

IULIAN IOAN IORDACHITA

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EDUCATION

01/92-11/96: **Doctor Engineer Diploma** (equivalent to **Ph.D.**) in Mechanical Engineering, University of Craiova, Craiova, Romania

Dissertation: *Contributions to the study of biologically-inspired mechanisms for dragging locomotion.*

Advisor: Professor Iulian Popescu

09/88-06/89: **Diploma of Advanced Studies** (equivalent to **MS**), in Industrial Robots, University of Craiova, Craiova, Romania,

Thesis: *Mechanical Hands for Industrial Robots*

Advisor: Professor Mihai Buculei

09/79–06/84: **Mechanical Engineer Diploma** (equivalent to **BS & MS**), Specialization - Technology of Mechanical Engineering, University of Craiova, Craiova, Romania

Thesis: *Industrial Robot actuated with Pneumatic Motors*

Advisor: Professor Mihai Buculei

09/74-05/78: **Diploma of Baccalaureate**, “Nicolae Titulescu” High School, Craiova, Romania

Post-doctoral Training

03/00-08/00: **Post-Doctoral Fellow** in Medical Robotics, Brady Urological Institute, School of Medicine, Johns Hopkins University, Baltimore, MD, USA;

PROFESSIONAL EXPERIENCE

07/07 – pres: **Assoc. Research Scientist**, Center for Computer-Integrated Surgical Systems and Technology, Johns Hopkins University, Baltimore, MD, USA - research activity

04/04 – 06/07: **Research Engineer**, Center for Computer-Integrated Surgical Systems and Technology, Johns Hopkins University, Baltimore, MD, USA - research activity

10/03-03/04: **Associate Professor**, School of Mechanical Engineering, University of Craiova, Romania – teaching and research activity

10/02-09/03: **Visiting Associate Professor**, Graduate School of Frontier Sciences, The University of Tokyo, JAPAN - research activity

10/98-09/02: **Associate Professor**, School of Mechanical Engineering, University of Craiova, Romania – teaching and research activity

10/93-09/98: **Senior Lecturer**, School of Mechanical Engineering, University of Craiova, Romania – teaching and research activity

09/90-09/93: **Assistant Professor**, School of Mechanical Engineering, University of Craiova, Romania – teaching and research activity

10/86-08/90: **Research-Design Engineer**, Research and Technology Institute for Electric Motors, Transformers and Electric Apparatus, Craiova, Romania – design and research activity

09/84-09/86: **Mechanical Engineer**, S.C. “Electroputere” SA, Craiova, Romania, Tools Factory – manufacturing process design activity

TEACHING EXPERIENCE

10.98-03.04: Associate Professor, School of Mechanical Engineering, University of Craiova, Romania:

- **Industrial Robots** – Course, Laboratory experiments;
- **Mechanical Structures for Robots and Manipulators** – Course, Laboratory experiments, Project, Seminary;
- **Machine Components Design** - Course, Laboratory experiments, Project;
- **Special Mechanisms and Mechanical Transmissions for Robots** - Course, Laboratory experiments, Project, Seminary;
- **Machine Design Optimization** - Course, Project, Seminary (2002-2004, new course).

10/93-09/98: Senior Lecturer, School of Mechanical Engineering, University of Craiova, Romania:

- **Industrial Robots** – Course, Laboratory experiments (new course);
- **Mechanical Structures for Robots and Manipulators** – Course, Laboratory experiments, Project, Seminary (new course);
- **Machine Components Design** - Course, Laboratory experiments, Project;
- **Mechanisms and Machines Theory** - Course, Laboratory experiments, Project, Seminary;

09/90-09/93: Assistant Professor, School of Mechanical Engineering, University of Craiova, Romania:

- **Machine Component Design** – Laboratory experiments, Project, Seminary;
- **Mechanisms and Machines Theory** – Laboratory experiments, Project, Seminary;

RESEARCH INTERESTS

Medical Robotics

Mechanisms and Mechanical Transmissions for Robots

Biologically-inspired Mechanisms

Machine Design and Manufacturing Technology

SPECIAL SKILLS

Experimental research orientation;

Design and manufacturing of advanced, computer controlled mechanical systems;

Software packages: Pro-Engineer, Autodesk Mechanical Desktop, Mathematica by Wolfram Research, etc.

AWARDS

Received Romanian Government scholarship for outstanding academic achievements 1982, 1983, 1984

PROFESIONAL MEMBERSHIPS

The Romanian Association for Machines and Mechanisms Theory (**AROTMM**)

The Romanian Society for Robotics (**SRR**)

PATENTS AND INVENTIONS

1. Webster III R., Mantifar M., Edwards C., **Iordachita, I.**, *Tensiometer for Biological Tissue*. JHU Ref.: 5009, Provisional US Patent Application filed on 06/22/2006

2. Fischer GS, Fichtinger G, **Iordachita I**, DiMaio S, *MRI Compatible Robotic Manipulator for Image-Guided Transperineal Prostate Brachytherapy*, JHU Ref.: 4754, Provisional US Patent Application US 60/691,551 filed on 06/17/2005
3. Stoianovici D., Fichtinger G., Wiard R.M., **Iordachita I.**, Whitcomb L., Taylor R.H., *Controllable motorized device for percutaneous needle placement in soft tissue target and methods and systems related thereto*. U.S.Patent No. US2002/0111634A1, Aug.15.2002

PUBLICATIONS

Books and Textbooks

1. Popescu I., **Iordachita I.**, Dumitru N., Rinderu P., *Biological Mechanisms*, SITECH Publishing House, Craiova, 1997, ISBN 973-97524-9-1, 232 pages (in Romanian).
2. **Iordachita, I.**, *The Special Mechanisms and Mechanical Transmissions for Industrial Robots*, University of Craiova, Publishing House, 1997, 222 pages (in Romanian);
3. **Iordachita, I.**, *Industrial Robots*, University of Craiova, Publishing House, 1997, 245 pages (in Romanian);
4. Catrina Gh., Dumitru N., Ilie E., **Iordachita I.**, Margine Al., Rosca D., *Machine Parts. Practical Applications Guide*, University of Craiova, Publishing House, 1994, 204 pages (in Romanian);

Books chapters and sections

1. Elmenreich W., Tenreiro Machado J.A., and Rudas I.J., *Intelligent Systems at the Service of Mankind*, Vol. I, Ubooks, 2003, ISBN 3-935798-25-3.

Journal Papers

1. Boctor EM., **Iordachita I.**, Fichtinger G., Hager GD., *"Ultrasound self-calibration"*, Proceedings of SPIE -- Volume 6141, Medical Imaging 2006: Visualization, Image-Guided Procedures, and Display
2. Fichtinger G, Deguet A, Fischer G., **Iordachita I**, Balogh E, Masamune K, Taylor RH, Fayad LM, De Oliveira M, Zinreich SJ, *CT Image Overlay for Percutaneous Needle Insertions*, Journal of Computer Aided Surgery, July 2005; 10(4): 241–255
3. **Iordachita, I.**, Catrina, G., *Considerations over the Precision of the Industrial Robots*. Annals of University of Craiova, Romania, Mechanics Part, no.1/2001, ISSN 1223-5296, pp. 137-142
4. Catrina, G., **Iordachita, I.**, *The Kinematics Error of a TRTRR Robot*. Annals of University of Craiova, Romania, Mechanics Part, no.1/1999, ISSN 1223-5296, pp. 366-371
5. **Iordachita, I.**, Tudor, M., *Contributions to Modelling of Biomechanisms that Ensure the Reptiles Locomotion*. Annals of University of Craiova, Romania, Mechanics Part, no.1/1999, ISSN 1223-5296, pp. 120-123
6. **Iordachita, I.**, *Aspects Regarding the Kinematics of the Dragging Locomotion*. TCMM nr.29, Editura Tehnica, Bucuresti, pp.281-284 (ISBN 973-31-1091-4, ISBN 973-31-1094-9)

7. **Iordachita, I.**, *Experimental Research Regarding Mechanisms for Dragging Locomotion*. TCMM nr.29, Editura Tehnica, Bucuresti, pp.273-280 (ISBN 973-31-1091-4, ISBN 973-31-1094-9)
8. **Iordachita, I.**, *Contributions to the Inverse-Kinematic of Mechanisms that Provide Dragging Locomotion*. Annals of University "Constantin Brâncusi", Targu-Jiu, Romania, Nr.4/1997, Part B, pp. 477-482
9. **Iordachita, I.**, *Contributions to the Structure of Locomotion Dragging Mechanisms*. Annals of University "Constantin Brâncusi", Targu-Jiu, Romania, Nr.4/1997, Part B, pp. 471-476
10. **Iordachita, I.**, Cretu, S., *Control Function for Mechanisms Assuring the Dragging Locomotion Heaving Translation Joints*. Annals of University of Craiova, Romania, Mechanics Part, 1995 pp. 108-111
11. **Iordachita, I.**, *Considerations over the Median Line Expression in the Case of Mechanisms that Provide Crawling Locomotion*. Annals of University of Craiova, Romania, Mechanics Part, 1995 pp. 105-107
12. **Iordachita, I.**, *Contributions to the Kinematics of Mechanisms that Provide Dragging Locomotion*. Annals of University "Constantin Brâncusi", Targu-Jiu, Romania, Nr.2/1995, Part B, pp.103-108

Peer-Reviewed Conference Papers

1. DiMaio S.P., Samset E., Fischer G., **Iordachita I.**, Fichtinger G., Jolesz F., Tempany C.M., *Dynamic MRI Scan Plane Control for Passive Tracking of Instruments and Devices*, MICCAI 2007 (accepted)
2. Fichtinger G., Fiene J., Kennedy C.W., Kronreif G., **Iordachita I.**, Song D.Y., Clif E., Kazanzides P., *Robotic Assistance for Ultrasound Guided Prostate Brachytherapy*, MICCAI 2007 (accepted)
3. Fischer G., DiMaio S.P. **Iordachita I.**, Fichtinger G., *Development of a Robotic Assistant for Needle-Based Transperineal Prostate Interventions in MRI*, MICCAI 2007 (accepted)
4. Jain A., Deguet A., **Iordachita I.**, Chintalapani G., Blevins J., Le Y., Armour E., Burdette C., Song D., Fichtinger G., *Intra-operative 3D Guidance in Prostate Brachytherapy using a non-isocentric C-arm*, MICCAI 2007 (accepted)
5. Krieger A, Csoma C, Guion P, **Iordachita I**, Metzger G, Qian D, Singh A, Whitcomb L, Fichtinger G, *Design and Preliminary Accuracy Studies of an MRI-Guided Transrectal Prostate Intervention System*, MICCAI 2007 (accepted)
6. Matinfar M., Gray O., **Iordachita I.**, Kennedy C., Ford E., Wong J., Taylor R.H Kazanzides P., *Small Animal Radiation Research Platform Imaging, Mechanics, Control and Calibration*, MICCAI 2007 (accepted)
7. Mitchell B., Koo J., **Iordachita I.**, Kazanzides P., Kapoor A., Handa J., Taylor R., Hager G., *"Development and Application of a New Steady-Hand Manipulator for Retinal Surgery"*, 2007 IEEE International Conference on Robotics and Automation, 10-14 April, 2007, Rome, Italy

8. Kazanzides P, Chang J, **Iordachita I**, Li J, Ling C, Fichtinger G.: *Design and Validation of an Image-Guided Robot for Small Animal Research*, Ninth International Conference on Medical Image Computing and Computer-Assisted Intervention -- MICCAI 2006, Copenhagen, Denmark, 2006
9. **Iordachita I**, Kapoor A, Mitchell B, Kazanzides P, Hager G, Handa J, Taylor R, "Steady-Hand Manipulator for Retinal Surgery", Medical Robotics Workshop, Ninth International Conference on Medical Image Computing and Computer-Assisted Intervention -- MICCAI 2006, Copenhagen, Denmark, 2006
10. Fischer GS., DiMaio SP., **Iordachita I.**, Fichtinger G., "Robotic MRI-guided Prostate Needle Placement", Medical Robotics Workshop, Ninth International Conference on Medical Image Computing and Computer-Assisted Intervention -- MICCAI 2006, Copenhagen, Denmark, 2006
11. Fischer GS., DiMaio SP., **Iordachita I.**, Fichtinger G., *Design of a Robot for Transperineal Prostate Needle Placement in MRI Scanner*, IEEE International Conference on Mechatronics, Budapest, Hungary, 2006
12. Jain AK, **Iordachita I**, Fichtinger G, *Small Size Fiducial for C-arm Tracking (FTRAC)*, Annual Meeting of the International Society for Computer Assisted Surgery, Montreal, Canada, 2006
13. Popa D., Tarnita D., Tarnita D., **Iordachita I.**, "About the Simulation of the Human Knee Joint for Walking Locomotion" 15th International Workshop on Robotics in Alpe-Adria-Danube Region (RAAD 2006), Balatonfured, Hungary, June 15-17, 2006
14. Krieger A., **Iordachita I.**, Metzger G., Guion P., Atalar E., Fichtinger G., Whitcomb LL., *Accuracy of Hybrid Tracking for a Novel MR-Guided Transrectal Prostate Interventional Device*, 6th Interventional MRI Symposium, Leipzig, 2006
15. Fischer GS., DiMaio SP., **Iordachita I.**, Fichtinger G., *Robotic Assistant for MR-Guided Prostate Biopsy*, 6th Interventional MRI Symposium, Leipzig, 2006
16. DiMaio S, Fischer G, Haker S, Hata N, **Iordachita I**, Tempany C, Fichtinger G, *Design of an Prostate Needle Placement Robot in MRI Scanner*, IEEE International Conference on Biomedical Robotics, Pisa, Italy, Feb 15-19, 2006
17. Boctor EM, **Iordachita I**, Hager GD, Fichtinger G, *Bootstrapped Ultrasound Calibration*, Medicine Meets Virtual Reality #14, Long Beach, California, 2006
18. Boctor EM., **Iordachita I.**, Fichtinger G., Hager GD., *Real-time Quality Control of Tracked Ultrasound*, Eighth International Conference on Medical Image Computing and Computer-Assisted Intervention -- MICCAI 2005, Proceedings in Lecture Notes in Computer Science Vol. 3749, pp 621-627, Springer, 2005
19. J.C. Li, E. Balogh, **I. Iordachita**, G. Fichtinger, P. Kazanzides: *Image-Guided Robot System for Small Animal Research*, First International Conference on Complex Medical Engineering-CME2005, Takamatsu, Japan, May 15 - 18, 2005
20. Boctor EM, **Iordachita I**, Hager GD, Fichtinger G, *Ultrasound Self-Calibration and Real-Time Quality Control for Interventions*, IEEE International Ultrasonics Symposium, Rotterdam, the Netherlands 18-21 September, 2005
21. Popa, D., **Iordachita, I.**, Tarnita, D., *Methods of study for Human Knee Applicable to Humanoid Robots*. Proceedings of RAAD'05, 14th International Workshop on Robotics in Alpe-Adria-Danube Region, Bucharest, Romania: May 26-28, 2005
22. Sakuma, I., Mukaiyama, K., **Iordachita, I.**, Matsumiya, K., Kobayashi, E., Yano, H., *A Bone Cutting Device for Rotational Acetabular Osteotomy (RAO) with a Curved*

- Oscillating Saw*, Proceedings of the 18th International Congress and Exhibition, CARS 2004, Chicago, USA, June 23-26, 2004, ELSEVIER International Congress Series 1268, ISBN 0444517316, pp.632-637
23. **Iordachita, I.**, Wiard, R., Fichtinger, G., Sakuma, I., Stoianovici, D., *Controllable Motorized Devices for Accurate Percutaneous Needle Placement in Soft Tissue Target*, Proceedings The Eleventh World Congress in Mechanism and Machine Science, Tianjin, China, April 2004, China Machine Press, ISBN 7-111-14073-7/TH.1438, Vol.1, pp. 82-86
 24. Tudor, M., **Iordachita, I.**, *Experimental Model for Walking and Creeping Locomotion*, Proceedings of RAAD'04, 13th International Workshop on Robotics in Alpe-Adria-Danube Region, Brno, Czech Republic: June 2-5, 2004, ISBN 80-7204-341-2, pp. 250-255
 25. Popa, D., **Iordachita, I.**, *Aspects About the Kinematics Simulation for a Jumping Experimental Model*, Proceedings of RAAD'04, 13th International Workshop on Robotics in Alpe-Adria-Danube Region, Brno, Czech Republic: June 2-5, 2004, ISBN 80-7204-341-2, pp. 370-375
 26. **Iordachita, I.**, *A Mechanism that provide Snake-like Locomotion*, IEEE 7th International Conference on Intelligent Engineering Systems, INES 2003, Assiut – Luxor, Egypt, March, 2003, paper no. CAE-06
 27. Tudor, M., **Iordachita, I.**, *A Method to Study the Walking and Creeping Movement of a Bio-Mechanism*, 12th International Workshop on Robotics in Alpe-Adria-Danube Region RAAD'03, Cassino, Italy: May 7-10, 2003, paper no. 050RAAD03
 28. Popa, D., **Iordachita, I.**, *Aspects About Some Studies Made on Jumping Mechanisms Inspired from Nature*, 12th International Workshop on Robotics in Alpe-Adria-Danube Region RAAD'03, Cassino, Italy: May 7-10, 2003, paper no. 031RAAD03
 29. **Iordachita, I.**, Patriciu, A., Mazilu D., Catrina, G., Stoianovici, D., *Force-feedback tests for Medical Robots*, Proceedings of the 2002 International Conference on Intelligent Engineering Systems, INES 2002, May 26-28, 2002 Opatija, Croatia, ISBN 953-6071-17-7, ISSN 1562-5850, pp. 41-44
 30. **Iordachita, I.**, *Considerations Over the Control Functions for the Mechanisms that Ensure Dragging Locomotion*, Proceedings 11th International Workshop on Robotics in Alpe-Adria-Danube Region, RAAD 2002, Balatonfured, Hungary, 2002, ISBN 963-7154-10-8, pp. 220-223
 31. **Iordachita, I.**, Stoianovici, D., Kavoussi, L., *A Method to Evaluate Changes in Dexterity when Using a robot in Laparoscopic Surgery*, 10th International Workshop on Robotics in Alpe-Adria-Danube Region, RAAD'01, Vienna University of Technology, Austria, 2001, 8 pages
 32. Catrina, G., **Iordachita, I.**, Margine, A., *The Precision of Generating a Linear Course to the Industrial Robots*. Third International Conference on Electro-mechanic and Energetic Systems, SIELMEN-2001, ISBN 9975-9638-8-9, Chisinau, Moldova, 2001, Vol. III, pp.207-210
 33. **Iordachita, I.**, Stoianovici, D., Catrina, G., *A Mechanism for Rotation and Insertion of the Needles Used in Medical Procedures*. Third International Conference on Electro-mechanic and Energetic Systems, SIELMEN-2001, ISBN 9975-9638-8-9, Chisinau, Moldova, 2001, Vol. III, pp.203-206
 34. **Iordachita, I.**, Stoianovici, D., Riviere, C., *A Mechanism for Accurate Percutaneous Needle Placement in Soft Tissue Target*. The Eight IFToMM International Symposium on Theory of Machines and Mechanisms, SYROM 2001, University POLITEHNICA of Bucharest, Romania, 2001, Vol.II, pp. 143-148
 35. Riviere, C.N., Thakral, A., **Iordachita, I.**, Mitroi, G., Stoianovici, D., *Predicting Respiratory Motion for Active Canceling During Percutaneous Needle Insertion*, Proceedings of the 23rd Annual International Conference of the IEEE, October 25-28, 2001, Istanbul Turkey, 0-7803-7211-5/01, vol.4, pp. 3477-3480

36. **Iordachita, I.**, *Contributions Regarding Structure of Mechanisms that Ensure Dragging Locomotion*. Proceedings of the 9th International Workshop on Robotics in Alpe-Adria-Danube Region, RAAD'2000, ISBN 86-435-0324-X, University of Maribor; Slovenia, June 1-3, 2000, pp. 35-40
37. Patriciu, A., Stoianovici, D., Whitcomb, L., Jarrett, T., Mazilu, D., Stanimir, A., **Iordachita, I.**, Anderson, J., Taylor, R., Kavoussi, L. *Motion-Based Robotic Instrument Targeting under C-Arm Fluoroscopy*, Medical Image Computing and Computer-Assisted Intervention, MICCAI 2000, Pittsburgh PA, USA, 11-14 October 2000
38. **Iordachita, I.**, *Dragging Locomotion Mechanism - Experimental Model*. Proceedings of the 8th International Workshop on Robotics in Alpe-Adria-Danube Region, RAAD'99, TU Munchen, Germany, 1999
39. **Iordachita, I.**, *Control Functions for the Roboto-mechanisms that Ensure Dragging Locomotion*. The 14th National Symposium on Robotics, ROBOTICA'98, ISBN 973-98796-1-6, University "Transilvania" of Brasov, Romania, 1998, pp.267-270
40. **Iordachita, I.**, *Experimental Research Regarding Mechanisms for Dragging Locomotion*. The Seventh IFToMM International Symposium on Linkages and Computer Aided Design Methods - Theory and Practice of Mechanisms - Bucharest, Romania, 1997, vol. III. pp.273-280
41. **Iordachita, I.**, *Aspects Regarding the Kinematics of the Dragging Locomotion Mechanisms*. The Seventh IFToMM International Symposium on Linkages and Computer Aided Design Methods - Theory and Practice of Mechanisms - Bucharest, Romania, 1997, vol. III. pp.281-284
42. **Iordachita, I.**, *Aspects of Dragging Locomotion Mechanism Structure*. VII-th National Symposium on Mechanisms and Mechanical Transmissions, MTM'96, Resita, Romania, 1996, vol. I, pp. 77-82
43. **Iordachita, I.**, *Contributions to the Inverse-Kinematics of the Mechanisms Assuring the Dragging locomotion*. VII-th National Symposium on Mechanisms and Mechanical Transmissions, MTM'96, Resita, Romania, 1996, vol. I, pp. 83-88
44. **Iordachita, I.**, *The Structure and Kinematics of Locomotion Dragging Mechanisms*. Ninth World Congress on the Theory of Machines and Mechanisms. No.316, Milan, Italy, 1995
45. **Iordachita, I.**, *The Structural Modeling of Locomotion Dragging Biomechanisms*. XII-th National Symposium on Industrial Robots. Timisoara, Romania, 1994, vol. II, pp. 189-196
46. **Iordachita, I.**, Dumitru, N., *About the Kinematics of Locomotion Dragging Biomechanisms*. XII-th National Symposium on Industrial Robots. Timisoara, Romania, 1994, vol. II, pp. 197-206
47. Dumitru, N., **Iordachita, I.**, *About the Dynamic Modeling of Planar and Spatial Kinematics Chains*. XII-th National Symposium on Industrial Robots. Timisoara, Romania, 1994, vol. V, pp. 125-132
48. **Iordachita, I.**, Dumitru, N., *Contributions to the Structure and Kinematics of some Locomotion Dragging Mechanisms*. The Sixth IFToMM International Symposium on Linkages and Computer Aided Design Methods - Theory and Practice of Mechanisms - Bucharest, Romania, 1993, vol. II. pp.141-147
49. **Iordachita, I.**, Dumitru, N., *The Elaboration of Locomotion Systems of Digging Tunnels Machine based on Bionics Principles*. VI-th National Symposium on MTM. Timisoara, Romania, 1992, vol.1, MTM paper #41
50. Dumitru, N., **Iordachita, I.**, *Aspects about the Modeling of Jumping Mechanisms from an Insect*. XI-th National Symposium on R.I. Timisoara, Romania, 1992, vol.3 RI, paper 53

51. Dumitru, N., **Iordachita, I.**, *The algorithm for Kinematical and Dynamical Study of Gearing Mechanism*. VIth National Symposium on MTM, Timisoara, Romania, 1992, vol.2 MTM, paper #32
52. Catrina, Ghe., Radulescu, M., **Iordachita, I.**, Margine, A., Bogdan, R., *The Stand for testing of Differential Transmissions Screw-nut*. VI-th National Symposium on MTM, Timisoara, Romania, 1992, vol.2 MTM, paper #47
53. Dumitru, N., **Iordachita, I.**, *Contributions concerning the Modeling of Some Locomotion Bio-mechanisms for Insects*. X-th National Symposium on Industrial Robots, Bucuresti, Romania, 1991, vol. I, pp.64-69
54. **Iordachita, I.**, Horosan, D., Hacman, L., *Considerations regarding the Possibility of the Railway Locomotives and Electrical Boxes Sanding Automatization*. VIII-th National Symposium on Industrial Robots. ROBOT'88, Cluj Napoca, Romania, 1988, pp.331-336
55. **Iordachita, I.**, Horosan, D., Hacman, L., *Contributions to the Pneumatic Motor Dynamics*. VII-th National Symposium on Industrial Robots. MERO'87, Bucuresti, Romania, 1987, pp.50-56
56. Horosan, D., **Iordachita, I.**, Hacman, L., *Contributions to the Mechanisms Design using a Computer Optimization Method*. VII-th National Symposium on Industrial Robots. MERO'87, Bucuresti, Romania, 1987, pp.61-68
57. **Iordachita, I.**, Horosan, D., Hacman, L., *A Study of Linear Pneumatic Motor Dynamics. Computer Simulation of the Braking Process in the Run End*. VI-th National Symposium on Industrial Robots, ROBOT'86, Brasov, Romania, 1986, pp.67-74
58. Horosan, D., **Iordachita, I.**, Hacman, L., *A Study of Linear Pneumatic Motor Dynamics. Computer Simulation of the Pneumatic Cylinder Operation*. VI-th National Symposium on Industrial Robots, ROBOT'86, Brasov, Romania, pp.57-65
59. Bagnaru, D., Nanu, Gh., **Iordachita, I.**, *Modeles a un nombre fini de degres de liberte pour les mecanismes spatiaux a elements deformables*. The Fourth IFToMM International Symposium on Linkages and Computer Aided Design Methods-Theory and Practice of Mechanisms - Bucharest, Romania, 1985, vol. II-1. pp.27-34

Peer-Reviewed Conference Abstracts

1. Jain A., Deguet A., **Iordachita I.**, Chintalapani G., Blevins J., Le Y., Armour E., Burdette C., Song D., Fichtinger G., *"C-arm Based Intra-Operative Dosimetry for Prostate Brachytherapy"*, 49th AAPM Annual Meeting; Minneapolis, 2007
2. Krieger A., Csoma C., Guion P., **Iordachita I.**, Metzger G., Qian D., Singh A., Whitcomb L., and Fichtinger G., *"Phantom Experiments with a Novel MR-Guided Transrectal Prostate Interventional System"*, Joint Annual Meeting ISMRM-ESMRMB - 2007, 19-25 May 2007, ICC, Berlin, Germany, 2007
3. Bootsma G. J., Krieger A., **Iordachita I.**, Piron C., Richmond J., Sela G., Filletti M., Rocca C., Kirilova A., Brock K., Jaffray D.A., Haider M.A. and Ménard C., *"A System for Prostate Intervention in a 1.5 T MRI Scanner in the Supine Position "*, Joint Annual Meeting ISMRM-ESMRMB - 2007, 19-25 May 2007, ICC, Berlin, Germany, 2007
4. Fischer GS., DiMaio SP., **Iordachita I.**, Fichtinger G., *"Robotic assistant for MR-guided prostate biopsy"*, "6th Interventional MRI Symposium, Leipzig, Germany, September 15-16, 2006
5. Krieger A., **Iordachita I.**, Metzger G., Guion P., Atalar E., Fichtinger G., Whitcomb L. *"Accuracy of hybrid tracking for a novel MR-guided transrectal prostate interventional device"*, 6th Interventional MRI Symposium, Leipzig, Germany, September 15-16, 2006
6. Kennedy CW., **Iordachita I.**, Burdette EC., Kronreif G., Ptacek W., Kazanzides P., Song

- DY., Fichtinger G., “*Robotically Assisted Needle Placement for Prostate Brachytherapy*”, AAPM 48th Annual Meeting, Conference of American Association of Physicists in Medicine, Orlando FL, Journal of Medical Physics, July-August 2006
7. J.W. Wong, E.A. Armour, E. Tryggestad, H. Deng, C. Kennedy, E. Ford, T. McNutt, **I. Iordachita**, P. Kazanzides and T.L. DeWeese. *A Bench-Top “Micro” Image Guided Radiation Therapy (μ IGRT) System for Laboratory Animals*, AAPM 48th Annual Meeting, Conference of American Association of Physicists in Medicine, Orlando FL, Journal of Medical Physics, July-August 2006
 8. Ford E, Kennedy CW, McNutt T, Armour E, **Iordachita I**, Kazanzides P, Wong J, “*The Small Animal Radiation Research Platform: Benchtop Cone-Beam CT*”, AAPM 48th Annual Meeting, Conference of American Association of Physicists in Medicine, Orlando FL, Journal of Medical Physics, July-August 2006
 9. Deng H, Kennedy CW, Armour E, McNutt T, Tryggestad E, Ford E, **Iordachita I**, Burdette EC, Kazanzides P, Huang J, Wong J, “*The Small-Animal Radiation Research Platform (SARRP): Focused Pencil Beam Dosimetry*”, AAPM 48th Annual Meeting, Conference of American Association of Physicists in Medicine, Orlando FL, Journal of Medical Physics, July-August 2006
 10. Tryggestad E, Armour E, Deng H, Ford E, Huang J, **Iordachita I**, Kazanzides P, Kennedy CW, McNutt T, Verhaegen F, Wong J, “*The Small-Animal Radiation Research Platform (SARRP): Commissioning a 225 KVp “small-Field” X-Ray Source for Monte Carlo-Based Treatment Planning*”, AAPM 48th Annual Meeting, Conference of American Association of Physicists in Medicine, Orlando FL, Journal of Medical Physics, July-August 2006
 11. Li J.C., **Iordachita I.**, Balogh E., Fichtinger G., Kazanzides P., “*Validation of an Image-Guided Robot System for Measurement, Biopsy and Injection in Rodents*”, Proc. IEEE 31st Annual Northeast Bioengineering Conf., Hoboken, NJ, April 2005
 12. Mukaiyama K., **Iordachita I.**, Kobayashi E., Yano H., Sakuma I., *Development of a bone cutting device to support Rotational Acetabular Osteotomy (RAO) using a oscillating saw*. The Japan Society of Computer Aided Surgery (JSCAS), Nagoya, 2003. pp.27-28
 13. Roberts W., **Iordachita I.**, Patriciu A., Mazilu D., Jarrett T. W., Kavoussi L., and Stoianovici D., “*Quantifiable Tests of Laparoscopic Dexterity: Robotic Versus Manual Laparoscopy*,” presented at Society for Urology and Engineering, 16th Annual Meeting, Anaheim, CA, 2001.
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1. *An Image Guided Small Animal Radiation Research Platform*. 1R21CA180449-01, Johns Hopkins University; Grantor NIH, 2005-2007, research engineer.
2. *Enabling Technology for MRI-guided Prostate Interventions*. 1R01CA111288-01, Johns Hopkins University; Grantor NIH, 2005-2007, research engineer.
3. *C-arm Fluoroscopy in Prostate Brachytherapy*. 2R44CA099374-02, Johns Hopkins University; Grantor NIH, 2006, staff engineer.
4. *Image Overlay for MRI-guided Needle Insertions*, R01CA118371, Johns Hopkins University; Grantor NIH, 2006, research engineer.

5. *Steady-Hand Manipulator for Retinal Surgery*, Part of EEC-9731478, Johns Hopkins University; Grantor NSF, 2005-2006, research engineer.
6. *Trans-rectal Prostate Therapy Robot in Closed MRI Scanner*. 1R01EB002963-01, Johns Hopkins University; Grantor NIH, 2005-2006, research engineer.
7. *Ultrasound Ablation of Bone Cancer with CT Fluoroscopy Guidance*. 1R43CA112852-01, Johns Hopkins University; Grantor NIH, 2005-2006, research engineer
8. *Ultrasound in Therapy Planning and Monitoring*. Johns Hopkins University; Grantor: NIH, 2005, research engineer.
9. *Robotic Needle Placement in Small Animal Research*. Johns Hopkins University, Grantor: Memorial Sloan Kettering Cancer Center, 2004, research engineer;
10. *Image Overlay System*. Johns Hopkins University, Grantor: Siemens Corporate Research, 2004, research engineer;
11. *Study on Surgical Robotics*. Beneficiary: Graduate School of Frontier Science, the University of Tokyo, JAPAN, 10.2002-09.2003, Co-PI
12. Contract #663/1997 University of Craiova, *The Experimental Modeling of Dragging Locomotion. The General Method for Calculating of Dragging Locomotion Robot.*, Beneficiary: MCT, Romania, Co-PI;
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17. Contract # 2601 ICSIT-MTAE Craiova, *Speed Transducers for Locomotives*. Beneficiary: ELECTOPUTERE Craiova, Romania, project manager;

18. Contract # 2559 ICSIT-MTAE Craiova, *Electrical Locomotive for 5000-6000 kW with Tiristors EB-01*. Beneficiary: ELECTOPUTERE Craiova, Romania, project collaborator;
19. Contract # 4119 ICSIT-MTAE Craiova, *Transformation of Electrical Diesel Locomotive 4000 CP in Electrical Locomotive with Diodes 2900 kW*. Beneficiary: ELECTOPUTERE Craiova, Romania, project collaborator;
20. Contract # 4114 ICSIT-MTAE Craiova, *Electrical Shunting Diesel Locomotive type 623-BS2*. Beneficiary: ELECTOPUTERE Craiova, Romania, project collaborator;
21. Contract # 4105 ICSIT-MTAE Craiova, *Electrical Shunting Locomotive LEM-1200 kW*. Beneficiary: ELECTOPUTERE Craiova, Romania, project collaborator;
22. Contract # 4106 ICSIT-MTAE Craiova, *Electrical Diesel Locomotive 3000 CP ca-ca*. Beneficiary: ELECTOPUTERE Craiova, Romania, project collaborator;
23. Contract # 4102 ICSIT-MTAE Craiova, *Project for Electrical Locomotive for 3000-4000 kW (Bo-Bo) type Erc 438 CL1*. Beneficiary: ELECTOPUTERE Craiova, Romania, project collaborator;
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