Ovidiu Păucă

Date of birth: 20/11/1994 | **Nationality:** Romanian | **Phone number:**

(+40) 0748766197 (Mobile) | **Email address:** pauca.ovidiu@ac.tuiasi.ro | **Email address:**

ovidiu.pauca@academic.tuiasi.ro | **Address:** Iasi, Romania (Home)

WORK EXPERIENCE

17/07/2017 – 30/09/2019 Iasi, Romania
FUNCTION DEVELOPER CONTINENTAL AUTOMOTIVE ROMANIA SRL

01/10/2019 – CURRENT Iași, Romania
PHD STUDENT GHEORGHE ASACHI TECHNICAL UNIVERSITY OF IASI,

Thesis title: "*Cooperating automated vehicles through communication networks*", Supervisors: Prof.dr.eng. Constantin-Florin Căruntu

01/11/2019 – CURRENT Iasi, Romania
UNIVERSITY TEACHING ASSISTANT GHEORGHE ASACHI TECHNICAL UNIVERSITY OF IASI,

01/01/2021 – 31/12/2022 Iasi, Romania
MEMBER INTEROPERATE

Member of the research project entitled Optimized control of automatic vehicle groups cooperative (eng., Flocking-based optimized control of cooperative automated vehicles - INTEROPERATE), having the code PN-III-P1-1_1-TE-2019-1123, within the Program PN III Development of the national CD system, subprogramme Research projects for the stimulation of young independent teams, funded by the Unit Executive for the Financing of Higher Education, Research, Development and Innovation, director project: Prof.dr.ing. Constantin-Florin Caruntu, development period: 01.2021-12.2022, value 431542 RON (https://traffic- interact.ro/interoperate/).

Iași, Romania
MEMBER INTERACT

Member of the research project entitled Efficiency and Safety collaborative traffic functions in intelligent intersections, financed by OrangeFab Romania, value 50,000 RON (https: //traffic-interact.ro / team /).

01/12/2022 – 30/06/2023 Iasi, Romania
MEMBER GRANT INTERN TOP-DOWN GHEORGHE ASACHI TECHNICAL UNIVERSITY OF IASI

Member of the Grant Intern top-down type, no. GI-TD-DigitAll-5 /2022, funded by University Research Funds of TUIASI, duration from December 2022 to June 2023.

01/08/2022 – 30/09/2023 Iași, Romania
MEMBER TUIASI – COMPETE 2.0

Member of the research project with the title Institutional Development of Tuiasi by increasing the performance in research, development and innovation - competes for 2.0, financed by contract no. 27PFE/2021.

01/07/2023 – 31/12/2023 Iasi, Romania
COLLABORATIVE ENVIRONMENT FOR DEVELOPING CLOUD ARCHITECTURES BASED ON OPENSTACK WITH APPLICATIONS IN RDI GHEORGHE ASACHI TECHNICAL UNIVERSITY OF IASI

Member in the project titled "Collaborative Environment for Developing Cloud Architectures Based on OpenStack with Applications in RDI", with the SMIS code: 124998, Project Manager, prof. dr. eng. mat. Daniel Condurache.

CURRENT Iasi, Romania
MEMBER CODISMA/COMPETE 2.0 GHEORGHE ASACHI TECHNICAL UNIVERSITY OF IASI

Project member of "Distributed Coalition Control for Multi-Agent Systems (CoDiSMA)", Team 5, with the code: 27 PFE/ 30.12.2021, Project title: Institutional development of TUIASI through increased performance in research, development, and innovation - COMPETE 2.0.

EDUCATION AND TRAINING

01/10/2013 – 05/07/2017 Iasi, Romania
DIPLOMA ENGINEER Gheorghe Asachi Technical University of Iasi,

Graduate project: "Controlling of the Pitch Angle of an Airplane using Neural Networks" , Promoter: Conf. dr. eng. Mirea Letitia.

01/10/2017 – 17/06/2019 Iasi, Romania
MASTER ENGINEER Gheorghe Asachi Technical University of Iasi

Dissertation: "Predictive Control for the Lateral and Longitudinal Dynamics in Automated Vehicles" , Promoters: Assoc. prof. dr. eng. Caruntu, Constantin - Florin, prof. dr. eng. Lazar, Corneliu.

FELLOWSHIPS AND MOBILITIES

17/08/2021 – 09/11/2021
Research mobility at the Higher Technical School of Engineering University of Seville, Spain, Department of Systems Engineering and Automation, coordinator Prof. Jose M. Maestre.

28/06/2022 – 23/09/2022
Research mobility (Erasmus+) at TU/E Eindhoven, Holland, Electrical Engineering Department, Coordinator Associate Prof. Mircea Lazăr

COURSES

24/06/2024 – 28/06/2024
EECI : The scenario approach: data science for systems, control, and machine learning

01/05/2024 – 05/07/2024
EECI M17 course - The scenario approach: data science for systems, control, and machine learning

PRIZES

Award for the PhD student with the best performance in scientific research in 2022.

Award offered by "Gheorghe Asachi" Technical University of Iasi

The paper "Multivariable Optimisation for Waiting-Time Minimisation at Roundabout Intersections in a Cyber-Physical Framework" - Q1 (authors: Pauca O., A. Maxim, and C.F. Caruntu) published in the Sensors, 21, was awarded in 2021 by UEFISCDI.

LANGUAGE SKILLS

Mother tongue(s):   **ROMANIAN**

Other language(s):

	UNDERSTANDING		SPEAKING		WRITING
	Listening	Reading	Spoken production	Spoken interaction	
ENGLISH	B1	B1	B1	B1	B1

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

List of publications

1. Articles Published in ISI-Indexed journals

1. **Pauca O**., A. Maxim, and C.F. Caruntu, *"Control Architecture for Cooperative Autonomous Vehicles Driving in Platoons at Highway Speeds," in IEEE Access, vol. 9, 2021,* ***I.F. - 3.9***.

2. **Pauca O**., A. Maxim, and C.F. Caruntu, "*Multivariable Optimisation for Waiting-Time Minimisation at Roundabout Intersections in a Cyber-Physical Framework*", Sensors, 21, 2021*,* ***I.F. - 3.9***.

3. **Pauca O**, M. Lazar and C. F. Caruntu, "*Hybrid Cost Function Distributed MPC for Vehicle Platoons With Stability and String Stability Properties*," in IEEE Control Systems Letters, vol. 7, pp. 2257-2262, 2023, ***I.F. – 3***.

4. Maxim A, **Pauca O**, Caruntu C-F., "*Distributed Model Predictive Control and Coalitional Control Strategies—Comparative Performance Analysis Using an Eight-Tank Process Case Study*", in Actuators, 2023; 12(7), ***I.F. -2 .6***.

5. Lazar, R.-G.; **Pauca, O**.; Maxim, A.; Caruntu, C.-F., "*Control Architecture for Connected Vehicle Platoons: From Sensor Data to Controller Design Using Vehicle-to-Everything Communication*", Sensors, 23, 2023, ***I.F. - 3.9***.

6. Maxim A, **Pauca O**, Amariei R-G, Braescu F-C, Caruntu C-F., "*Coalitional Control Strategy for a Heterogeneous Platoon Application*", Mathematics, 12, 2024, ***I.F. – 2.4***.

7. Maxim, **O. Pauca** and C. F. Caruntu, "*Coalitional Distributed Model Predictive Control Strategy with Switching Topologies for Multi-Agent Systems*", Electronics 13, no. 4: 792, 2024, **IF=2.9**.

2. Articles Published in Index Copernicus journals

1. **O. Pauca**, C. F. Caruntu, A. Maxim, and C. Lazar, "*Control acrhitecture for automated vehicles to ensure obstacle avoidance*," in Buletinul Institutului Politehnic din Iasi, vol. 66(70), no. 4, Iasi, Romania, pp. 69–83, 2021.

3. Publications in international conferences indexed ISI proceedings

1. **Pauca O**., Caruntu C. F., Lazar C., " *Predictive Control for the Lateral and Longitudinal Dynamics in Automated Vehicles* ", 23rd International Conference on System Theory Control and Computing (ICSTCC), 2019.

2. **Pauca O**., Caruntu C. F., Maxim A., " *Trajectory Planning and Tracking for Cooperative Automated Vehicles in a Platoon*", 24th International Conference on System Theory Control and Computing (ICSTCC), 2020.

3. Maxim A., **Pauca O.**, Caruntu C. F., Lazar C., *" Distributed Model Predictive Control Algorithm with Time-Varying* ", 24th International Conference on System Theory Control and Computing (ICSTCC), 2020.

4. **Pauca O**., A. Maxim, and C.F. Caruntu, "*DMPC-based Data-packet Dropout Compensation in Vehicle Platooning Applications using V2V Communications*", European Control Conference (ECC) (online), 2021.

5. **Pauca O.**, C.F. Caruntu, and A. Maxim, "*Trajectory Planner based on Third-Order Polynomials Applied for Platoon Merging and Splitting*", 29th Mediterranean Conference on Control and Automation (MED) (online), 2021.

6. **Pauca O.**, C.F. Caruntu, and A. Maxim, "*Cooperative Platoons Merging for Obstacle Avoidance on Highways,*" 2021 25th International Conference on System Theory, Control and Computing (ICSTCC), 2021.

7. C. F. Caruntu, C. M. Pascal, A. Maxim, **O. Pauca**, "*Bio-inspired Coordination and Control of Autonomous Vehicles in Future Manufacturing and Goods Transportation*", IFAC-Papers-OnLine, 52(2), 2020, Pages 10861-10866, presented at 21th IFAC World Congress, Germany.

8. **Pauca O.,** Caruntu C. F., " *Travel Time Minimization at Roundabouts for Connected and Automated Vehicles*", 25 International Conference on Emerging Technologies and Factory Automation (ETFA), 2020.

9. **Pauca O.,** A. Maxim and C. F. Caruntu, "*Communication topologies evaluation for a vehicle merging into a platoon on highway,*" 30th Mediterranean Conference on Control and Automation (MED), 2022.

10. A. Maxim, **Pauca O**, J. M. Maestre and C. F. Caruntu, "*Assessment of computation methods for coalitional feedback controllers,*" European Control Conference (ECC), 2022.

11. **O. Pauca**, A. Maxim and C. F. Caruntu, "*Vehicle Trajectory Planning for Collision Avoidance with Mobile Obstacles*," 26th International Conference on System Theory, Control and Computing (ICSTCC), Sinaia, Romania, 2022

12. **O. Pauca,** A. Maxim, J.M. Maestre, C. F. Caruntu, "*Bio-inspired control by overlapping adaptive clusters: a vehicle platoon case study*", IFAC-PapersOnLine, Volume 56, Issue 2, 2023.

13. A. Maxim, **O. Pauca** and C. F. Caruntu, "*Assessment of Control Efficiency in a Vehicle Platooning Application*", European Control Conference (ECC), Bucharest, Romania, 2023 pp. 1-6.

4. Publications in international conferences indexed BDI

1. C. F. Caruntu, V. Varga and **O. Pauca**, "*TrueTime-based Analysis of the Communication Networks used in Vehicle Control Structures*," 21th International Carpathian Control Conference (ICCC), High Tatras, Slovakia, pp. 1-6, 2020.

2. **O. Pauca**, M. Lazar and C. F. Caruntu, "*Cooperative adaptive cruise control with string stability based on DMPC for vehicle platooning*," 27th International Conference on System Theory, Control and Computing (ICSTCC), Timisoara, Romania, 2023

Iasi, 07.07.2024   PhD student. Eng. Păucă Ovidiu