Adrian Toader

Cetățenie: română 📞 **Număr de telefon:** ✉**E-mail:**

📍**Acasă:** **EXPERIENȚA PROFESIONALĂ**

Cercercetator aeronave

Institutul National de Cercetare Dezvoltare Aerospatiala "Elie Carafoli" [01/08/2006 – În curs]

Localitatea: Bucuresti | **Țara:** România

Proiectarea, implementarea și testarea algoritmilor GNC (Ghidare Navigație și Control) pentru vehicule cu decolare și aterizare verticală. Dezvoltarea de algoritmi de optimizare on-line a traiectoriei pentru vehicule cu decolare și aterizare verticală, implementarea legilor de control pentru sisteme mecatronice spațiale (sisteme primare și secundare de acționare a suprafețelor de control al zborului), controlul vibrațiilor și monitorizarea integrității structurilor mecanice folosind actuatori piezoelectrici, proiectarea sistemelor de control al zborului folosind metode de sinteză LQR/LQG, H-infinity sau tehnici de sinteză modernă de tip H infinit structurat. Simularea avioanelor fără pilot, proiectarea de arhitecturi de avionică, achiziții de date folosind software și hardware dedicat. Determinarea performanțelor de zbor ale avioanelor, simularea numerică a modelor fizice pentru sisteme de acționare.

EDUCAȚIE ȘI FORMARE PROFESIONALĂ

Inginer Diplomat

Universitatea "Politehnica" [2000 – 2005]

Localitatea: Bucuresti | **Țara:** România | **Domeniul (domeniile) de studiu:** Inginerie, activitate manufacturieră și construcții

Masterat

Universitatea "Politehnica" [2005 – 2007]

Localitatea: Bucuresti | **Țara:** România | **Domeniul (domeniile) de studiu:** Inginerie aerospatiala, avionica, navigatie aerospatiala.

Doctorat

Universitatea din Craiova, Facultatea de Automatica Calculataorea si Electronica [2007 – 2013]

Localitatea: Craiova | **Țara:** România | **Domeniul (domeniile) de studiu:** Ingineria sistemelor, inginerie aerospatiala, analiza stabilitatii sistemului pilot aeronava, modelarea matematica a pilotului uman.

COMPETENȚE LINGVISTICE

Limbă(i) maternă(e): romana

Altă limbă (Alte limbi):

Engleza

COMPREHENSIUNE ORALĂ C1 **CITIT** C1 **SCRIS** C1

EXPRIMARE SCRISĂ C1 **CONVERSAȚIE** C1

franceză

COMPREHENSIUNE ORALĂ B2 **CITIT** B2 **SCRIS** B1

EXPRIMARE SCRISĂ B2 **CONVERSAȚIE** B2

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

COMPETENȚE DIGITALE

Matlab/Simulink, Auto coding (Simulink Coder) / HIL (rapid prototyping) on real-time target machine (Speedgoat) / C-limbaj de programare / Cunoștințe de bază ce țin de embedded și microcontrollere / National Instruments - LabView / Fortran / Mathcad (intermediar) / cunostinte de baza în CATIA / Microsoft Office / Linux OS

PROIECTE

SMART AM 7032 Memebru in echipa de cercetare

PNCDI DESCAS 71028 Memebru in echipa de cercetare

PNCDI SIMCA 81031 Memebru in echipa de cercetare

PNCDI SAHA 81036 Memebru in echipa de cercetare

UEFISCSU Idei 1391 Memebru in echipa de cercetare

Nucleu PN-09-17-03-04 Responsabil proiect

Nucleu PN-19 01-07-01 Responsabi proiect

CESAR-FP6 Memebru in echipa de cercetare

Clean Sky Robus AFC Memebru in echipa de cercetare

AFLoNext Responsabil pachet de lucru

USACDF Coordonator proiect

Future Sky Project P3 Runway Excursions Memebru in echipa de cercetare

Demonstrator for Technilogies Validation Coordonator proiect

PUBLICAȚII

Nonlinear control synthesis for hydrostatic type flight controls electrohydraulic actuators, Ursu, I., G. Tecuceanu, F. Ursu, A. Toader (2007), Proceedings of the International Conference in Aerospace Actuation Systems and Components, Toulouse, June 13-15, pp. 189-194.

Backstepping control synthesis for hydrostatic type flight controls electrohydraulic actuators, Toader, A., I. Ursu, The International Symposium on System Theory, Automation, Robotics, Computers, Informatics, Electronics and Instrumentation, 18-20 October 2007 Craiova, Romania.

Backstepping control synthesis for hydrostatic type flight controls electrohydraulic actuators, Toader, A., I. Ursu, Annals of the University of Craiova, Series Automation, Computers, Electronics and Mechatronics, 4 (31), 1, 122-127.

Robust aeroservoelastic control of high-aspect ratio wings, Toader, A., L. Iorga, I. Ursu, ICNPAA 2008: Mathematical Problems in Engineering, Aerospace and Sciences, June 25-27, 2008, Genoa, Italy.

Control of uncertain systems by feedback linearization with neural networks augmentation, Ursu, I., A. Toader, G. Tecuceanu. Part I. Controller design, INCAS Bulletin, 1, 1, 84-89.

Neuro-fuzzy control synthesis for hydrostatic type servoactuators, Ursu, I., G. Tecuceanu, A. Toader, C. Calinoiu, F. Ursu, V. Berar. Experimental results, INCAS Bulletin, 1, 2, 136-150, 2009.

A unitary approach on adaptive control synthesis, Ursu, I. A. Toader, Mathematical Methods, Computational Techniques and Intelligent Systems, pp. 71-78 (12th WSEAS Int. Conf. on Mathematical Methods, Computational Techniques and Intelligent Systems MAMECTIS '10, Kantaoui, Sousse, Tunisia, May 3-6, 2010)

From limits of human pilot mathematical modeling to actuator rate limits. A PIO II tendencies case study, A. Toader, I. Ursu at Mathematical Methods in Engineering International Symposium, Instituto Politecnico de Coimbra, Portugal, 21-24 October, 2010, CD published.

Adaptive control of uncertain systems – A new unitary approach, Ursu, I., A. Toader, G. Tecuceanu, Proceedings of the Romanian Academy, Series A, Mathematics, Physics, Technical Sciences, Information Science, 11, 3, 236-244, (ISI indexed), 2010.

Simultaneous active vibration control and health monitoring of structures. Experimental results, Ursu, I., G. Tecuceanu, A. Toader, V. Berar , INCAS Bulletin, 2, 2, 114-127, 2010.

Control of uncertain systems by feedback linearization with neural networks augmentation. Part II. Controller validation by numerical simulation, Ursu, I., A. Toader, INCAS Bulletin, 2, 3, 2010.

Strain Gauge Force Transducer and Virtual Instrumentation used in a Measurement System for Retention Forces of Palatal Plates or Removable Dentures D.M. Ștefănescu, A.-T. Farcașiu, A. Toader. IEEE Sensors Journal, Vol. 12, No. 10, pp. 2968-2973, October 2012.

New stabilization and tracking control laws for electrohydraulic servomechanisms, I. Ursu, A. Toader, S. Balea, A. Halanay European Journal of Control, no 1, January 2013, pp 65-80, ISSN 0947-3580 Impact Factor (ISI): 1.2 2013.

Towards a PIO II criterion: Improving the pilot, modeling Toader, A., I. Ursu, Advances in Intelligent Systems and Computing Volume 187, 2013, pp 45-57, Springer-Verlag Berlin Heidelberg, ISSN: 2194-5357 (Proceedings of the 2011 International Conference on Communication, Electronics and Automation Engineering, 2013.

Intelligent control of HVAC systems. Part I: Modeling and synthesis, I. Ursu, Ilinca Nastase, S. Caluianu, Andreea Iftene, A. Toader, INCAS Bulletin, vol. 5, no. 1, pp 103-118, 2013.

Intelligent control of HVAC systems. Part II: perceptron performance analysis, I. Ursu, Ilinca Nastase, Sorin Caluianu, Andreea Iftene, George Tecuceanu, Adrian Toader, INCAS BULLETIN, Volume 5, Issue 3, pp. 127 – 135 ISSN 2066 – 8201, 2013.

The electromechanical impedance method for structural health monitoring of thin circular plates, C. Rugina, A. Toader, V. Giurgiutiu, I. Ursu, Proceedings of the Romanian Academy, Series A, Mathematics, Physics, Technical Sciences, Information Sciences, vol. 15, no. 3, pp. 272–282, 2014.

Pilot modeling based on time delay synthesis, A. Toader, I. Ursu, Proceedings of the Institution of Mechanical Engineers - Part G: Journal of Aerospace Engineering (Proc IME G J Aero Eng), vol. 228, no. 5, pp. 740-754, April 2014.

Mathemathical modeling of a V-stack piezoelectric aileron actuation, Ioan URSU, Dragos Daniel ION GUTA, Daniela ENCIU, Adrian TOADER, Mircea DAN, Cristiana DONCIU, Vasile TURCAN, vol. 8, no 4, pp. 141-155, 2016.

New Results Concerning SHM Technology Qualification for Transfer on Space Vehicles, D. Enciu, I. Ursu, A. Toader, Structural Control and Health Monitoring, vol. 24, issue 10, e1992.

Ion DIMA, Adrian TOADER, Dragos Daniel ION GUTA, Mircea BOCIOAGA, A computational methodology for a micro launcher engine test bench using a combined linear static and dynamic in frequency response analysis, pp. 25-35, INCAS BULLETIN, vol 9, no. 2, 2017

Testing Platform for the Validation of Vertical Take-off and Vertical Landing (VTVL) Control Algorithms, A. Toader and G. Tecuceanu, International Journal of Modeling and Optimization vol. 8, no. 4, pp. 236-240, 2018.

System Identification and Testing for a VTVL vehicle, Ana-Maria Neculaescu, Alexandru Marin, Adrian Toader, Alexandru-Gabriel Persinaru, Alexandru-Mihai Cismilianu, Mihai Tudose, Camelia-Elena Munteanu, Ionel Popescu, Hans Strauch and Stephane Dussy, 8TH EUROPEAN CONFERENCE FOR AERONAUTICS AND AEROSPACE SCIENCES (EUCASS) , 2019.

New Advances in Space SHM Project, Adrian TOADER, Ioan URSU, Daniela ENCIU, Incas Bulletin, vol. 7, issue 1, 2015

Active robust control for wing vibrations attenuation Ioan URSU, Adrian TOADER, Daniela ENCIU, George TECUCEANU, INCAS BULLETIN 2022.

[2022]
Lyapunov-Malkin type approach of equilibrium stability in a critical case applied to a switched model of a servomechanism with state delay, D. Enciu, A. Halanay, A. Toader, I. Ursu

Communications in Nonlinear Science and Numerical Simulation, vol. 121, pp. 107188

[2023]
Input-to-state stability of a time-invariant system with control delay and additive disturbances, Ursu, A. Toader, G. Tecuceanu, D. Enciu, Proceedings in Applied Mathematics and Mechanics (PAMM), e202300152

CONFERINȚE ȘI SEMINARE

[18/09/2014 – 19/09/2014] Bucharest, Romania
Damage identification and damage metrics in SHM, Daniela ENCIU, Mihai TUDOSE, Bogdan NECULAESCU, Adrian TOADER, Ioan URSU, Proceedings of the International Conference of Aerospace Sciences "AEROSPATIAL 2014", pp. 349-364,

Link: https://www.incas.ro/images/stories/aerospatial_2014/Vol_PROCEEDINGS__Aerospatial_2014_internet.pdf

[18/09/2014 – 19/09/2014] Bucharest, Romania
Finite element analysis of the electromechanical impedance method on aluminum plates in SHM, Cristian RUGINA, Victor GIURGIUTIU, Ioan URSU, Adrian TOADER, Proceedings of the International Conference of Aerospace Sciences, pp. 343-348

Link: https://www.incas.ro/images/stories/aerospatial_2014/Vol_PROCEEDINGS__Aerospatial_2014_internet.pdf

[06/05/2015 – 07/05/2015] Bucharest, Romania
A Thorough Analysis of Damages in Space SHM, Daniela ENCIU, Adrian TOADER, Mihai TUDOSE, Ioan URSU, 3rd International Workshop on Numerical Modelling in Aerospace Sciences, NMAS 2015

[2016] Bucharest, Romania
Numerical Simulations of steady-state and dynamic analysis of a single spool turbojet engine, Irina-Carmen ANDREI, Adrian TOADER, Ana-Maria NECULAESCU, 4th International Workshop on Numerical Modelling in Aerospace Sciences.

[30/05/2023 – 02/06/2023] Dresden, Germany
Input-to-state stability of a time-invariant system with control delay and additive disturbances, I. Ursu, A. Toader, G. Tecuceanu, D. Enciu,GAMM 2023 – 93rd Gesellschaft für angewandte Mathematik und Mechanik, Conference

[23/01/2023 – 27/01/2023] Harbor, National Harbor, MD & Online
Online convex optimization for a reusable vertical take-off and vertical landing demonstrator, A.M. Neculăescu, T.P. Afilipoae, C. B. Briceag, A. Toader 2023 AIAA Science and Technology Forum and Exposition (AIAA SciTech Forum)

Link: https://doi.org/10.2514/6.2023-1014

[13/11/2023 – 15/11/2023] Rome, Italy
The stability of a linear time-invariant system with control delay. Application to the stability of the aircraft control chain in conditions of atmospheric turbulence, A. Toader, D. Enciu, I. Ursu, 20th International Conference ICINCO 2023

BREVETE DE INVENTIE

SERVOACTUATOR ELECTROHIDROSTATIC PENTRU AVIATIE, CU LEGE NECONVENTIONALA DE REGLARE IN POZITIE.

autori: dr. mat. Ioan Ursu, ing. M. Arghir, ing. A. Toader, ing. G. Tecuceanu, ing. C.Calinoiu,
inregistrat la OSIM cu numarul A/00751 din 28 07 2011.

CERERI BREVET DE INVENTIE

PROCEDEU COMPLEX DE CONTROL ACTIV AL VIBRAȚIILOR ARIPII DE AVION ÎN PREZENȚA TURBULENȚEI, PE BAZA UNEI METODOLOGII EMERGENTE DE IDENTIFICARE A MODELULUI MATEMATIC

autori: I. Ursu, G. Tecuceanu, Daniela Enciu, A. Toader, M. Arghir, D. D. Ion-Guta, D. Pepelea, C. Stoica, D. Andrei,
numarul de inregistrare la OSIM: A 2021 00378/30 06 2021