



# Mircea Șușcă

**Date of birth:** 05/08/1994 | **Nationality:** Romanian | **Sex:** Male | **Email:** [mircea.susca@aut.utcluj.ro](mailto:mircea.susca@aut.utcluj.ro) | **Website:** <https://www.researchgate.net/profile/Mircea-Susca>

## ● **NETWORKS & MEMBERSHIPS**

01/10/2016 – CURRENT

### **IEEE Control Systems Society**

IEEE Member & IEEE Control Systems Society Member

**Link** <https://ieeecss.org/>

01/10/2020 – CURRENT Philadelphia

### **Society for Industrial and Applied Mathematics (SIAM)**

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**Link** <https://www.siam.org/>

15/05/2019 – CURRENT Bucuresti

### **Societatea Romana de Automatica si Informatica Tehnica (SRAIT)**

**Link** <http://www.srait.ro/>

15/05/2018 – 15/05/2021 Pennsylvania

### **Society of Automotive Engineers (SAE)**

**Link** <https://www.sae.org/>

## ● **WORK EXPERIENCE**

### **TECHNICAL UNIVERSITY OF CLUJ-NAPOCA – CLUJ NAPOCA, ROMANIA**

#### **LECTURER, AUTOMATION DEPARTMENT, FACULTY OF AUTOMATION AND COMPUTER SCIENCE –**

**20/02/2025 – CURRENT**

- Course in System Identification (3rd year, Bachelor's in Systems Engineering);
- Research interests: Robust Control, Nonlinear Control, Numerical Optimization, Applied Linear Algebra, Rapid Control Prototyping, Signal Processing;
- Bachelor and Master Thesis coordinator (57 + 4 finalized projects to date) in Control Engineering, System Theory, Rapid Control Prototyping, Manufacturing Processes;
- Laboratory works for the following disciplines: System Theory I (2nd year), System Theory II, System Identification, Electric and Electronic Control Equipment (3rd year), Continuous Plant Control (4th year).

### **TECHNICAL UNIVERSITY OF CLUJ-NAPOCA – CLUJ-NAPOCA, ROMANIA**

#### **TEACHING ASSISTANT, AUTOMATION DEPARTMENT, FACULTY OF AUTOMATION AND COMPUTER SCIENCE – 30/09/2017 – 20/02/2025**

Laboratory works for the following disciplines:

- System Theory I - 2<sup>nd</sup> year of study (Automation and Computer Science);
- System Theory II - 3<sup>rd</sup> year of study;
- System Identification - 3<sup>rd</sup> year of study;
- Electric and Electronic Control Equipment - 3<sup>rd</sup> year of study;
- Continuous Plant Control - 4<sup>th</sup> year of study;

Bachelor Thesis coordinator in Control Engineering, System Theory, Rapid Control Prototyping, Manufacturing Processes, Numerical Optimization.

**IFM SOFTWARE SRL – CLUJ-NAPOCA, ROMANIA****DATA SCIENCE ENGINEER – 03/01/2018 – CURRENT**

Developing and implementing embedded applications using machine learning, deep learning and statistical models for text and speech processing. Projects include named-entity recognition, monaural source separation, and text-to-speech generation models used for in-car multimedia applications. Additionally, using signal processing and numerical optimization, other projects include ball bearing defect detection and CNC chattering detection using vibration sensors (collaboration with IFM) and order partitioning for billets cutting loss optimization (collaboration with Tenaris Silcotub).

**EMERSON SRL – CLUJ-NAPOCA, ROMANIA****MACHINE LEARNING DEVELOPER – 19/01/2016 – 18/12/2017**

Research and develop information systems that include algorithms and machine learning models, systems used for a better knowledge and prediction of the market and the company's clients, and improve existing products. Creating a system for data deduplication using machine learning and fuzzy logic algorithms. Spectral analysis of tool data used in predictive maintenance.

**CONTINENTAL AUTOMOTIVE SRL – TIMIȘOARA, ROMANIA****ASSISTANT PROGRAMMER – 01/07/2015 – 04/09/2015**

Design, implementation, debugging, and optimizing of software on embedded microprocessors using C/C++ and Qt Framework. Ability to obtain a completely functional and modular digital instrument cluster written with MVC (OOP) design principle in mind, in a short period of time, and with no prior experience with the considered framework.

**EDUCATION AND TRAINING**

01/10/2023 – 15/07/2024 Cluj-Napoca, Romania

**PSYCHO-PEDAGOGICAL STUDIES, FIRST MODULE AND SECOND MODULE** Technical University of Cluj-Napoca

**Website** <https://dspp.utcluj.ro/> | **Field of study** Teacher training without subject specialisation | **Level in EQF** EQF level 5

29/09/2019 – 23/06/2023 Cluj-Napoca, Romania

**PHD DEGREE IN SYSTEM ENGINEERING -- SUMMA CUM LAUDE** Technical University of Cluj-Napoca

**Address** Str. G. Baritiu nr. 26-28, 400027, Cluj-Napoca, Romania | **Website** <http://iosud.utcluj.ro/> |

**Final grade** Summa Cum Laude | **Level in EQF** EQF level 8 |

**Thesis** Tools for a unified design and implementation of robust control systems

01/10/2021 – 15/07/2022 Cluj-Napoca, Romania

**TRAINING PROGRAM ANTREDOC** Technical University of Cluj-Napoca

**Website** <http://rocon.utcluj.ro/ab/> | **Field of study** Business, administration and law | **Level in EQF** EQF level 6

30/09/2017 – 14/07/2019 Cluj-Napoca, Romania

**MASTER'S DEGREE IN ADVANCED PROCESS CONTROL -- VALEDICTORIAN** Technical University of Cluj-Napoca

2 year course in Automation and Control Systems Engineering (ISCED 7). Main disciplines: stochastic and nonlinear systems, robust and optimal control theory, hybrid systems, embedded systems.

**Address** Str. G. Baritiu nr. 26-28, 400027, Cluj-Napoca, Romania | **Website** <https://ac.utcluj.ro/> | **Final grade** 10 |

**Level in EQF** EQF level 7 | **Thesis** Solving Algebraic Riccati Equations Using Proper Deflating Subspaces for H2/Hinf Synthesis

30/09/2013 – 14/07/2017 Cluj-Napoca, Romania

**BACHELOR OF SYSTEMS ENGINEERING -- VALEDICTORIAN** Technical University of Cluj-Napoca

4 year course in Automation and Control Systems Engineering (ISCED 6). Main disciplines: real-time systems, control systems, mathematical optimization, digital signal processing, discrete-event systems, power electronics, process



modelling, system identification, microprocessor-based systems, software engineering, computer programming, data structures and algorithms.

**Address** Str. G. Baritiu nr. 26-28, 400027, Cluj-Napoca, Romania | **Website** <https://ac.utcluj.ro/> | **Final grade** 9.93 |

**Level in EQF** EQF level 6 | **Thesis** Control Algorithms Implementation using RCP Technology

## ● LANGUAGE SKILLS

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Mother tongue(s): **ROMANIAN**

Other language(s):

	UNDERSTANDING		SPEAKING		WRITING
	Listening	Reading	Spoken production	Spoken interaction	
<b>ENGLISH</b>	C1	C1	C1	C1	C1
<b>FRENCH</b>	B1	B1	B1	B1	B1

Levels: A1 and A2: Basic user - B1 and B2: Independent user - C1 and C2: Proficient user

## ● CONFERENCES & SEMINARS

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20/08/2024 – 20/09/2024 Nancy, France

### **Seminar Talk on Passivity of Linear Singularly Perturbed Systems**

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Research visit to Université de Lorraine, CNRS, CRAN UMR 7039, F-54000 Nancy, France, with Seminar Talk on "Passivity of Linear Singularly Perturbed Systems", based on the IEEE L-CSS and CDC paper with the same title.

01/01/2020 – 20/09/2025 -

### **Conference and Journal reviewer**

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58 peer review records for the IEEE Conference on Decision and Control, IEEE European Control Conf., IFAC World Congress, IEEE Trans. on Fuzzy Systems, Engineering Applications of Artificial Intelligence, IEEE Control Systems Letters, Mechatronics, Annual Reviews in Control, International Journal of Dynamics and Control, International Journal of Hydrogen Energy, Springer Scientific Reports.

01/01/2022 – 20/09/2025 -

### **Session Chair and Co-Chair**

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IEEE Conference on Decision and Control (CDC 2023, 2025), IEEE Conference on Control Technology and Applications (CCTA 2023), IEEE European Control Conference (ECC 2023, 2024), IFAC Symposium on Robust Control Design (ROCOND 2022), International Conference on System Theory, Control and Computing (ICSTCC 2023), International Conference on Automation, Quality and Testing, Robotics (AQTR 2024)

## ● PUBLICATIONS

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2025

### **[A Passivity Analysis Tool for Linear Clustered Multi-Agent Systems](#)**

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M. Şușcă, V. Mihaly, Z. Lendek and I. -C. Morărescu, "A Passivity Analysis Tool for Linear Clustered Multi-Agent Systems," in IEEE Control Systems Letters, vol. 9, pp. 739-744, 2025

**Authors:** M. Şușcă, V. Mihaly, Z. Lendek and I. -C. Morărescu | **Journal Name:** IEEE Control Systems Letters | **Volume, Issue and Pages:** vol. 9, pp. 739-744 | **Publisher:** IEEE

2024

### **[Passivity of Linear Singularly Perturbed Systems](#)**

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M. Şușcă, V. Mihaly, Z. Lendek and I. -C. Morărescu, "Passivity of Linear Singularly Perturbed Systems," in IEEE Control Systems Letters, vol. 8, pp. 2105-2110, 2024



**Authors:** M. Şușcă, V. Mihaly, Z. Lendek and I. -C. Morărescu | **Journal Name:** IEEE Control Systems Letters | **Volume, Issue and Pages:** vol. 8, pp. 2105-2110 | **Publisher:** IEEE

2024

### [Robust numeric implementation of the fractional-order element](#)

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V. Mihaly, M. Susca and P. Dobra, "Robust numeric implementation of the fractional-order element", Journal of the Franklin Institute Volume 361, Issue 14, September 2024, 107087

**Journal Name:** Journal of the Franklin Institute | **Volume, Issue and Pages:** Volume 361, Issue 14 | **Publisher:** Elsevier

2023

### [Maximizing the Exponential Decay Rate for Finite Dimensional Bilinear Systems using Passivity-Based Controllers](#)

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V. Mihaly, M. Şușcă and P. Dobra, "Maximizing the Exponential Decay Rate for Finite Dimensional Bilinear Systems using Passivity-Based Controllers," 2023 62nd IEEE Conference on Decision and Control (CDC), Singapore, Singapore, 2023, pp. 5670-5675

**Authors:** V. Mihaly, M. Şușcă and P. Dobra | **Journal Name:** 2023 62nd IEEE Conference on Decision and Control (CDC), | **Volume, Issue and Pages:** pp. 5670-5675 | **Publisher:** IEEE

2023

### [Uncertainty Modelling of Mechanical Systems with Derivative Behaviour for Robust Control Synthesis](#)

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M. Şușcă, V. Mihaly, M. Stănescu and P. Dobra, "Uncertainty Modelling of Mechanical Systems with Derivative Behaviour for Robust Control Synthesis," 2023 European Control Conference (ECC), Bucharest, Romania, 2023, pp. 1-7

**Authors:** M. Şușcă, V. Mihaly, M. Stănescu and P. Dobra | **Journal Name:** 2023 European Control Conference (ECC) | **Volume, Issue and Pages:** pp. 1-7 | **Publisher:** IEEE

2023

### [Maintaining Robust Stability and Performance through Sampling and Quantization](#)

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M. Şușcă, V. Mihaly and P. Dobra, "Maintaining Robust Stability and Performance through Sampling and Quantization," 2023 American Control Conference (ACC), San Diego, CA, USA, 2023, pp. 3852-3858

**Authors:** M. Şușcă, V. Mihaly and P. Dobra | **Journal Name:** 2023 American Control Conference (ACC) | **Volume, Issue and Pages:** pp. 3852-3858 | **Publisher:** IEEE

2023

### [Sampling rate selection for multi-loop cascade control systems in an optimal manner](#)

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M. Şușcă, V. Mihaly and P. Dobra, "Sampling rate selection for multi-loop cascade control systems in an optimal manner", Wiley IET CTA Volume17, Issue8 May 2023 Pages 1073-1087

**Authors:** M. Şușcă, V. Mihaly and P. Dobra | **Journal Name:** IET Control Theory & Applications | **Volume, Issue and Pages:** Volume17, Issue8 | **Publisher:** Wiley

2022

### [Fixed-Point Uniform Quantization Analysis for Numerical Controllers](#)

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M. Şușcă, V. Mihaly and P. Dobra, "Fixed-Point Uniform Quantization Analysis for Numerical Controllers," 2022 IEEE 61st Conference on Decision and Control (CDC), Cancun, Mexico, 2022, pp. 3681-3686

**Authors:** M. Şușcă, V. Mihaly and P. Dobra | **Journal Name:** 2022 IEEE 61st Conference on Decision and Control (CDC) | **Volume, Issue and Pages:** pp. 3681-3686 | **Publisher:** IEEE

2022

### [Approximating the Fractional-Order Element for the Robust Control Framework](#)

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V. Mihaly, M. Şușcă, E. H. Dulf and P. Dobra, "Approximating the Fractional-Order Element for the Robust Control Framework," 2022 American Control Conference (ACC), Atlanta, GA, USA, 2022, pp. 1151-1157



2022

## **Polytopic Robust Passivity Cascade Controller Design for Nonlinear Systems**

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V. Mihaly, M. Şușcă, D. Morar and P. Dobra, "Polytopic Robust Passivity Cascade Controller Design for Nonlinear Systems," 2022 European Control Conference (ECC), London, United Kingdom, 2022, pp. 2105-2110

## **SKILLS**

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### **Computer Skills, Languages, Platforms, Tools**

Microsoft Office | Microsoft Word | Google Docs | Microsoft Powerpoint | Microsoft Excel | LaTeX | Social Media | Analytical skills | Embedded/ISO C | WhatsApp | MacOS | Skype | Linux | Code Composer Studio | Internet user | Power Point | GNU Emacs | C/C++ | Basic Java/C# | Facebook | Renesas HEW | Siemens TIA Portal | Outlook | PyCharm | Microsoft Teams | Siemens SIMATIC Step 7 | LinkedIn | Eclipse | Windows | Google Drive | Python | Instagram | Zoom | MATLAB & Simulink

### **Social and Work Skills**

Good listener and communicator | Creativity | Research and analytical skills | Critical thinking | Organizational and planning skills | Presenting | Reliability | Motivated | Decision-making | Conflict resolution | Strategic Planning | Written and Verbal skills

## **DRIVING LICENCE**

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**Driving Licence:** B