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Categoria B

română

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Competențe

Design experiment

Analiza statistica

Proprietate int.

Management echipe

Scriere articole

Evaluare teze

Management granturi

Mentorat cercetare

Expert in proprietate industriala

Limbi

franceza

engleza

IT

Web of Science

ResearchGate

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AUREL FRATU

Dr. Habil. Ing – conducator de doctorat

Experiență profesională

Prof.univ. Dr. ing./Prof.univ. Dr. Habil. ing. (din anul 2015) — 2000 Curent
Univ.Transilvaniadin Brasov, Brasov

Conf.dr.ing. — 1994 2000
Universitatea din Brasov, Brasov

Sef.lucr.ing. — 1984 1994
Universitatea din Brasov, Brasov

Asist.univ.ing — 1978 1984
Universitatea din Brasov, Brasov

Inginer — 1974 1978
I.P.R.S-Baneasa, Bucuresti

Educație

Atestat de abilitare — 2015 2015
Univ. Transilvania-Brasov

- teza de abilitare:
  SERVOSISTEME PENTRU CONTROLUL MISCARII IN TEHNICA ROBOTILOR
  domeniul: Inginerie electrica, - anul susţinerii: 2015

Diploma de doctor — 1989 1994
Univ. Transilvania-Brasov

Certificat de absolvire — 1986 1987
Univ. Transilvania-Brasov

- curs postuniversitar de proprietate industriala

Diploma inginer — 1969 1974
Univ. Transilvania-Brasov

- studii universitare

Lucrări elaborate şi / sau publicate

Monografii	7
Lucrări publicate în reviste de specialitate	68

Lucrări publicate -selectie

1• Fratu, A., Fratu M., Brethe, J.F., Cachard, O.: Modélisation et animation de systèmes robotises dans l'environnement Delphi, Colloque francophone ''Evaluation des Performances et Maîtrise des Risques Technologiques pour les systèmes industriels et énergétiques", 28 – 29 mai 2009, p. 105-112, Université du Havre – France.

2• Dequidt A., Vermeiren L., Fratu A.: Design of flexible drive systems for feed forward control: a mechatronic approach. 18th International Workshop on Robotics in Alpe-Adria-Danube Region, ISBN 978-606-521-315-9, Brasov, Romania, mai 25-27, 2009.

3• FRATU A., SISAK F., VERMEIREN L., DEQUIDT A.: Modelling and robot simulation in Delphi environment. 18th International Workshop on Robotics in Alpe-Adria-Danube Region, ISBN 978 -606-521-315-9, Brasov, Romania, mai 25-27, 2009.

4• FRATU, A., DEQUIDT, A., VERMEIREN, L.: Haptic Devices for Desktop Virtual Prototyping Applications . The 3rd International Conference"Computational Mechanics and Virtual Engineering" - COMEC 2009, p. 248-253.

5• FRATU, A., VERMEIREN, L., BRETHE, J-F. : Study of the assembly motion for a virtual assembly system – International Conference on Economic Engineering and Manufacturing Systems (ICEEMS) , 26-27 November 2009, Brasov, Romania

6• Fratu, A., Vermeiren, L., Dequidt, A.,: Using the Redundant Inverse Kinematics System for Collision Avoidance. The 3rd International Symposium on Electrical and Electronics Engineering – ISEEE-2010, 16-18 sept. Galati, Romania,Proceedings ISBN 978-1-4244-8407-2, pp.88-93.

7• Fratu, A., Dequit, A., Vermeiren, L.: Virtual Scissors for Haptic Portable Torque-Feedback Device, Proceedings of the Remote Engineering and Virtual instrumentation Conference - REV 2011, pp.10-15.

8• Dang, Q. V., Dequidt, A., Vermeiren, L., Fratu, A., Dambrine, M. :Stability analysis of haptic interface: effects of dynamic parameters. Proceedings ofthe Remote Engineering and Virtual instrumentation Conference - REV 2011, pp.137-143.

9• Fratu, A., Ilea, D.: An Analysis of the Reciprocal Robots Collision Avoidance Proceeding of the 13th International Conference on Optimization of Electrical and Electronic Equipment (OPTIM), Digital Object Identifier:10.1109/OPTIM.2012.6231995, IEEE CONF. PUBLICATIONS, pp.1511-1517.

10• Fratu, A., Becar, J.P.: Robots Collision Avoidance Using Learning through Imitation, The 4 th International Symposium on Electrical and Electronics Engineering ISEEE-2013, 978-1-4799-2442-4/13/$31.00 ©2013 IEEE, Galati, Romania

11• Fratu, A,, Dambrine, M,: An analysis of the robot collision avoidance using the programming through imitation, The International Conference on Manufacturing Systems - ICMaS 2013, 14-15 November, 2013, Bucharest, Romania. In: Proceedings in Manufacturing Systems, ISSN 2067-9238, Volume 8, Issue 2, 2013, pp.111-116.

12• Fratu, A., Riera, B., and Vrabie, V.: Predictive strategy for robot behavioral control, The International Conference on Manufacturing Systems - ICMaS 2014, 14-15 November, 2013, Bucharest, Romania

13• J.P. Becar, M. Fratu, A. Fratu, J.C. Canonne EXAMPLE BASED LEARNING FOR VIRTUAL PROTOTYPING ENGINEERING, EDULEARN14 Proceedings OF THE 6th International Conference on Education and New Learning Technologies, ISBN: 978-84-617-0557-3, ISSN: 2340-1117, 7-9 July, 2014, Barcelona, Spain, pp. 6027-6034

14• J.P. Becar, J.C. Canonne, E. Cartignies, M. Fratu, A. Fratu, M. Iwanowski,W. Czajewski THREE EXPERIMENTS OF LEARNING BY EXAMPLES, INTED2015 Proceedings 9th International Technology, Education and Development Conference, ISBN: 978-84-606-5763-7, ISSN: 2340-1079, 2-4 March, 2015, Madrid, Spain, pp. 1293-1302

15• Jean-Charles Canonne, Jean-Paul Bécar, Aurel Fratu, Mariana Fratu: ARE LOCAL TEACHERS REQUIRED WITHIN MOOCS SESSIONS? Proceedings of INTED 2016 Conference 7th-9th, ISBN: 978-84-608-5617-7, March 2016, Valencia, Spain, pp. 3387- 3394.

16• Alexandru Popov, Aurel Fratu et al.: Monitoring the Cost of Energy for Powering the Railway Electric Traction System, 2019 8th International Conference on Modern Power Systems (MPS)

17• R.A. Moise, A. Fratu, Artificial Intelligence in Power Distribution Systems, International Conference on Interactive Mobile Communication, Technologies and Learning - IMCL, 2023

18• R.A. Moise, A. Fratu, Voltage Stability Analysis in Power Distribution Networks for Connecting Renewable Energy Sources, AI SMART Conference, 2025

19• R.F. BOANDA, A. FRATU: Automated Code Generation for PLC Programming using Artificial Intelligence, Proceedings of the 23rd International Conference on Smart Technologies and Education (STE2026)
20• R.F. BOANDA, A. FRATU:: Structured Text and IoT convergence for smart manufacturing, Proceedings in Manufacturing Systems, Volume 21, Issue 1, 2026. ISSN 2067-9238
21• R.F. BOANDA, A. FRATU: PLC integration in industrial control assisted by Artificial Intelligence, AI-SMART 2026 Conference Proceedings.

Granturi şi contracte de cercetare ştiinţifică

Granturi şi contracte de cercetare ştiinţifică 12

Brevete de invenţie obtinute in intreaga cariera

Brevete de invenţie obtinute in intreaga cariera 22

Provided by Romanian Office State for Inventions and Trade Marks (OSIM) and European Patent Office Indexed (partially) by Derwent World Patents Index (DWPI)

1• Fratu, A.: CONTROL METHOD FOR THE ELECTRIC INVERTERS AND INVERTER ACCORDING TO THE METHOD. RO112454 (B)
2• Fratu, A. et al: ELECTROMAGNETIC LINEAR SYNCHRONOUS OSCILLOMOTOR. RO98403 (B1)
3• Fratu, A. et al: INSTALLATION FOR DIRECTING GALVANIZING MANIPULATORS. RO96125 (B1)
4• Fratu, A. et al: INSTALLATION FOR MODIFYING SPEED OF AN ELECTRIC SHAFT ACTUATED BY ASYNCHRONOUS MACHINES. RO92205 (B1)
5• Fratu, A. et al: INSTALLATION FOR MODIFYING THE DISPLACEMENT SPEED OF ROLLING GIRDERS BY USING LINEAR ASYNCHRONOUS MACHINES. RO92027 (A2)
6• Fratu, A. et al: METHODE ET INSTALLATION POUR LA MODIFICATION DE LA VITESSE DES MACHINES ASYNCHRONES TRIPHASES PLANES. RO79433 (A2)
7• Fratu, A.: OIL DIPPER ROD WITH ELECTRIC SIGNALLING. RO97147 (B1)
8• Fratu, A.: METHOD AND SYSTEM FOR ADJUSTING SPEED OF DIRECT CURRENT MOTORS. RO97567 (B1)
9• Fratu, A. et al: METHOD AND SYSTEM FOR ADJUSTING SPEED OF THE ELECTRIC INDUCTION MOTORS
10• Fratu, A.: DEVICE FOR AUTOMATICALLY STOPPING THE ELECTRIC INDUCTION MOTORS UPON NO-LOAD RUNNING. RO96926 (A2)
11• Fratu, A.: ONE-WAY COUPLING. RO96273 (B1)
12• Fratu, A. et al: SYSTEME ELECTRIQUE DE SAISIR DU NIVEAU D'HUILE. RO66668 (A2)
13• Fratu, A. et al: LEVEL INDICATOR, WITH ELECTRIC RESISTANCE. RO108087 (B1)
14• Fratu, A. et al: MACHINE FOR SMOOTHING WOODEN ELEMENTS WITH PROFILED SURFACES. RO93403 (A2)
15• Fratu, A. et al: METHODE ET INSTALLATION POUR LE FONCTIONNEMENT EN REGIME PAS-A-PAS AVEC PAS ANGULAIRE CONSTANT DU MOTEUR ASYNCHRONE TRIPHASE. RO90590 (A2)
16• Fratu, A. et al: METHODE DISPOSITIF POUR L'OBTENTION DES FREQUENCES D'OSCILLATION DIMINUEES AUX OSCILLATEURS ELECTRIQUES SYNCHRONES LINEAIRES. RO77841 (A2)
17• Fratu, A. et al: RELAIS DE PRESSION. RO76926 (A2)
18• Fratu, A. et al: MACHINE PNEUMATIQUE A VISSER ET A DEVISSER. RO76530 (A2)
19• Fratu, A. et al: ALTERNATIVE PNEUMATIC MOTOR. RO67876
20• Fratu, A., et al: METHOD FOR DETECTING PETROLEUM FLUID LEAKS FROM CRACKED UNDERGROUND METAL PIPES. RO125179 (A2).
21• Fratu, A.: METHOD AND INSTALLATION FOR JOINTS TRAJECTORY PLANNING OF A PHYSICAL ROBOT ARM, Patent Number(s): RO – 129121(A0).

22• Nicolaide, A., Fratu, A. METHOD AND INSTALLATION TO EXPERIMENTAL DETERMINATION OF THE LOSSES BY EDDY CURRENTS, Patent Number(s): RO129909 (A0)

Membru în asociaţii profesionale şi ştiinţifice

IPIMEA, SIR, ACER, SAR, SRR

Alte competenţe (coordonare specializări)

Coordonare masterat cu predare in limba franceza: Electrotechnique pour Transport Terrestre.

Membru in Consiliul stiintific al Departamentului de Proprietate Intelectuala – la nivelul Universitatii TRANSILVANIA din Brasov

Membru in Comitetul de management al Programului ERASMUS, activitatea specifica : Coordonare programe SOCRATES / ERASMUS / ERASMUS PLUS – la nivelul Facultatii IESC si al Departamentului ATI

Recenzor conferinte, jurnale, buletine stiintifice, internationale / nationale: Jurnal RECENT, Conferinta ICERI, Conferinta INTED, Conferinta EDULERN, Conferinta ICMaS

Alte menţiuni

Participari la activitati didactice in universităţi din ţară şi străinătate

Misiuni TS-Erasmus la universitati din Franta, Belgia, Italia, Ungaria;

Profesor invitat in anii 2006, 2008, 2009, 2010, 2014 si 2015 la

Universitatea din Valenciennes, FRANTA

Organizare de evenimente ştiinţifice (conferinţe, workshop-uri, etc.)

Director, Directia Brasov a ''Societatii Inventatorilor din Romania'';

Nominalizare in volumul

DICTIONAR AL INVENTATORILOR ROMÂNI CONTEMPORANI, 2012,

editat sub egida Academiei de Stiinţe Tehnice a României

Premii şi distincţii

Brevet '' INVENTATOR DE ELITA '' acordat de Comisia de Inventica a Academiei de Stiinte Tehnice din Romania

Experienţa managerială

Fondator si Actionar
la S.C. Centrul de Tehnologii, Inventica si Business S.A.