020 [*SeaMap*](#) , 40KEUR. 4 pers.
- 2018 – 2020: PI UEFISCDI Young Teams [*AIRGUIDE: A Learning Aerial Guide for the Elderly & Disabled*](#) , 100KEUR. 6 pers.
- 2013 – 2016 UEFISCDI Young Teams [*Reinforcement Learning & Planning for Large -Scale Systems*](#) , 180KEUR. 4 pers.
- 2018 – 2018 : Instituion lead of Erasmus+: [*Co4AIR Computers , Cognition and Communication in Control : A strategic partnership*](#) , total budget 350 KEUR, UTCluj 32 KEUR, 5 pers.
- 2015 – 2017: PI for **3 international cooperation projects** with France and Hungary: AUF NETASSIST, CNRS PICS, PHC Brâncuşi AICONS, 36KEUR in total. Teams of up to 11 people.

6. Plenaries and keynotes

- July 2023: *Reinforcement learning and planning with applications to robotics* , **semi-plenary lecture** at the European Control Conference 2023, Bucharest, Romania.
- June 2018: *AI planning for nonlinear optimal control*, **keynote** at IFAC CESCIT, Faro, Portugal.
- Oct 2022: *RL and planning for robotics*, keynote at Romanian AI Days, Oradea, România.
- Feb 2019: *Overview of RL*, keynote at Timişoara Workshop on Machine Learning, România.
- Nov 2018: *Optimistic planning in MDPs*, keynote at Asian Workshop on ML, Beijing, China.
- Oct 2015: keynote at IROS Workshop on ML in Planning and Control, Hamburg, Germany.
- Dec 2013: keynote at Workshop on Intelligent Planning and Control, IEEE CDC, Florence, Italy.
- Dec 2011: keynote at Workshop on Optimal Adaptive Control, IEEE CDC, Orlando, USA.

7. Invitations to summer schools. Invited presentations (selection)

- Sept 2021: Grenoble Automatic Control School, France.
- July 2020: MIR Labs Webinar Series, global organization .
- Mar 2019: Winter school on RL, Dutch Institute of Systems and Control, Delft, The Netherlands.
- Jul 2018: Transylvanian Machine Learning Summer School , Cluj, Romania.

- Oct 2017: ACAI Summer School on RL, Nieuwpoort, Belgia.
- Sept 2019: North-Eastern University, Shenyang, China.
- Jan 2019: DeepMind, Paris, France.
- Nov 2018: Chinese Academy of Sciences, Beijing, China.
- Jun 2016: City University London, UK.
- Sept 2014: Italian Institute of Technology, Genova, Italy.
- Sept 2010: University of Liege, Belgium.
- Other invited presentations in Italy, France, Croatia , etc.

8. Event organization and editorial activity

- **Organizer** of the 6th IFAC ICONS – International Conference on Intelligent Control and Automation Sciences (Cluj-Napoca, Romania).
- Organizer of the 2015 (Cape Town, South Africa) and 2014 (Orlando, United States) editions of the IEEE Symposium on ADPRL – Adaptive Dynamic Programming and Reinforcement Learning .
- Organizer of *open invited events tracks* on machine learning in control at: ■IFAC World Congress 2023 (Yokohama, Japan), ■2020 (Berlin, Germany), ■2017 (Toulouse, France), ■IFAC ICONS 2022 (Cluj-Napoca, Romania).
- Organizer of special sessions on reinforcement learning at : ■IEEE CDC 2016 (Las Vegas, United States); ■IEEE ADPRL 2013 (Singapore) and ■2011 (Paris, France).
- **Associate Editor** for ISI Q1 Engineering Applications of AI journal, 2015-present.
- Associate editor for conferences: IFAC World Congress 2023, 2020, 2017; European Control Conf. 2023; IFAC CESCIT 2021; IROS 2020; IFAC ICONS 2016; IFAC SYROCO 2015, etc.

9. PhD students

- **Main advisor:**
 - Finished: Z. Nagy, Daniel Mezei.
 - In progress: M. Rosynski , B. Yousuf , I. Lal, M. Dragomir, F. Gogianu, T. Santejudean, E. Gorski
- **Co-advisor** for completed doctoral projects:
 - I. Grondman , Delft University of Technology, The Netherlands
 - G. Feng , Univ Polytechnique Hauts -de-France, France
 - M. Granzotto , Center de Recherche en Automatique de Nancy, France
 - K. Mathe , UTCluj .

In addition, led dozens of MSc and BSc projects, including 9 in the Netherlands (most completed *cum laude*).

10. Reviewing and committee activities

- **Vice-president** of the IFAC Technical Committee 3.2 Computational Intelligence in Control.
- Member of the IEEE Adaptive Dynamic Technical Committee Programming and RL.
- President of several doctoral committees at UTCluj.
- **Reviewer** of doctoral theses from abroad: University Politècnica de Catalunya, Spain; TUDelft, Netherlands; INRIA, France; Czech Technical University in Prague, Czech Republic.
- Reviewer for major international funding bodies, for example: NSERC Canada, EPSRC UK, NWO Netherlands, FWO & SBO Belgium, ANR France, National Science Center Poland.

- Reviewer for top journals in automatics (Automatica, IEEE TAC), AI (JAIR, IEEE TNNLS, IEEE TSMC, EAAI), and machine learning (JMLR, MLJ, Neurocomputing).
- Reviewer for top conferences in robotics (IROS, ICRA), control (CDC, ACC, ECC), AI and machine learning (ICML, NeurIPS, IJCAI).
- Selection committees for the entire range of positions from PhD student to full professor (e.g. at Politehnica Bucharest, University of Bucharest, Transylvania University of Brasov).

11. Notable international collaborations

- 2020 – present: Prof. Claudia Clopath, Imperial College London, and Dr. Razvan Pascanu, DeepMind, UK.
- 2017 – present: Prof. Dragan Nesic, University of Melbourne, Australia.
- 2017 – present: Prof. Thierry-Marie Guerra, Universite Polytechnique Hauts-de-France, France.
- 2015 – 2018: Prof. Jens Braband, Technische Universität Braunschweig and Siemens, Germany.
- 2012 – present: Prof. Constantin Morărescu, Prof. Jamal Daafouz, Dr. Romain Postoyan, Center de Recherche en Automatique de Nancy, France.
- 2010 – 2018 : Dr. Remi Munos, INRIA, France and DeepMind, UK.
- 2009 – present: Prof. Robert Babuska, Prof. Bart De Schutter, TUDelft, Netherlands.
- 2006 – 2011: Prof. Damien Ernst, University of Liege, Belgium.

12. Teaching. Visiting professor

- 2011 - present: UTCluj, as course lead:
 - *Reinforcement learning*, a new master's course in English that will start from 2024.
 - *Learning control*, newly created master's course on learning for control.
 - *System Identification*, radically revised undergraduate course.
 - *Optimization*, undergraduate course.
- **Visiting professor** on several occasions at the University Polytechnique Hauts-de-France, and at Northeastern University, Shenyang, China.
- 2017: Master's invited course *Reinforcement Learning and Approximate Dynamic Programming* at the Politecnica de Valencia, Spain.
- 2014: invited by R. Munos to Microsoft Research Center New England, Boston, US.
- 2005-2011: Invited lectures TUDelft, Netherlands:
 - *RL for Robot Control* within the master course *Control Methods for Robotics*.
 - *RL* within the master course *Knowledge-Based Control Systems*.

13. Media appearances (examples)

- Television, e.g. ProTV news, in **prime time** – news at 7PM on November 25, 2021: [Robot for underwater waste](#); Antena 1, June 23, 2021, Observator: Robots will clean underwater litter.
- International print media (e.g. The Times), national (eg MediaFax), and local (eg [Monitorul CJ](#)).
- Radio (eg June 9, 2021, Radio Romania).