Mihail Cojocari

Data nașterii: 03/03/1994

Locul nașterii: Dumbrăvița, Moldova

Cetățenie: română , moldoveană

CONTACT

Iași, România **(Acasă)**

mihail.cojocari@academic.tuiasi.ro

mihail.cojocari@outlook.com

(+40) 747805233

https://orcid.org/0009-0009-1443-9050

Mihail Cojocari

Mihail Cojocari **(ResearchGate)**

europass

EXPERIENȚA PROFESIONALĂ

Preh Romania Automotive Technologies S.R.L. Iași, România

Inginer proiectant mecanic (Senior Mechanical Design Engineer)
01/01/2025 – În curs
E-Mobility Power Electronics

Universitatea Tehnică „Gheorghe Asachi" din Iași Iași, România

Asistent universitar
17/02/2025 – 30/09/2025
Laborator Mecanică (Facultatea de Automatică și Calculatoare),
Seminar Fizică-Elemente de Mecanică Newtoniană (Facultatea de Inginerie Electrică, Energetică și Informatică Aplicată)

Universitatea Tehnică „Gheorghe Asachi" din Iași Iași, România

Asistent universitar
19/02/2024 – 30/09/2024
Laborator Mecanică (Facultatea de Automatică și Calculatoare)

Preh Romania S.R.L. Iași, România

Inginer proiectant mecanic (Senior Mechanical Design Engineer)
01/11/2023 – 31/12/2024
E-Mobility Power Electronics

Universitatea Tehnică „Gheorghe Asachi" din Iași Iași, România

Asistent universitar
03/10/2022 – 30/09/2023
Seminar Mecanică 1 și Mecanică 2 (Facultatea de Mecanică)

Preh Romania S.R.L. Iași, România

Inginer proiectant mecanic
19/07/2021 – 31/10/2023
E-Mobility Power Electronics

S.C. Continental Automotive Romania S.R.L. Iași, România

Inginer proiectant mecanic
19/11/2018 – 14/07/2021
Autonomous Mobility and Safety
Brake-by-wire

EDUCAȚIE ȘI FORMARE PROFESIONALĂ

01/10/2021 – ÎN CURS Iași, România

Doctorat – Inginerie mecanică Universitatea Tehnică „Gheorghe Asachi" din Iași, Facultatea de Mecanică

Nivel CEC Nivelul 8 CEC

01/10/2018 – 21/07/2020 Iași, România

Diplomă de master Universitatea Tehnică „Gheorghe Asachi" din Iași, Facultatea de Mecanică

Domeniu de studiu Ingineria autovehiculelor, Concepția și managementul proiectării automobilului | **Nivel CEC** Nivelul 7 CEC

01/10/2014 – 03/07/2018 Iași, România

Diplomă de inginer Universitatea Tehnică „Gheorghe Asachi" din Iași, Facultatea de Mecanică

Domeniu de studiu Ingineria autovehiculelor, Autovehicule rutiere | **Nivel CEC** Nivelul 6 CEC

01/09/2010 – 26/06/2014 Chișinău, Moldova

Diplomă de studii medii de specialitate – Tehnician (Transport auto) Colegiul de Transporturi din Chișinău

Domeniu de studiu Transporturi, Exploatarea tehnică a transportului auto | **Nivel CEC** Nivelul 5 CEC

COMPETENȚE LINGVISTICE

LIMBĂ(I) MATERNĂ(E): română

Altă limbă (Alte limbi):

engleză

Comprehensiune orală C1
Exprimare scrisă B2
Citit C1
Conversație B2
Scris B2

rusă

Comprehensiune orală C2
Exprimare scrisă B2
Citit C1
Conversație B2
Scris B2

Niveluri: A1 și A2 Utilizator de bază B1 și B2 Utilizator independent C1 și C2 Utilizator experimentat

COMPETENȚE

CATIA V5 / CATIA V6 | Autocad | AutoDesk Inventor | KissSoft | Cetol | 3DCS | MathCad | Matlab | SAP | 3DEXPERIENCE | Smar Team | Maple | Wolfram Mathematica | LaTeX | Microsoft Office (Excel, Power Point, Word);

PUBLICAȚII

Hyper-State of Multibody Systems and Trident Quaternions

D. Condurache, M. Cojocari, "Hyper-State of Multibody Systems and Trident Quaternions," *Proc. ASME Int. Design Engineering Technical Conf. & Computers and Information in Engineering Conf. (IDETC/CIE 2025)*, Anaheim, CA, USA, Paper No. **DETC2025-165884**, ASME **V005T08A010**, 2025, doi:**10.1115/DETC2025-165884**.

Direct and Inverse Higher-Order Kinematics of Lower-Pair Kinematic Chain

D. Condurache, M. Cojocari, I. Popa, "Direct and Inverse Higher-Order Kinematics of Lower-Pair Kinematic Chain," in *Proc. 12th ECCOMAS Thematic Conf. on Multibody Dynamics (MULTIBODY 2025)*, Innsbruck, Austria, 2025, ISBN:**978-3-200-10587-4**.

Hyper-state of Rigid Body Kinematics and Automatic Differentiation of Trident Nilpotent Algebra.

D. Condurache, M. Cojocari, I. Popa, "Hyper-state of Rigid Body Kinematics and Automatic Differentiation of Trident Nilpotent Algebra," in *New Trends in Medical and Service Robotics (MESROB 2025)*, **Mechanisms and Machine Science**, vol. **186**, Cham, Switzerland: Springer, 2025, pp. **544–553**, doi:**10.1007/978-3-031-96081-9_54**.

About a Classical Gravitational Interaction in a General Non-Inertial Reference Frame

D. Condurache, M. Cojocari, I. Popa, "About a Classical Gravitational Interaction in a General Non-Inertial Reference Frame: Applications on Celestial Mechanics and Astrodynamics," *Symmetry*, vol. **17**, art. no. **368**, 2025, doi:**10.3390/sym17030368**.

Higher-Order Kinematics of Planar Rigid Motion by Euclidean Tensors and Complex Algebra

D. Condurache, M. Cojocari, I. Popa, "Higher-Order Kinematics of Planar Rigid Motion by Euclidean Tensors and Complex Algebra. An Overview," in *New Advances in Mechanisms, Mechanical Transmissions and Robotics (MTM&Robotics 2024)*, **Mechanisms and Machine Science**, vol. **178**, Cham, Switzerland: Springer, 2025, pp. **49–56**, doi:**10.1007/978-3-031-87537-3_6**.

A Closed Form of Higher-Order Cayley Transforms and Generalized Rodrigues Vectors Parameterization

D. Condurache, M. Cojocari, I.A. Ciureanu, "A Closed Form of Higher-Order Cayley Transforms and Generalized Rodrigues Vectors Parameterization of Rigid Motion," *Mathematics*, vol. **13**, art. no. **114**, 2024, doi:**10.3390/math13010114**.

The Extended Wahba's Problem in Dual and Multi-Dual Algebras

D. Condurache and M. Cojocari, "The Extended Wahba's Problem in Dual and Multi-Dual Algebras," in *Proc. 10th Int. Conf. on Control, Decision and Information Technologies (CoDIT 2024)*, IEEE, 2024, doi:**10.1109/CoDIT62066.2024.10708225**.

Automatic Differentiation of Serial Manipulator Jacobians Using Multidual Algebra

D. Condurache, M. Cojocari, I. Birlescu, B. Gherman, "Automatic Differentiation of Serial Manipulator Jacobians Using Multidual Algebra," in *Advances in Service and Industrial Robotics*, **Mechanisms and Machine Science**, vol. **157**, Cham, Switzerland: Springer, 2024, pp. **379–388**, doi:**10.1007/978-3-031-59257-7_38**.

Multidual Quaternions and Higher-Order Analysis of Lower-Pair Kinematic Chain

D. Condurache, M. Cojocari, I. Popa, "Multidual Quaternions and Higher-Order Analysis of Lower-Pair Kinematic Chain," in *Proc. 11th ECCOMAS Thematic Conf. on Multibody Dynamics (MULTIBODY 2023)*, Lisbon, Portugal, 2023, ISBN:**978-989-53599-2-9**.

Hypercomplex Quaternions and Higher-Order Analysis of Spatial Kinematic Chains

D. Condurache, M. Cojocari, I. Popa, "Hypercomplex Quaternions and Higher-Order Analysis of Spatial Kinematic Chains," *Buletinul Institutului Politehnic din Iași, Secția Matematică, Mecanică Teoretică, Fizică*, pp. **21–34**, 2023, doi:**10.2478/bipmf-2023-0002**.

High-Order Derivatives of Serial Manipulator Jacobians Using Multidual Differentiation Transform

M. Cojocari, D. Condurache, "High-Order Derivatives of Serial Manipulator Jacobians Using Multidual Differentiation Transform," *Buletinul Institutului Politehnic din Iași, Secția Matematică, Mecanică Teoretică, Fizică*, pp. **7–20**, 2023, doi:**10.2478/bipmf-2023-0001**.

Hypercomplex Dual Lie Nilpotent Algebras and Higher-Order Kinematics of Rigid Body

D. Condurache, M. Cojocari, I. Popa, "Hypercomplex Dual Lie Nilpotent Algebras and Higher-Order Kinematics of Rigid Body," in *Proceedings of SYROM 2022 & ROBOTICS 2022 (IISSMM 2022)*, **Mechanisms and Machine Science**, vol. **127**, Cham, Switzerland: Springer, 2023, pp. **89–96**, doi:**10.1007/978-3-031-25655-4_10**.

CONFERINȚE ȘI SEMINARE

17/08/2025 – 20/08/2025 Anaheim, California, USA

ASME 2025 International Design Engineering Technical Conferences & Computers and Information in Engineering Conference (IDETC/CIE 2025)

Condurache, D.; Cojocari, M. *Hyper-State of Multibody Systems and Trident Quaternions.* **ASME 2025 International Design Engineering Technical Conferences & Computers and Information in Engineering Conference (IDETC/CIE 2025)**, Hilton Anaheim, Anaheim, California, USA, **August 17–20, 2025**.

13/07/2025 – 18/07/2025 Innsbruck, Austria

12th ECCOMAS Thematic Conference on Multibody Dynamics (MULTIBODY 2025)

Condurache, D.; Cojocari, M.; Popa, I. *Direct and Inverse Higher-Order Kinematics of Lower-Pair Kinematic Chain.* **MULTIBODY 2025 – 12th ECCOMAS Thematic Conference on Multibody Dynamics**, University of Innsbruck (Technical Campus), **Innsbruck, Austria**, **July 13–18, 2025**.

02/07/2025 – 04/07/2025 Poitiers, France

9th IFToMM International Workshop on New Trends in Medical and Service Robotics (MESROB 2025 / MeSRob'25)

Condurache, D.; Cojocari, M.; Popa, I. *Hyper-state of Rigid Body Kinematics and Automatic Differentiation of Trident Nilpotent Algebra.* **9th IFToMM International Workshop on New Trends in Medical and Service Robotics (MESROB 2025 / MeSRob'25)**, **Poitiers, France**, **July 2–4, 2025**.

14/11/2024 – 16/11/2024 Iași, Romania

MTM & Robotics 2024 – Joint International Conference of the XIV International Conference on Mechanisms and Mechanical Transmissions (MTM) and the XXVI International Conference on Robotics (ROBOTICS)

Condurache, D.; Cojocari, M.; Popa, I. *Higher-Order Kinematics of Planar Rigid Motion by Euclidean Tensors and Complex Algebra. An Overview.* **MTM & Robotics 2024 – Joint International Conference of the XIV International Conference on Mechanisms and Mechanical Transmissions (MTM) and the XXVI International Conference on Robotics (ROBOTICS)**, **Iași, Romania**, **November 14–16, 2024**.

01/07/2024 – 04/07/2024 Valletta, Malta

10th International Conference on Control, Decision and Information Technologies (Codit 2024)

Condurache, D.; Cojocari, M. *The Extended Wahba's Problem in Dual and Multi-Dual Algebras.* **10th International Conference on Control, Decision and Information Technologies (CoDIT 2024)**, **Valletta, Malta**, **July 1–4, 2024**.

05/06/2024 – 07/06/2024 Cluj-Napoca, Romania

33rd International Conference on Robotics in Alpe-Adria-Danube Region (RAAD 2024)

Condurache, D.; Cojocari, M.; Birlescu, I.; Gherman, B. *Automatic Differentiation of Serial Manipulator Jacobians Using Multidual Algebra.* **33rd International Conference on Robotics in Alpe-Adria-Danube Region (RAAD 2024)**, **Cluj-Napoca, Romania**, **June 5–7, 2024**.

24/07/2023 – 28/07/2023 Lisboa, Portugal, 2023

11th ECCOMAS Thematic Conference on Multibody Dynamics (MULTIBODY 2023)

Condurache, D.; Cojocari, M.; Popa, I. *Multidual Quaternions and Higher-Order Analysis of Lower-Pair Kinematic Chain.* **MULTIBODY 2023 – 11th ECCOMAS Thematic Conference on Multibody Dynamics**, Instituto Superior Técnico, University of Lisbon, **Lisbon, Portugal**, **24–28 July 2023**.

18/06/2023 – 24/06/2023 TU Delft (Delft University of Technology), Delft, The Netherlands

9th Int. Summer School on Screw-Theory based Methods in Robotics

Teachers: Andreas Müller; Jon Selig; Xianwen Kong; Roy Featherstone; Marco Carricato; Dimiter Zlatanov; Matteo Zoppi.
Organization: Freek Broeren; Ad Huisjes; Werner Van de Sande; Volkert van der Wijk.
Topics: Screw theory (twists/wrenches), dual spaces & reciprocity; constraint/mobility analysis and type synthesis; velocity & singularity analysis; compliance/stiffness modeling; rigid-body dynamics (6D) and Lie groups/algebras for rigid-body motion.

17/05/2023 – 19/05/2023 Iași, Romania

6th International Conference of The Doctoral School (CSD2023)

Cojocari, M.; Condurache, D. *High-Order Derivatives of Serial Manipulator Jacobians Using Multidual Differentiation Transform.* **6th International Conference of the Doctoral School (CSD2023)**, Gheorghe Asachi Technical University of Iași, Iași, Romania, **May 17–19, 2023**.