Curriculum Vitae

Leo Joskowicz

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Research Interests

- **Medical image analysis and computer-aided surgery**: deep learning and model-based medical image processing, anatomical modeling, multi-modality registration, surgical navigation, medical robotics, with emphasis on radiology, orthopaedics,and neurosurgery.
- **Computer-aided mechanical design and computational geometry:** geometric reasoning, analysis, design, and tolerancing, assembly planning and validation, the configuration space method, geometric uncertainty.

Education

1984-1988	PhD, Courant Institute of Mathematical Science, Computer Science Department, New York University, USA. Advisor: Prof. E. Davis.
1983-1984	MSc, Courant Institute of Mathematical Science, Computer Science Department, New York University, USA. Advisor: Prof. M.C. Harrison.
1978-1983	BSc, Computer Science Department, Technion, Israel Institute of Technology, Haifa, Israel.
1965-1978	Diplome Baccalauréat Série E, Lycée Franco-Mexicain, Mexico City.

Honors and Awards (selected)

- Fellow, MICCAI – Medical Image Computing and Computer Aided Interventions Society, 2017.
- Fellow, IEEE – Institute for Electric and Electronic Engineers, 2013.
- Fellow, ASME – American Society of Mechanical Engineers, 2012.
- M.E. Müller Award for Excellence in Computer Assisted Surgery, 2010.
- Kaye Innovation Award, The Hebrew University of Jerusalem, 2007.

Employment

01/20 -	CTO and Co-founder, HighRAD Ltd, Israel.
10/06 -	Professor, School of Computer Science and Eng., Hebrew University.
07/10 -	Member, Edmond and Lily Safra Center for Brain Sciences, Hebrew University.
10/01 - 02/09	Director, Leibniz Center for Research in Computer Science, Hebrew University. Elected for three consecutive three-year periods.
10/00 - 10/06	Associate Professor, School of Computer Science, Hebrew University.
10/95 - 10/00	Senior Lecturer, Institute of Computer Science and Eng., Hebrew University. Founder, Computer-Aided Surgery and Medical Image Processing Laboratory.
04/14 – 03/16	Visiting Professor, Chiba University, Japan.
Summer 06-16	Visiting Professor, Instituto de Matemáticas, Universidad Nacional Autónoma de México (UNAM).
Summer 96-10	Visiting Professor, Instituto Tecnologico Autonomo de Mexico (ITAM).
September 07	Visiting Professor, Hospital for Special Surgery, Cornell U., New York, USA.
Summer 06	Visiting Professor, School of Medicine, Universidad Panamericana, Mexico.
Summer 97	Visiting Professor, Instituto de Investigaciones en Matemáticas Aplicadas y en Sistemas (IIMAS), Universidad Nacional Autónoma de México (UNAM).
9/94 - 10/95	Project Leader, Computer-Assisted Surgery group: Modeling and Registration. IBM T.J. Watson Research Center, Yorktown Heights, New York, USA.
10/88 - 3/93	Research Staff Member, Computer-Assisted Surgery group, IBM Research. Research Staff Member, Artificial Intelligence Department, IBM Research.
9/84 - 7/88	Research and Teaching Assistant, Courant Institute, New York University.
1/83 - 7/83	Programmer, Advanced Automated Applications, Haifa, Israel.

Grants

G1. *Patient-specific system for planning shoulder surgeries based on computational biomechanics and machine learning*, with Z. Yosibach, Israel Innovation Authority, KAMIN Grant, $275,000, 2023-25.

G2. *Increasing nodule detection in lung cancer by non-conscious detection of "missed" nodules and machine learning*, R01 Grant, with G. DiGirolamo, National Institutes of Health (NIH), $252,625 out of the total, 2022-27.

G3. *AI-based preoperative planning and AR-based surgical navigation for complex pelvic fracture surgery*, with X.Chen, Shanghai Jiao Tong University, China, Ministry of Science and Technology, Israel, $125,000, 2021-23.

G4. *Research on AI-based automatic image segmentation and surgical planning algorithms for Cranio-Maxillofacial surgery*, with X.Chen, Shanghai Jiao Tong University, China, The Hebrew Unbiversity of Jerusalem, Israel, $7,500, 2021-23.

G5. *Progression analysis of retinal atrophy diseases in longitudinal OCT studies by pairwise column-based CNN classification*, with J. Levy, Integra Holdings Ltd, $ 135,000, 2021-23.

G6. *Statistical inference for structured high-dimensional data* with Y. Benjamini, M. Nitzan, D. Weinshall, O. Zuk. Center for Interdisciplinary Data Science Research, $100,000, 2021-24.

G7. *Bootstrapping deep learning medical image analysis in Radiology* with D. Ben Bashat, Israel Innovation Authority, KAMIN Grant, $350,000, 2020-23.

G8. *Active deep learning for clinical brain MRI tumors analysis.* Edmond and Lily Safra Center for Brain Sciences Microseed Grant, $20,000, 2020-21.

G9. *Impaired language subsequent to stroke: new tools for a large-scale investigation of structure-function relations in the language domain*, with Y. Grodzinsky, Y. Loewenstein, and R. Eichel. Edmond and Lily Safra Center for Brain Sciences Grant, $100,000, 2019-20.

G10. *Fetal MRI based package for expert quantitative assessment of fetal development* with Prof. D. Ben Bashat, Tel Aviv Sourasky Medical Center. Israel Ministry of Trade and Industry, KAMIN Grant, $375,000, 2018-20.

G11. *Automated quantitative personalized patient radiological follow-up with model-based and deep learning radiomics*, Hebrew University Grant on Personalized Medicine, $53,000, 2018-19.

G12. *New method for imageless needle and patient tracking in interventional CT procedures* Israel Ministry of Trade and Industry, KAMIN Grant 57706, $200,000, 2016-18.

G13. *METASEG: a new medical image segmentation paradigm for clinical decision support and big data radiology.* Israel Ministry of Science, Technology and Space, Grant 53681, $350,000, 2016-2019.

G14. *CRYOPLAN: adaptive multi-needle cryoablation planning for percutaneous image-guided liver and kidney interventions.* Mamonide France-Israel Research in Biomedical Robotics, EU 80,000, 2016-2018.

G15. *Imageless needle tracking in interventional CT procedures.* Mobileye Applied Computer Science Grant, $20,000, 2016-2018.

G16. *SAMIR: Towards content-based medical image analysis and retrieval for big data radiology.* Oppenheimer Applied Research Grant, The Hebrew University, $25,000, 2015-16.

G17. *New method for online radiation dose optimization in repeat CT scanning.* Israel Ministry of Trade and Industry, KAMIN Grant 52643, $200,000, 2014-16.

G18. *Computational intelligence for radiology and surgery.* Israel Ministry of Science, Technology and Space - Knowledge Center in Machine Learning and Artificial Intelligence, $75,000 out of $750,000, 2013-2016.

G19. *Fast MRI scanning based on previous scans.* Alexander Silberman Applied Research Grant, The Hebrew University, $25,000, 2013-14.

G20. *Safe insertion trajectory planning in minimally invasive keyhole neurosurgery.* Julius and Fannie Rogoff Applied Research Grant, The Hebrew University, $40,000, 2012-13.

G21. *Computer-based tumors analysis and follow-up in radiological oncology studies.* Israel Ministry of Trade and Industry, KAMIN Grant 46217, $200,000, 2011-13.

G22. *ACTIVE: active constraints technologies for ill-defined or volatile environments.* 7th Framework Program, European Union, contract FP7-ICT-270461. Consortium of 10 universities and 2 companies in Italy, Germany, UK, and Israel, EU 125,000 out 3,500,000, 2010-15.

G23. *A generic framework for the automatic generation of digital patient-specific models.* Applied Research Grant, The Hebrew University, $40,000, 2010-11.

G24. *Computer-based quantitative patient-specific integrated femoral fracture fixation assessment.* Johnson and Johnson and Julius Oppenheimer Endowment Fund for Applied Research (with M. Liebergall and R. Mosheiff, Dept. of Orthopaedic Surgery, Hadassah), $60,000, 2009-10.

G25. *ROBOCAST: Robot and sensor integration as guidance for enhanced computer-assisted surgery and therapy.* 7th Framework Program, European Union, contract FP7-ICT-215190. Consortium of 8 universities and 2 companies in Italy, Germany, UK, and Israel, EU 205,000 out of EU 4,500,000, 2008-10.

G26. *Patient-specific preoperative simulation of endovascular surgical procedures.* Israel Ministry of Trade and Industry, MAGNETON Grant 38652 (with Simbionix Ltd. and J. Sosna, Dept of Radiology, Hadassah)$295,000 out of $795,000, 2007-09.

G27. *Computer-aided intraoperative fracture reduction and fixation based on electromagnetic tracking* Innovation Grant, The Hebrew University (with M. Liebergall), $15,000, 2006-07.

G28. *Navigated minimally invasive two-incision vs. non-navigated mini posterior approaches to total hip arthroplasty: comparative study.* The Joint Research Fund of the Hebrew University (with Y. Weill, M. Liebergall, Dept. of Orthopaedic Surgery, Hadassah) $15,000, 2005-06.

G29. *Image-guided system with a miniature robot for precise positioning and targeting in neurosurgery.* Ministry of Trade and Industry, MAGNETON Grant 37895 (with Mazor Surgical Technologies Ltd.), $165,00 out of $480,000, 2004-06.

G30. *Computer-aided image guidance and precise targeting in orthopaedic surgery.* Robert Szold Fund, Applied Research Grant, The Hebrew University (with M. Liebergall, Dept. of Orthopaedic Surgery, Hadassah), $22,000, 2003-04.

G31. *Fundamentals of virtual reality and medical applications.* Ministry of Science (with D. Lischisnky, Hebrew U.), $125,000 out of $1,500,000, 2002-05.

G32. *Vision based active robot navigation.* Ministry of Science (with I. Shimshoni, Technion, and R. Basri, Weizmann Institute), $70,000 out of $300,000, 2000-03.

G33. *Image-guided robot for minimally invasive surgery.* Ministry of Science, Strategic Infrastructure Grant (with M. Shoham, Technion), $100,000 out of $200,000, 1999-2001.

G34. *Registration technology for real-time imaging and tracking.* Ministry of Industry and Trade – IZMEL Consortium on Image-Guided Therapy (with DenX Ltd), $650,000 out of $3,000,000, 1998-2003.

G35. *Augmented surgery.* Ministry of Industry and Trade – IZMEL Consortium on Image-Guided Therapy (with Odin, Envision, and Biomedicom Ltd), $350,000 out of $3,000,000, 1998-2003.

G36. *A computer-integrated system for image-guided bone fracture surgery.* Hadassit Grant – Hadassah Medical Organization (with C. Milgrom, Hadassah), $56,700, 1999-2000.

G37. *Computer-aided contact analysis and mechanical system design using configuration spaces.* Israel Academy of Sciences (with E. Sacks, Purdue U.), Grant 98/536, $ 120,000 out of $130,500, 1998-2001.

G38. *Automatic allocation of functional tolerances and quantification of robustness* Ford Univ. Research Grant (with E. Sacks, Purdue U.), $100,000 out of $200,000, 1998-2000.

G39. *Real-time three-dimensional motion tracking and measurement system.* Equipment Grant 9061/98, Israel Academy of Sciences, $50,000, 1998.

G40. *Computational kinematics.* Authority for Research and Development, The Hebrew University, $17,000, 1997-1998.

G41. *Medical imaging.* Silicon Graphics Biomedical Ltd, Israel, $18,000, 1996-1997.

G42. Guastalla Faculty Fellowship, Israel, $100,000, 1995-1998.

Editorial Boards

1. Deputy Editor, *Int. J. of Computer Assisted Radiology and Surgery*, Springer, since its inception in 2006.
2. Member, Editorial Board, *Medical Image Analysis*, Elsevier, since 2000.
3. Member, Editorial Board, *Computer Methods in Biomechanics and Biomedical Engineering: Imaging and Visualization*, since 2014.
4. Member, Editorial Board, *Computer-Aided Surgery*, Wiley, Francis and Taylor since 1997.
5. Member, Editorial Board, *J. of Computational Design and Engineering*, Elsevier, since 2015.
6. Member, Editorial Board, *Advanced Engineering Informatics* (formerly *Artificial Intelligence in Engineering*, Elsevier), since 1992.
7. Member, Editorial Board, *Annals of Mathematics and Artificial Intelligence*, Springer, since 1997.
8. Associate Editor, *IEEE Trans. Automation Science and Engineering*, IEEE Press, 2010-18.
9. Member, Editorial Board, *Nature Scientific Reports*, 2017-19.
10. Associate Editor, *ASME J. of Computing and Information Science in Engineering*, ASME Press, 2005-09.

Recent Professional Activities

- President, MICCAI Society, 2019-2022.
- Program Committee member, *28th Congress of the European Society of Biomechanics*, Maastrich, the Netherlands, Jul 91-2, 2023.
- Honorary Chair, *Medical Imaging and Computer Aided Diagnosis*, MICAD 2022, U. of Leicester, UK, 2022.
- Member, Organizing Committee, *Int. Congress on Computer Assisted Radiology and Surgery*, CARS 2007-24.
- Member, Program Committee, *14-37th Int. Congress on Computer Assisted Radiology and Surgery*, CARS 2000-24.
- General Co-chair, *23rd Int. Conf. on Medical Image Computing and Computer Assisted Interventions*, Lima, Peru, 2020.
- Organizing Committee Member, *IEEE International Workshop on Robotic Medical Devices and Semantic Systems*, Taichung, Taiwan, Apr 10-12, 2017.
- Scientific committee member, *MICCAI 2017 and 2018 Workshops on Bio-Imaging and Visualization for Patient-Customized Simulations*, Quebec, Canada 2017, Granada Spain 2018.
- Program Co-Chair, *18th Int. Conf. on Medical Image Computing and Computer Assisted Interventions*, Athens, Greece, 2016.
- Member, Program Committee, *7th Int. Conf. on Medical Imaging and Augmented Reality*, Bern, Switzerland, 2016.
- Co-founder and Chair, *1st Israeli Symp. on Computational Radiology*, Tel-Aviv, Israel, 2015.
- Member, Board of Directors, *Medical Image Computing and Computer Aided Surgery Society*, MICCAI Society, Elected 2015-19.
- Vice-President, *29th Int. Congress on Computer Assisted Radiology and Surgery*, Barcelona, Spain, 2015.
- Advisory Board Member, *2nd Int. Workshop on Computer-Assisted and Robotic Endoscopy*, MICCAI 2015, Munich Germany, 2015.
- Co-organizer, *1st Israeli Symposium on Computational Radiology*, Tel-Aviv, 2016.
- Secretary General, *Int. Society for Computer-Aided Surgery*, ISCAS, Elected 2014.
- Secretary General, *Int. Society for Computer-Aided Orthopaedic Surgery*, CAOS-International, Elected 2007-13.
- Member, Executive Board, *Int. Society for Computer-Aided Surgery*, ISCAS. Elected, since 2002.
- Member, Program Committee, *1-17th Int. Conf. on Medical Image Computing and Computer Assisted Interventions*, MICCAI 1998-19.

- Member, Program Review Committee, *Int. Conf. on Computer-Aided Orthopaedic Surgery*, CAOS 2004-18.
- Member, Program committee, *Int. Congress on Cardiovascular Technologies*, 2013-16.
- Founding Member and Steering Committee Member, *1-6 Int. Conf. on Information Processing in Computer-Assisted Interventions*, IPCAI, 2010-17.
- Member, Program Committee, *1-11th Hamlyn Symposium on Medical Robotics*, London, UK, 2009-18.
- Member, Program Committee, *2nd MICCAI Workshop on Deep Brain Stimulation Methodological Challenges*, Sept 18 2014, Boston, USA.
- Program co-chair, *3rd Int. Conf. on Information Processing in Computer-Assisted Interventions*, IPCAI 2012.
- Member, Program Committee, *ACM Int. Symp. on Solid and Physical Modeling*, Haifa, Israel and Dijon, France, 2012.
- Co-organizer, *MICCAI Workshop on Deep Brain Stimulation Methodological Challenges*, Oct 1, 2012, Nice, France.
- Member, Program Committee, *MICCAI Workshop on Interdisciplinary Clinical Software Support*, Oct 1, 2012, Nice, France.
- Member, Organizing Committee, *23rd Conf. of the Society for Medical Innovation and Technology*, Tel-Aviv, Israel, Sept 13-16, 2011.
- Member, Program Review Committee, *IEEE Int. Symposium on Biomedical Imaging*, Chicago, USA, April 3-10, 2011.
- Member, Program Committee, *SIAM/ACM Joint Conference on Geometric and Physical Modeling*, Orlando, USA, Oct. 24-27, 2011.
- Member, Executive and Program Committee, *Int. Conf. on Information Processing in Computer-Assisted Interventions* (IPCAI), 2010-11.
- Co-chair and co-founder, *1-18th Israeli Symposium Computer-Aided Surgery, Medical Robotics, and Medical Imaging*, ISRACAS 1998-2016, Israel.
- Co-chair and co-founder, *1-17th Mexican Symposium on Computer Aided Surgery, Medical Image Processing, and Medical Robotics*, Mexico, 2000-16.

Theses (T)

T1. Bella Specktor-Fadida, PhD, 2024 *A label efficient deep learning approach for structures segmentation in fetal MRI scans.*

T2. David Shaul, PhD, 2024. *Characterization of metabolic activity in the heart and in the brain under ischemia with hyperpolarized magnetic resonance biomarkers and investigation of the mechanism underlying their utility* co-advisor with Prof. R. Katz-Brull.

T3. Netanell Avisdris, PhD, 2023. *Automatic fetal biometry in Ultrasound and MRI using deep learning.*

T4. Adi Szeskin, PhD, 2023. *Computer-based comparative radiological analysis of longitudinal volumetric scans.*

T5. Nir Mazor, MSc., 2023. *Pancreatic cysts detection and segmentation in multisequence MRI using deep learning.*

T6. Azriel Gold, MSc, 2023. *Automatic mapping of target materials and landmines in optical images using bacterial bio-reporters* (co-advisor with Prof. R. Agranat).

T7. Avichai Haimi, MSc, 2023. *Automatic glenoid bone loss detection and quantification in shoulder CT scans.*

T8. Shalom Rochman, MSc 2022. *Automatic lesion changes detection and classification by bipartite graph lesions matching.*

T9. Avigail Suna, MSc 2022. *Radial metaphyseal fractures in wrist radiographs: a surgical decision support method.*

T10. Neta Kenneth, MSc 2022. *Lung lesion changes analysis in longitudinal CECT scans by simultaneous deep learning classification.*

T11. Amihai Offenbacher, MSc 2021. *Computer-based radiological longitudinal volumetric evaluation of brain metastases after Stereotactic Radiosurgery.*

T12. Roei Yehuda, MSc 2021. *A column-based deep learning method for the detection and quantification of atrophy associated with Age-related Macular Degeneration in OCT scans.*

T13. Shai Kveller-Fenster, MSc 2021. *Placenta segmentation in fetal MRI scans by deep learning: a bootstrapping approach.*

T14. Rivka Gitik, PhD 2021. *Computational geometry with independent and dependent uncertainties.*

T15. Naomi Shamul, PhD, 2020. *Radon space dose optimization and change detection in repeat CT scans.*

T16. Gal Dudovitch, MSc 2020. *Automatic fetal structures segmentation in MRI scans: a deep learning approach with few annotated datasets.*

T17. Guy Medan, PhD, 2019. *Reduced-dose rigid registration in 3D Radon space for repeat CT procedures.*

T18. Michael Braginsky, MSc, 2019. *Interactive segmentation using real-time fine-tuning of a Fully Convolutional Network.*

T19. Clara Herscu, MSc, 2019. *Automatic liver segmentation in CT scans using deep learning.*

T20. Oren Shauly, MSc, 2018. *Segmentation and modeling of parotid salivary ductal systems in Sialo-CBCT.*

T21. Zeev Adelman, MSc, 2018. *Reduced-dose region-of-interest image reconstruction in repeat CT scanning.*

T22. Yigal Shenkman, MSc, 2018. *Automatic detection and diagnosis of sacroiliitis in CT scans as incidental findings.*

T23. Ilia Marek, MSc, 2018. *Computer-based radiological longitudinal evaluation of vestibular schwannomas after stereotactic radiosurgery.*

T24. Refael Vivanti, PhD, 2018. *Automatic liver and lungs tumors detection, segmentation, and tumor burden quantification in longitudinal CT scans.*

T25. Assaf Spanier, PhD, 2018. *Structure-specific automatic multi-parametric medical image analysis and retrieval*

T26. Dror Cohen, MSc, 2017. *Segmentation variability estimation in medical image processing: framework, method and study*

T27. Achia Kronman, PhD, 2017. *Detection, correction and minimization of segmentation errors in volumetric medical images.*

T28. Amitay Nachmani, MSc, 2016. *The effect of interpolation on contrast and model fitting in quantitative MRI* (co-advisor with Dr. A. Mezer).

T29. Or Bartal, MSc, 2015. *Euclidean minimum spanning tree with dependent uncertainties.*

T30. Ilya Kovler, MSc, 2014. *Haptic 3D virtual bone model manipulation in orthopaedics.*

T31. Lior Weizman, PhD, 2013. *Automatic methods for tumor segmentation and follow-up in MR images.*

T32. Yonatan Myers, PhD, 2013. *Geometric uncertainty with dependencies.*

T33. Miri Trope, MSc, 2013. *Planning safe trajectories in image-guided keyhole neurosurgey.*

T34. Dina Helfer, MSc, 2012. *Fast semi-automatic Plexiform Neurofibroma tumor segmentation in MRI scans.*

T35. Yehonathan Sela, MSc, 2011. *fMRI-based detection and classification of liver diseases using mice models.*

T36. Refael Vivanti, MSc, 2011. *Modeling and preoperative planning for kidney surgery.*

T37. Moti Freiman, PhD, 2010. *Shape constraint optimization for medical image segmentation and registration.*

T38. Ruby Shamir, PhD, 2010. *Improving accuracy and safety in image-guided keyhole neurosurgery.*

T39. Eran Peleg, PhD, 2009 (co-advisor). *Patient-specific quantitative analysis of bone fracture fixations.*

T40. Gurion Rivkin, MD, 2009 (co-advisor). *Evaluation of intertrochanteric femur fracture fixation using a finite element model.*

T41. Miriam Natanzon, MSc, 2009. *Nearly automatic liver vessels segmentation of CTA patient scans.*

T42. Noah Broide, MSc, 2009. *A graph-based approach to carotid arteries CTA patient-specific segmentation.*

T43. Yoav Taieb, MSc, 2009. *An iterative Bayesian method for liver tumors segmentation.*

T44. Ofer Elisassaf, MSc, 2009. *Nearly automatic liver contour segmentation.*

T45. Aviv Hurvitz, MSc, 2008. *Registration of a CT-like atlas to fluoroscopic X-ray images using intensity correspondences.*

T46. Yair Yarom, MSc, 2008. *Electromagnetic tracing in a fluoroscopy-based orthopaedic surgical environment.*

T47. Pavel Katz, MSc, 2006. *Liver tumor segmentation and volume computation with user-guided 3D active contours.*

T48. Yaron Ostrovsky-Berman, PhD, 2005. *Shape and position uncertainty in mechanical assemblies.*

T49. Ruby Shamir, MSc. 2005. *Miniature robot system for keyhole neurosurgery.*

T50. Moti Freiman, MSc. 2005. *Three-way registration for robot-assisted image-guided targeting for minimally invasive neurosurgery.*

T51. Ziv Yaniv, PhD. 2004. *Fluoroscopic X-ray image guidance for manual and robotic surgery.*

T52. Yoram Weil, MD, 2004 (co-advisor). *Percutaneous compression plate for the fixation of intertrochanteric fractures using a computerized fluoroscopic navigation system.*

T53. Dotan Knaan, MSc. 2003. *Intensity-based 2D/3D rigid registration of fluoroscopic X-ray/CT.*

T54. Harel Lyviatan, MSc. 2003. Rector Honors List. *Gradient-based 2D/3D rigid registration of fluoroscopic X-ray to CT.*

T55. Moti Melloul, MSc. 2001. *Segmentation of microcalcifications in X-ray mammograms using entropy thresholding.*

T56. Ofri Sadowsky, MSc. 2001. *Contact and image-based rigid registration in computer-assisted surgery: materials, methods, and experimental results.*

T57. Ziv Yaniv, MSc. 1998. *Fluoroscopic image processing and registration for computer-aided orthopaedic surgery.*

T58. Yoav Lasovsky, MSc. 1998. *Approximate motion planning in planar geometrically complex situations.*

T59. Lana Tockus, MSc. 1997. *A system for computer-aided fluoroscopic image-guided bone fracture surgery.*

External PhD theses committees (last 5 years)

1. *Alon Baram*, PhD, Tel-Aviv University (Prof. H. Greenspan), 2023.
2. *Adam Goldbraikh*, PhD, Technion (Dr. S. Laufer), 2023.
3. *Mahouclo Anicet Hounkanrin*, PhD, U. of Cape Town, South Africa (Prof. F. Nicolls), 2023.
4. *Isham Iqbal*, PhD, Imperial College, (Prof. F. Rodriguez y Baena), 2022.
5. *Benjamin Groisser*, PhD, Technion, Fac. Mech. Eng., (Profs. Wolf and Kimmel), 2022.
6. *Erez Hananael*, PhD, The Hebrew U., Fac. Veterinary Medicine, (Prof. M. Shamir), 2021.
7. *Fatemeh Taheri Dezaki*, PhD, U. of British Columbia, (Prof. P. Abolmaesumi), 2021.
8. *Amit Milstein*, PhD, Ben Gurion U., Dept. of Biomedical Eng. (Dr. I. Nisky), 2020.
9. *Danaiil Rodin*, PhD, Technion, Fac. of Computer Science (Prof. G. Elber), 2020.
10. *German Gonzalez Sanchez*, UNAM, Mexico, Fac. Engineering (Prof. B. Escalante), 2019.
11. *Fady Massarwi*, PhD, Technion, Fac. of Computer Science (Prof. G. Elber), 2018.
12. *Celine Fouard*, U. of Grenoble, Habilitation a Diriger des Recherches, 2018.
13. *Avraham Cohen*, PhD, Technion, Fac. of Mechanical Engineering (Prof. M. Shoham), 2018.
14. *Karin Correa Arana*. U. del Cauca, Fac. of Engineering (Prof. O. Vivas), Colombia, 2018.
15. *Nicolas Padoy*, U.of Strasbourg, France, Habilitation a Diriger des Recherches, 2018.

Publications — Leo Joskowicz

Books

1. *Sparse repeat CT scanning: registration, changes detection and needle tracking in Radon space*, **L. Joskowicz**, N. Shamul, Z. Adelman, G. Medan. Monograph, World Scientific Press, to appear 2024.

2. *Computational geometry with independent and dependent uncertainties.* R. Gitik and **L. Joskowicz**, Monograph, World Scientific Press, ISBN 978-9-811-25383-6, 2022.

3. *The configuration space method for kinematic design of mechanisms.* E. Sacks and **L. Joskowicz**. Monograph, The MIT Press, ISBN 978-0-262-01389-5, 2010.

Book chapters (B)

B1. Image-based surgery planning. C. Essert, **L. Joskowicz**. *Handbook of Medical Image Computing and Computer Aided Interventions*, K. Zhou, G. Fichtinger, S. Rueckert eds, Academic Press, pp 795-816, 2020.

B2. Computer Aided Orthopaedic Surgery: incremental shift or paradigm change? **L. Joskowicz** and Eric J. Hazan. *Intelligent Orthoapedics*, G. Zheng and W. Tan Eds, Springer Nature series in Advances in Experimental Medicine and Biology, pp 21-30, 2018.

B3. Future perspectives on statistical shape models in computer aided orthopaedic surgery. **L. Joskowicz**. Book chapter in: *Computer assisted orthopaedic surgery for hip and knee*, Sugano N. (Eds), Springer, pp 199-206, 2018.

B4. Automatic atlas-free multiorgan segmentation of contrast-enhanced CT scans. A. Spanier, **L. Joskowicz**. In *Cloud-Based Benchmarking of Medical Image Analysis*, A. Hanbury, H. Mller G. Langs editors, Springer, pp 145-164, 2017.

B5. Computer-aided orthopaedic surgery in skeletal trauma, M. Liebergall, **L. Joskowicz**, R. Mosheiff, *Rockwood and Green's Fractures in Adults, 6th Edition*, R. Bucholz and J. Heckman editors, Lippincott Williams and Wilkins, Vol 1, pp 739–770, 2006. Revised 7th Ed., 2009; 8th Ed. pp 575–607, 2015.

B6. Modeling and simulation. **L. Joskowicz**. In *Intraoperative Imaging and Image-Guided Therapy*, F.A Jolesz editor, Springer Science pp 49-62, 2014.

B7. Computer-integrated surgery and medical robotics, R.H. Taylor and **L. Joskowicz**, *Standard Handbook of Biomedical Engineering and Design*, 1st Edition, M. Kutz, Editor, McGraw-Hill Professional, pp. 29.1-29.35, ISBN: 0071356371, 2002. Revised 2nd Edition, 2009.

B8. Principles of computer-aided surgery in trauma surgery, Y. Weill, **L. Joskowicz**, R. Mosheiff, M. Liebergall, *Navigation and minimally invasive surgery in orthopaedic surgery*, Stiehl, Konermann, el al, Springer Verlag, pp 484-494, 2006.

B9. Computer-assisted image-guided intramedullary nailing surgery of femoral fractures (in French), **L. Joskowicz** and E. Hazan, *Monographie des Conferences d'Enseignement de la SOFTCOT*, P. Merloz Editor, Elsevier, Vol. 80: pp. 156-167, 2003.

B10. Kinematic synthesis, M. McCarthy and **L. Joskowicz**, in *Formal Engineering Design Synthesis*, E.K. Antonsson and J. Cagan editors, Cambridge University Press, pp. 321-362, 2001.

Refereed journal papers (J)

J1. Automatic quantification of normal brain gyrification patterns and changes in fetuses with polymicrogyria and lissencephaly based on MRI. B. Yehuda, A. Rabinowich, D. Link-Sourani, N. Avisdris, O. Ben-Zvi, B. Specktor-Fadida, **L. Joskowicz**, L. Ben-Sira, E. Miller, D. Ben Bashat. *American J. of Neuroradiology* 44(12):1432-1439, 2023.

J2. Deep learning-based segmentation of whole-body fetal MRI: assessing performance, repeatability and reproducibility. B. Specktor-Fadida, D. Link Sourani, A. Rabinovich, E. Miller, N. Avisdris, L. Ben Sira, L. Hiersch, **L. Joskowicz**, D. Ben Bashat, *European Radiology*, online Sept 13, 2023.

J3. Reduced adipose tissue in growth-restricted fetuses using quantitative analysis of magnetic resonance images. A. Rabinowich, N. Avisdris, A. Zilberman, D. Link-Sourani, S. Lazar, J. Herzlich, B. Specktor-Fadida, **L. Joskowicz**, G. Malinger, L. Ben Sira, D. Ben Bashat. *European Radiology* 23(12):9194-9202, 2023.

J4. Improved differentiation between hypo/hypertelorism and normal fetuses based on MRI using automatic ocular biometric measurements, ocular ratios, and machine learning multiparametric classification. N. Avisdris, D. Link-Sourani, L. Ben-Sira, **L. Joskowicz**, G. Malinger, S. Yagel, E. Miller, D. Ben Bashat. *European Radiology* 33(1):54-63, 2023.

J5. Fetal brain tissue annotation and segmentation challenge results. K. Payette, Li HB, **L. Joskowicz** and 25 authors. *Medical Image Analysis* 88, 102680, 2023.

J6. Follow-up of liver metastases: a comparison of deep learning and RECIST 1.1 **L. Joskowicz**, A. Szeskin, S. Rochman, A. Dodi, R. Lederman, H. Fruchtman-Brot, Y. Azraq, J. Sosna. *European Radiology*, online July 22, 2023.

J7. Graph-based automatic detection and classification of lesion changes in pairs of CT studies for oncology follow-up. S. Rochman, A. Szeskin, R. Lederman, J. Sosna, **L. Joskowicz**. *Int. J. of Computer Aided Radiology and Surgery*, online Aug 4, 2023.

J8. Liver lesion changes analysis in longitudinal CECT scans by simultaneous deep learning voxel classification with SimU-Net. A. Szeskin, S. Rochman, R. Lederman, J. Sosna, **L. Joskowicz**. *Medical Image Analysis* 83:102675, 2023.

J9. The liver tumor segmentation benchmark (LiTS). Biblic P, Christ P, **L. Joskowicz** and 50 authors, *Medical Image Analysis* 84:12608, 2023.

J10. MC3DU-Net: a multisequence cascaded pipeline for the detection and segmentation of pancreatic cysts in MRI scans. N. Mazor, R. Lederman, J. Sosna, **L. Joskowicz**. *Int. J. of Computer Aided Radiology and Surgery*, online Oct 5, 2023.

J11. Real-time influence of intracellular acidification on LDH and PDH activities in the perfused mouse heart. D. Shaul, N. Lev-Cohain, G. Sapir, J. Sosna, JM. Gomori, **L. Joskowicz**, R. Katz-Brull. *NMR in Biomedicine*, 36(10):e4993, 2023.

J12. Radial metaphyseal fractures in wrist radiographs: a surgical decision support method. A. Suna, A. Davidson, Y. Weil, **L. Joskowicz**. *Int. J. of Computer Aided Radiology and Surgery*, online, Jul 15, 2023.

J13. Automated quantification of glenoid bone loss in CT scans for shoulder dislocation surgery planning. A. Haimi, O. Safran, S. Beyth, **L. Joskowicz**. *Int. J. of Computer Aided Radiology and Surgery*, online July 14, 2023.

J14. Automated computation of radiographic parameters of distal radial metaphyseal fractures in forearm X-rays. A. Suna, A. Davidson, Y. Weil, **L. Joskowicz**, *Int. J. of Computer Assisted Radiology and Surgery*, online April 25, 2023.

J15. A review of advances in image-guided orthopedic surgery. X. Fan, Q. Zhu, P. Tu, **L. Joskowicz**, X. Chen. *Physics in Medicine and Biology* 68(2):02TR01, 2023.

J16. A multi-view interactive virtual-physical registration method for mixed reality based surgical navigation in pelvic and acetabular fracture fixation. P. Tu, H. Wang, **L. Joskowicz**, X. Chen. *Int. J. of Computer Assisted Radiology and Surgery* 18:17151724, 2023.

J17. Two-stage structure-focused contrastive learning for automatic identification and localization of complex pelvic fractures. B. Zeng, H. Wang, J. Xu, P. Tu, **L. Joskowicz**, X. Chen. *IEEE Transactions on Medical Imaging* 42(9):2751-2762, 2023.

J18. Verification, evaluation, and validation: which, how and why. R. Eagleson, **L. Joskowicz**. *J. Imaging* 9(2):10-20, 2023.

J19. Image-based planning of electric neurological treatments. R.R, Shamir, **L. Joskowicz**, H. Bergman. *Frontiers in Human Neuroscience*, Brain Imaging and Stimulation 16, 2023.

J20. Contribution of information about acute and geriatric characteristics to decisions about life-sustaining treatment for old patients in intensive care. M. Beil, P.V. van Heerden, D.W. de Lange, W. Szczeklik, S. Leaver, B. Guidet, H. Flaatten, C. Jung, S. Sviri, **L. Joskowicz**. *BMC Medical Informatics and Decision Making* 23(1):1-9, 2023.

J21. The role of clinical phenotypes for decisions to limit life-sustaining treatment for very old patients in the ICU. O. Mousai, L. Tafoureau, T. Yovell, H. Flaatten, B. Guidet, C. Jung, D. de Lange, S. Leaver, W. Szczeklik, J. Fjolner, A. Nachshon, P.V. van Heerden, L. Joskowicz, M. Beil, G. Hyams, S. Sviri. *Annals of Intensive Care* 13(1):1-8, 2023.

J22. Half-plane point retrieval queries with independent and dependent geometric uncertainties. R. Gitik, **L. Joskowicz**. *Computational Geometry: Theory and Applications* 115:102121, 2023.

J23. Clustering analysis of geriatric and acute characteristics in a cohort of very old patients on admission to ICU. O Mousai, L Tafoureau, T Yovell, H Flaatten, B Guidet, C Jung, **L. Joskowicz**, M. Beil, G. Hymans, S. Sviri. *Intensive Care Medicine* 48(12):1726-1735, 2022.

J24. Time-dependent uncertainty of critical care transitions in very old patients - lessons for time-limited trials. M. Beil, H. Flaaten, B. Guidet, **L. Joskowicz**, C. Jung, D. Lange, S. Leaver, J. Fjlner, W. Szczeklik, S. Sviri, P.V. Van Heerden. *J. of Critical Care* 71:154067, 2022.

J25. Computer-generated radiographic measurements of distal radius fractures: does it help with decision making? A. Davidson, G. Feldman, R. Mosheiff, A. Suna, **L. Joskowicz**, Y.A. Weil. *J. of Hand Surgery*, ISSN 0363-5023, 2022.

J26. Geographic atrophy area measurement: comparison between fundus autofluorescence and OCT. O. Shmueli, I. Benhamou, Y. Shwartz, **L. Joskowicz**, J. Levy. *Investigative Ophthalmology and Visual Science* 63(7):3321F0130-3321F0130, 2022.

J27. Progression of cRORA (Complete RPE and Outer Retinal Atrophy) in dry Age-Related Macular Degeneration measured using SD-OCT O. Shmueli, R. Yehuda, A. Szeskin, **L. Joskowicz**, J.Levy. *Translational Vision Science and Technology* 11(1), Article 19, 2022.

J28. Voronoi diagram and Delaunay triangulation with independent and dependent geometric uncertainties. R. Gitik, **L. Joskowicz**. *Int. J. Computational Geometry and Applications* 31(2):75-121, 2021.

J29. A method for change detection in sparse repeat CT scans with non-rigid deformations. N Shamul, **L. Joskowicz**. *J. X-Ray Science and Technology* 29(6): 987-1007, 2021.

J30. cRORA progression and its baseline predicting factors. O. Shmueli, R. Yehuda, A. Szeskin, **L. Joskowicz**, J. Levy. *Investigative Ophthalmology and Visual Science* 62(8):1880-88, 2021.

J31. A column-based deep learning method for the detection and quantification of atrophy associated with AMD in OCT scans. A. Szeskin, R. Yehuda, O. Shmueli, J. Levy, **L. Joskowicz**. *Medical Image Analysis* 72:102130, 2021.

J32. Euclidean minimum spanning trees with independent and dependent geometric uncertainties. R. Gitik, O Bartal, **L Joskowicz**. *Computational Geometry: Theory and Applications* 96:101744, 2021.

J33. Automatic linear measurements of the fetal brain on MRI scans with deep neural networks. N. Avisdris, B. Yehuda, O. Ben Zvi, D. Link Sourani, L. Ben Sira, **L. Joskowicz**, D. Ben Bashat. *Int. J. of Computer Aided Radiology and Surgery* 6(9):1481-1492, 2021.

J34. Parotid salivary ductal system segmentation and modeling in Sialo-CBCT scans. O. Shauly, **L. Joskowicz**, E.C. Istoyler, C. Nadler. *Computer Methods in Biomechanics and Biomedical Engineering: Imaging and Visualization* 9(5):488-499, 2021.

J35. Deformable registration and region-of-interest image reconstruction in sparse CT repeat CT scanning. Z. Adelman and **L. Joskowicz**, *J. X-Ray Science and Technology* 29(1):1-20, 2020.

J36. Automatic change detection in sparse CT scanning. N. Shamul and **L. Joskowicz**, *IEEE Trans. on Medical Imaging* 39(1):48-61, 2020.

J37. GPU-based 3D iceball modeling for fast cryoablation simulation and planning. E. Golkar, P.P. Rao, **L. Joskowicz**, A. Gangi, C. Essert. *Int. J. Comp. Aided Radiology and Surgery* 14(9):1577-1588, 2019.

J38. Automatic detection and diagnosis of sacroiliitis in CT scans as incidental findings. Y. Shenkman, B. Qutteineh, **L. Joskowicz**, A. Szeskin, Y. Azraq, A. Mayer, I. Eshed. *Medical Image Analysis* 97:165-175, 2019.

J39. Flexible needle and patient tracking using fractional scanning for reduced dose in interventional CT procedures. G. Medan, **L. Joskowicz**. *Int. J. Comp. Radiology and Surgery* 14(6):1039–1047, 2019.

J40. A comparison of different scoring terminations rules for visual acuity testing: from a computer simulation to a clinical study. M. Mimouni, RR. Shamir, ADN. Cohen, R. El-Yaniv, MJ. Cohen, **L. Joskowicz**, E.Z. Blumenthal. *Current Eye Research* 44(7):790-795, 2019.

J41. The Liver Tumor Segmentation Benchmark (LiTS). P. Bilic, P.F Christ, **L. Joskowicz**, B. Menze (59 authors). arXiv:1901.04056v1 [cs.CV], 13 Jan 2019.

J42. The effect of motion correction interpolation on quantitative T1 mapping with MRI. A. Nachmani, R. Schurr, **L. Joskowicz**, A.A. Mezer. *Medical Image Analysis* 52:119-127,2019.

J43. Inter-observer variability of manual contour delineation of structures in CT. **L. Joskowicz**, D. Cohen, N. Caplan, J. Sosna. *European Radiology* 29(3):1391-1399, 2019.

J44. Automatic segmentation variability estimation with segmentation priors. **L. Joskowicz**, D. Cohen, N. Caplan, J. Sosna. *Medical Image Analysis* 50:54-64, 2018.

J45. Patient-specific Convolutional Neural Networks for robust automatic liver tumor delineation in longitudinal CT studies. R. Vivanti, **L. Joskowicz**, A. Ephrat, N. Lev-Cohain, J. Sosna. *Medical and Biological Engineering and Computing* 56(9):1699-1713, 2018.

J46. A fully automatic end-to-end method for content-based image retrieval of CT scans with similar liver lesion annotations. A. Spanier, N. Caplan, J. Sosna B. Acar, **L. Joskowicz**. *Int. J. of Computer Aided Surgery and Radiology* 13(1):165-174, 2018.

J47. Computer-based radiological longitudinal evaluation of meningiomas following stereotactic radiosurgery. E. Ben Shimol, **L. Joskowicz**, R. Eliahou, Y. Shoshan. *Int. J. of Computer Aided Surgery and Radiology* 13(2):215–228, 2018.

J48. RobustSeed: seed-based segmentation improvement by optimization. A. Kronman, **L. Joskowicz**. *Computer Methods in Biomechanics and Biomedical Engineering: Imaging & Visualization Medical & Biological Engineering & Computing* 6(5):564–572, 2018.

J49. Automatic volumetric measurements of the fetal brain based on MRI: new reference data. D. Link, M.B. Braginsky, **L. Joskowicz**, L. Ben Sira, S. Harel, A. Many, R. Tarrasch, G. Malinger, M. Artzi, K. Cassandra, E. Miller, D. Ben Bashat. *Fetal Diagnosis and Therapy* 43 (2), 113–122, 2018.

J50. Radon space dose optimization in repeat CT scanning. N. Shamul, **L. Joskowicz**. *IEEE Trans. Medical Imaging* 36(12):2436-2448, 2017.

J51. Reduced-dose imageless needle and patient tracking in interventional CT procedures. G. Medan, **L. Joskowicz**. *IEEE Trans. Medical Imaging* 36(12):2449-2456, 2017.

J52. Automatic detection of new tumors and tumor burden evaluation in longitudinal liver CT scan studies. R. Vivanti, A. Szeskin, **L. Joskowicz**, N. Lev-Cohain, J. Sosna. *Int. J. of Computer-Aided Radiology and Sugery* 12(11):1945-1957, 2017.

J53. Accuracy of computer-aided techniques in orthopaedic surgery: how can it be defined, measured experimentally, and analyzed from a clinical perspective. O. Cartiaux, J.Y. Jenny, **L. Joskowicz**. *J. of Bone and Joint Surgery* 99-A(8):e39(1-8), 2017.

J54. Computer aided surgery meets predictive preventive and personalized medicine. **L. Joskowicz**, *EPMA Journal*, Journal of the European Association of Predictive, Preventive and Personalized Medicine 8(1):1-4, 2017.

J55. A new method for the automatic retrieval of medical cases based on the RadLex ontology. A.B. Spanier, D. Cohen, **L. Joskowicz**. *Int. J. of Computer Aided Radiology and Surgery* 12:471484, 2017.

J56. Sparse 3D Radon space rigid registration of CT scans: method and validation study. G. Medan, N. Shamul, **L. Joskowicz**. *IEEE Trans. Medical Imaging* 36(2):497-506, 2017.

J57. Three-dimensional analysis of acute scaphoid fracture displacement. Y. Schwarcz, Y. Schwarcz, E. Peleg, **L. Joskowicz**, R. Wollstein, S, Luria. *J. of Bone and Joint Surgery* 99:141-9, 2017.

J58. Current state of computer navigation and robotics in unicompartmental and total knee arthroplasty: a systematic review with meta-analysis, J.P. van der List, H. Chawla, **L. Joskowicz**, A.D. Pearle. *Knee Surgery, Sports Traumatology, Arthroscopy*, 24(11):3482-3495, 2016.

J59. Computer Aided Orthopaedic Surgery: incremental shift or paradigm change? **L. Joskowicz**, E. Hazan. *Medical Image Analysis*, 20th Anniversary Issue, 33:84-90, 2016.

J60. The influence of varying the number of characters per row on the accuracy and reproducibility of the ETDRS visual acuity chart. R.R. Shamir, Y.G. Friedman, **L. Joskowicz**, E.Z. Blumenthal. *Graefe's Archive for Clinical and Experimental Ophthalmology* 254(5):971-6, 2016.

J61. Snellen and ETDRS charts compared using a computer simulation. R.R. Shamir, Y. Friedman, **L. Joskowicz**, M. Mimouni, E.Z Blumenthal. *Int. J. Ophthalmology* 9(1):119-23, 2016.

J62. Detection and correction of volumetric medical image segmentation errors by 3D-ray casting and Laplace deformation. A. Kronman and **L. Joskowicz**, *Int. J. Computer Aided Radiology and Surgery*, 11(3): 369-380, 2016.

J63. The effect of chemotherapy on optic pathway gliomas and their sub components: a volumetric MR analysis study. B. Shofty, L. Weizman, **L. Joskowicz**, L. Pratt, R. Dvir, L. Ravid, D. Ben Bashat, M. Ilon, A. Kessler, *Pediatric Blood and Cancer*, 62(8):1353-9, 2015.

J64. Automatic lung tumor segmentation with leaks removal in follow-up CT studies. R. Vivanti, O. Karaaslan, **L. Joskowicz**, J. Sosna. *Int. J. Computer Aided Radiology and Surgery*, 10(9):1505-14, 2015.

J65. Haptic computer-assisted patient specific preoperative planning for orthopaedic fracture surgery. I. Kovler, **L. Joskowicz**, A. Kronman, Y. Weill, J. Salavarrieta. *Int. J. Computer Aided Radiology and Surgery* 10(10):1535-1546, 2015.

J66. Tumor burden evaluation in NF1 patients with plexiform neurofibromas in the daily clinical practice. L. Pratt, D. Helfer, L. Weizman, B. Shofty, S. Constantini, **L. Joskowicz**, D. Ben Bashat, L. Ben-Sira. *Acta Neurochirurgica* 157(5):855–861, 2015.

J67. The role of automatic computer-aided surgical trajectory planning in improving the expected safety of stereotactic neurosurgery. M. Troppe, R.R Shamir, **L. Joskowicz**, Z. Medress, G. Rosenthal, A. Myer, N. Levin, A. Bick, Y. Shoshan. *Int. J. of Computer-Aided Radiology and Sugery* 10(7):1127-1140, 2015.

J68. MR assisted vascular and volumetric imaging (MAVVI) for objective findings in schizophrenia. A.B. Spanier, **L. Joskowicz**, D. Israeli. *J. of Molecular Neuroscience* 53:119-125, 2014.

J69. Coronal tibiofemoral subluxation: a new measurement method. S. Khamaisy, H.A. Zuiderbaan, R. Thein, D.H. Nawabi, **L. Joskowicz**, A.D. Pearle. *The Knee* 21(6):1069-71, 2014.

J70. Validation of a stereo camera system to quantify brain deformation due to breathing and pulsatility. C. Faria, E. De Momi, O. Sadowsky, E. Bicho, G. Ferrigno, **L. Joskowicz**, M. Shoham. *Medical Physics* 41:113502, 2014.

J71. Segmentation and follow-up of multi-component low-grade gliomas in longitudinal MRI studies. L. Weizman, D. Ben Bashat, **L. Joskowicz**, D. Rubin, K.W. Yeom, S. Constantini, B. Shofty L. Ben-Sira. *Medical Physics* 41:052303, 2014.

J72. PNist: interactive volumetric measurements of plexiform neurofibromas in MRI scans. L. Weizman, D. Helfer, D. Ben Bashat, L. Pratt, **L. Joskowicz**, S. Constantini, B. Shofty, L. Ben-Sira. *Int. J. of Computer-Aided Radiology and Sugery* 9(4):683-693,2014.

J73. Quantitative functional MRI biomarkers improved early detection of colorectal liver metastases. Y. Edrei, M. Freiman, M. Sklair, G. Tsarfati, E. Gross, **L. Joskowicz**, R. Abramovitch. *Journal of Magnetic Resonance Imaging* 39(5):1246-53, 2014.

J74. Uncertain lines and circles with dependencies. Y. Myers and **L. Joskowicz**. *Computer-Aided Design* 45:556-561, 2013.

J75. Insights into volumetric and sub segmentation long-term analysis of treated OPG patients receiving chemotherapy. B. Shofty, L. Weizmann, **L. Joskowicz**, A. Kesler, D. Ben-Bashat, M. Yalon, R. Dvir, S. Freedman, J. Sigal, J. Roth, L. Ben-Sira. *Neuro-Oncology* 14:71-73, 2012.

J76. Paedriatic supra-condylar fractures of the humerus computer assisted finite element analysis of fixation configuration. R. Lamdan, N. Simanovsky,**L. Joskowicz**, M. Liebergall, A. Gefen, E. Peleg. *J. of Bone and Joint Surgery, British Volume* Supplement XLIV 94:37-42, 2012.

J77. Point distance and orthogonal range problems with dependent geometic uncertainties. Y. Myers, **L. Joskowicz**, *Int. J. Computational Geometry and Applications* 22(6):517-524, 2012.

J78. Interactive segmentation of Plexiform Neurofibroma tissue classification: method and preliminary performance evaluation. L. Weizman. L. Hoch, L. Ben Bashat, **L. Joskowicz**, L. Pratt, S. Constantini, L. Ben Sira. *Medical and Biological Engineering and Computing* 50(8):877-884, 2012.

J79. Can a partial volume edge effect reduction algorithm improve the repeatability of subject specific finite element models of femurs obtained from CT data? E. Peleg, R. Hornblum, M. Beek, **L. Joskowicz**, M. Liebergall, R. Mosheiff,C. Whyne. *Computer Methods in Biomechanics and Biomedical Engineering* 17(3):204-209, 2012.

J80. Microelectrode recording duration and density effect: the detection accuray of subtalamic nucleus in deep brain stimulation surgeries. R.R. Shamir, A. Zaidel, **L. Joskowicz**, H. Bergan, Z. Israel. *Stereotactic and Functional Neurosurgery* 90(5):325-335, 2012.

J81. Carotid vasculature modeling from patient CT amgiography studies for interventional procedures simulation. M. Freiman, **L. Joskowicz**, N. Broide, M. Natanzon, E. Nammer, O. Shilon, L. Weizman, J. Sosna, *Int. J. of Computer-Aided Radiology and Surgery* 7(2):799-812, 2012.

J82. Reduced risk trajectory planning in image-guided keyhole neurosurgery: method and experimental results. R. Shamir, **L. Joskowicz**, I. Tamir, E. Dabool, L. Pertman, A. Ben-Ami, Y. Shoshan. *Medical Physics* 39:2885-2896, 2012.

J83. Fiducials optimization for minimal target registration error in image-guided neurosurgery, R. Shamir, **L. Joskowicz**, Y. Shoshan. *IEEE Trans. on Medical Imaging* 31(3):725-737, 2012.

J84. Automatic segmentation and classification of optic pathway gliomas in MRI. L. Weizman, **L. Joskowicz**, L. Ben-Sira, R. Precel, D. Ben-Bashat. *Medical Image Analysis* 16(1):177-188, 2012.

J85. fMRI-based hierarchical SVM model for grading of liver fibrosis. Y. Sela, M. Freiman, Y. Edrei, O. Pappo, **L. Joskowicz**, R. Abramovitch. *IEEE Transactions on Biomedical Engineering* 58(9):2574-2581, 2011.

J86. Evaluation framework for carotid bifurcation lumen segmentation and stenosis grading. K. Hameeteman, M. Zuluaga, M. Freiman, **L. Joskowicz** et al., *Medical Image Analysis* 15(4):477-488, 2011.

J87. MRI internal classification of Optic Pathway Gliomas: clinical implementation of a novel algorithm. B. Shofty, L. Weizman, **L. Joskowicz**, S. Constantini, A. Kesler, D. Ben-Bashat, M. Yalon, R. Dvir, S. Freedman, J. Roth, L. Ben-Sira. *Child's Nervous System* 27(8):1265–1272, 2011.

J88. Assessment of two 3D fluoroscopic systems for articular fracture reduction: a cadaver study. Y. Weil, M. Liebergall, R. Mosheiff, S.B Singer, **L. Joskowicz**, A. Khoury. *Int. J. of Computer Assisted Radiology and Surgery* 6(5):685–692, 2011.

J89. Liver tumors segmentation from CTA images using voxels classification and affinity constraint propagation. M. Freiman, O. Cooper, D. Lishinski, **L. Joskowicz**. *Int. J. of Computer Assisted Radiology and Surgery* 6(2):247-255, 2011.

J90. Target and localization accuracy in keyhole image-guided keyhole neurosurgery. R. Shamir, **L. Joskowicz**, Y. Shoshan. *Neurosurgery* 68(1):95-102, 2011.

J91. Patient specific quantitative analysis of fracture fixation in the proximal femur imnplementing principal strain ratios. Method and experimental validation. E. Peleg, M. Beek, **L. Joskowicz**, M. Liebergall, R. Mosheiff, C. Whyne. *J. of Biomechanics* 43(14):2684-2688, 2011.

J92. Geometrical analysis of registration errors in point-based rigid-body registration using invariants. R. Shamir and **L. Joskowicz**. *Medical Image Analysis* 15(1):85–95, 2011.

J93. Computer-assisted orthopaedic fracture reduction: clinical evaluation of a software prototype. A. Khoury, S. Beith, R. Mosheiff, **L. Joskowicz**, J. Finkelstein, M. Liebergall, *Current Orthopaedic Practice* 22(1):109-115, 2011.

J94. A curvelet-based patient-specific prior for accurate multi-modal brain image rigid registration. M. Safran, M. Freiman, **L. Joskowicz**, M. Werman. *Medical Image Analysis* 15(1):125-132, 2011.

J95. A novel field-of-view augmentation wand for C-arm CT-like fluoroscopy-based intraoperative navigation. E. Peleg, M. Liebergall, **L. Joskowicz**, Y. Weil, R. Mosheiff. *J. of Orthopaedic Trauma* 24(7):452-456, 2010.

J96. Acetabular orientation variability and symmetry based on CT scans of adults. O. Lubovsky, E. Peleg, **L. Joskowicz**, M. Liebergall, A. Khoury. *Int. J. of Computer-Aided Radiology and Surgery* 5(5):449–454, 2010.

J97. Efficient representation and computation of geometric uncertainty: the linear parametric model. **L. Joskowicz**, Y. Ostrovsky-Berman, Y. Myers *Precision Engineering* 34:2–6, 2010.

J98. Surface-based facial scan registration in neuronavigation procedures: a clinical study, R. Shamir, M. Frieman, **L. Joskowicz**, S. Spektor, Y. Shoshan. *J. of Neurosurgery* 111(6):1201–6, 2009.

J99. Localization and registration accuracy in image-guided neurosurgery: a clinical study. R. Shamir, **L. Joskowicz**, S. Spektor, Y. Shoshan. *Int. J. of Computer Assisted Radiology and Surgery* 4(1):45–52, 2009.

J100. Navigated total knee replacement – a comprehensive clinical state of the art study, I. Ilsar, **Leo Joskowicz**, L. Kandel, M. Liebergall. *British J. of Bone and Joint Surgery* Suppl III, 90-B:514–19, 2008.

J101. Registration of a CT-like atlas to fluoroscopic X-ray images using intensity correspondences, A. Hurvitz and **L. Joskowicz**, *Int. J. of Computer Assisted Radiology and Surgery* 3(6):493-504, 2008.

J102. An iterative Bayesian approach for nearly automatic liver segmentation: algorithm and validation, M. Freiman, Y. Taieb, O. Eliassaf, **L. Joskowicz**, Y. Azraq, and J. Sosna. *Int. J. of Computer Assisted Radiology and Surgery* 3(5):439–446, 2008.

J103. A CT-based high-order finite element analysis of the human proximal femur compared to in-vitro experiments, Z. Yosibash, R. Padan, **L. Joskowicz**, C. Milgrom, *ASME J. of Biomechanical Engineering*, Vol. 129:297–309, 2007.

J104. Advances in image-guided targeting for keyhole neurosurgery: a survey paper, **L. Joskowicz**, *Touch Briefings Reports*, Future Directions in Surgery 2006, Vol. II:1–5, 2007.

J105. Robotic assisted spinal surgery: from concept to clinical practice. M. Shoham, I.H. Lieberman, E.C. Benzel, E. Zehavi, B. Zilberstein, M. Roffman, A. Bruskin, A. Fridlander, **L. Joskowicz**, S. Brink-Danan, N. Knoller, *Computer-Aided Surgery* 12(2):105-115, 2007.

J106. Fracture table-mounted vs. bone-mounted dynamic reference frame tracking accuracy using computer-assisted orthopaedic surgery: a comparative study I. Ilsar, Y. Weill, R. Mosheiff, **L. Joskowicz**, A. Peyser, M. Liebergall. *Computer-Aided Surgery* 12(2):125–130, 2007.

J107. Image-guided system with miniature robot for precise positioning and targeting in keyhole neurosurgery, **L. Joskowicz** , M. Freiman, R. Shamir, M. Shoham, E. Zehavi, Y. Shoshan *Computer-Aided Surgery* 11(4):181–193, 2006.

J108. Relative position computation for assembly planning with toleranced parts, Y. Ostrovsky-Berman, **L. Joskowicz**, *Int. Journal of Robotics Research* 25(2):147–170, 2006.

J109. Precise robot-assisted guide positioning for distal locking of intramedullary nails, Z. Yaniv and **L. Joskowicz**, *IEEE Trans. on Medical Imaging* 24(5):624–635, 2005.

J110. Tolerance envelopes of planar mechanical parts with parametric tolerances, Yaron Ostrovsky-Berman and **L. Joskowicz**, *Computer-Aided Design* 37(5):531–544, 2005.

J111. Long bone panoramas from fluoroscopic X-ray images, Z. Yaniv and **L. Joskowicz**, *IEEE Trans. on Medical Imaging* 23(1):23–35, 2004.

J112. Computer-assisted image-guided intramedullary nailing of femoral shaft fractures, E. Hazan and **L. Joskowicz**, *Techniques in Orthopaedics* 18(2):191–201, 2003.

J113. Bone-mounted miniature robot for surgical procedures: concept and clinical applications, M. Shoham, M. Burman, E. Zehavi, **L. Joskowicz**, E. Batkilin, and Y. Kunicher, *IEEE Trans. on Robotics and Automation* 19(5):893–901, 2003.

J114. Gradient-based 2D/3D rigid registration of fluoroscopic X-ray to CT, H. Livyatan, Z. Yaniv, **L. Joskowicz**, *IEEE Trans. on Medical Imaging* 22(11):1395–1406, 2003.

J115. Kinematic analysis of spatial fixed-axes higher pairs using configuration spaces, K-J. Kim, E.Sacks, **L. Joskowicz**, *Computer-Aided Design* 35(3):279-291, 2003.

J116. Computer-based periaxial rotation measurement for aligning fractured femur fragments from CT: a feasibility study, O. Ron, **L. Joskowicz**, A. Simkin, and C. Milgrom, *Computer-Aided Surgery* 7(6):332-341, 2002.

J117. Comparative in-vitro study of contact and image-based rigid registration for computer-aided surgery, O. Sadowsky, Z. Yaniv, **L. Joskowicz**, *Computer-Aided Surgery* 7(4):223-236, 2002.

J118. Computers in imaging and guided surgery, **L. Joskowicz** and R.H. Taylor, *Computing in Science and Engineering* 3(5):65-72, 2001.

J119. Efficient linear unboundedness testing: algorithm and applications to assembly planning, F. Schwartzer, **L. Joskowicz** A. Schweikard. *Int. J. Robotics Research* 19(9):817-834, 2000.

J120. Visualizing three-dimensional configuration spaces for mechanical design, E. Sacks, C. Pisula, **L. Joskowicz**, *IEEE Computer Graphics and Applications*, pp. 50-53, Sept. 1999.

J121. Understanding mechanical motion: from images to behaviors, T. Dar, **L. Joskowicz**, E. Rivlin, *Artificial Intelligence* 112:147-179, 1999.

J122. Computer-aided mechanical assembly design using configuration spaces, **L. Joskowicz** and E. Sacks, *Computing in Science and Engineering* 1(6):14-21, 1999.

J123. Motion planning in crowded planar environments, **L. Joskowicz** and Y. Lasovsky, *Robotica* 17(1):365-371, 1999.

J124. FRACAS: A system for computer-aided image-guided long bone fracture surgery, **L. Joskowicz**, C. Milgrom, A. Simkin, L. Tockus, Z. Yaniv, *Computer-Aided Surgery* 3(6):271-288, 1999.

J125. Solving difference constraints incrementally, G. Ramalingam, J. Song, **L. Joskowicz**, and R.E. Miller, *Algorithmica* 23(3):261-275, 1999.

J126. Computer integrated revision total hip replacement surgery R.H. Taylor, **L. Joskowicz**, B. Williamson *et al*, *Medical Image Analysis* 1(2):1-19, 1999.

J127. Mesh simplification with smooth surface reconstruction, O. Volpin, A. Sheffer, M. Bercovier, **L. Joskowicz**, *Computer-Aided Design* 30(11):875-882, 1998.

J128. Parametric tolerance analysis of part contacts in general planar assemblies, E. Sacks and **L. Joskowicz**, *Computer-Aided Design* 30(9):707-714, 1998.

J129. Dynamical simulation of planar assemblies with changing contacts using configuration spaces, E. Sacks and **L. Joskowicz**, *ASME Journal of Mechanical Design* 120:181-189, 1998.

J130. Parametric kinematic tolerance analysis of planar mechanisms, E. Sacks and **L. Joskowicz**, *Computer-Aided Design* 29(5):333-342, 1997.

J131. Kinematic tolerance analysis, **L. Joskowicz**, E. Sacks and V. Srinivasan, *Computer-Aided Design* 29(2):147-157, 1997.

J132. An overview of computer-assisted surgery research at IBM, R.H. Taylor, J. Funda, **L. Joskowicz**, A. Kalvin, S. Gomory , A. Gueziec, and L. Brown, *IBM Journal of Research and Development* 40(2):163-184, 1996.

J133. Efficient compositional modeling for generating causal explanations, P. Nayak and **L. Joskowicz**, *Artificial Intelligence* 83(2):193-227, 1996.

J134. Interference-free insertion of a solid body into a cavity: an algorithm and a medical application, **L. Joskowicz**, R.H. Taylor, *Int. J. of Robotics Research* 15(3):211-229, 1996.

J135. A representation language for mechanical behavior, **L. Joskowicz** and D. Neville, *Artificial Intelligence in Engineering* 10:109-116, 1996.

J136. Computational kinematic analysis of higher pairs with multiple contacts, E. Sacks and **L. Joskowicz**, *ASME Journal of Mechanical Design* 117:269-277, 1995.

J137. Medical robotics at IBM Research, R.H. Taylor, J. Funda, **L. Joskowicz**, A. Kalvin, S. Gomory, A. Gueziec, *Service Robot: An International Journal* 1(1):9-13, 1995.

J138. Automated modeling and kinematic simulation of mechanisms, E. Sacks and **L. Joskowicz**, *Computer-Aided Design* 25(2):107-118, 1993.

J139. Design from physical principles, **L. Joskowicz**, B. Williams, J. Cagan, *Artificial Intelligence Magazine* 14(1):86-90, 1993.

J140. A reply to prolegomena to any future qualitative physics, **L. Joskowicz**, *Computational Intelligence* 1(8):266-270, 1992.

J141. Artificial intelligence meets simulation, **L. Joskowicz**, *IEEE Expert* 6(1):73-74, 1991.

J142. Practical tools for reasoning about linear constraints T. Huynh, **L. Joskowicz**, C. Lassez, and J.L. Lassez, *Fundamenta Informaticae* 15(4):357-379, 1991.

J143. Computational Kinematics, **L. Joskowicz** and E. Sacks, *Artificial Intelligence* 51(1-3):381-416, 1991.

J144. Mechanism comparison and classification for design, **L. Joskowicz**, *Research in Engineering Design* 1(2):149-166, 1990.

J145. Reasoning about the kinematics of mechanical devices, **L. Joskowicz**, *Int. Journal of Artificial Intelligence in Engineering* 4(1):22-31, 1989.

Refereed conference papers

C1. Partial annotations for the segmentation of large structures with low annotation cost. B.S. Fadida, D.L. Sourani, L.B. Sira, E. Miller, D.B. Bashat, **L. Joskowicz**. *Proc. Workshop on Medical Image Learning with Limited and Noisy Data*, Springer, pp13-22, 2023.

C2. Test-time augmentation-based active learning and self-training for label-efficient segmentation. B. Specktor-Fadida, A. Levchakov, D. Schonberger, L. Ben-Sira, D. Ben Bashat, **L.Joskowicz**. *Proc. 27th Conf. Medical Image Computing and Computer Aided Interventions, Workshop Medical Image Learning with Limited Noisy Data*, MICCAI 2023, Springer 2023.

C3. Graph-theoretic automatic lesion tracking and detection of patterns of lesion changes in longitudinal CT studies. B. Di Veroli, R. Lederman, J. Sosna, **L. Joskowicz**. *Proc. 27th Conf. Medical Image Computing and Computer Aided Interventions* (MICCAI 2023), Springer, 2023.

C4. Test-time augmentation-based active learning and self-training for label-efficient segmentation. B. Specktor-Fadida, A. Levchakov, D. Schonberger, L. Ben-Sira, D. Ben Bashat, **L. Joskowicz**. *Proc. 27th Conf. Medical Image Computing and Computer Aided Interventions, Workshop Medical Image Learning with Limited Noisy Data* (MICCAI 2023), Springer 2023.

C5. Contour Dice loss for structures with fuzzy and complex boundaries in fetal MRI. B. Spektor Fadida, B. Yehuda, D. Sourani, L. Ben Sira, D. Ben Bashat, **L. Joskowicz**. *Proc. 26th Conf. on Medical Image Computing and Computer Aided Interventions – Workshop* (MICCAI 2022), Springer, 2022.

C6. Partial annotations for the segmentation of large structures with low annotation cost. B. Specktor Fadida, D. Link Sourani, L. Ben Sira, E. Miller, D. Ben Bashat, **L. Joskowicz**. *Proc. 26th Conf. on Medical Image Computing and Computer Aided Interventions – MILLLandD Workshop* (MICCAI 2022), Springer, 2022.

C7. Automatic fetal fat quantification from MRI. N. Avisdris, A. Rabinowich, D. Fridkin, A. Zilberman, S. Lazar,D. Link-Sourani, L. Ben Sira, **L. Joskowicz**, D. Ben Bashat. *Proc. 26th Conf. on Medical Image Computing and Computer Aided Interventions – PIPPL Workshop* (MICCAI 2022), Springer, 2022.

C8. BiometryNet: Landmark-based Fetal Biometry Estimation from Standard Ultrasound Planes. N. Avisdris, L. Joskowicz, B. Dromey, AL. David, D. M. Peebles, D. Stoyanov, D. Ben Bashat, S. Bano. *Proc. 25th Conf. on Medical Image Computing and Computer Aided Interventions* (MICCAI 2022), Springer, 2022.

C9. Fetal brain MRI measurements using a deep learning landmark network with reliability estimation. N. Avisdris, D. Link-Sourani, L. Ben Sira, E. Miller, D. Ben-Bashat, **L. Joskowicz**. *Proc. 24rd Conf. on Medical Image Computing and Computer Aided Interventions – PIPPL Workshop* (MICCAI 2021), Springer, 2021.

C10. A bootstrap self-training method for sequence transfer: state-of-the-art placenta segmentation in fetal MRI. B. Spektor-Fadida, S. Kveller, D. Link-Sourani, L. Ben Sira, E. Miller, D. Ben-Bashat, L. Joskowicz. *Proc. 24rd Conf. on Medical Image Computing and Computer Aided Interventions – PIPPL Workshop* (MICCAI 2021), Springer, 2021.

C11. Deep learning automatic fetal structure segmentation in MRI scans with very few annotated datasets. G. Dudovitch, D. Sourani, L. Ben Sira, E. Miller, D. Ben Bashat, **L. Joskowicz**. *Proc. 23rd Conf. on Medical Image Computing and Computer Aided Interventions* (MICCAI 2020), LNCS 12266, pp 1-10, Oct 2020.

C12. 3D modelling of the residual freezing for renal cryoablation simulation and prediction. C. Essert. P. Rao, A. Gangi, **L. Joskowicz**. *Proc 22nd Conf. on Medical Image Computing and Computer Aided Interventions* (MICCAI 2019), pp 209-217, 2019.

C13. Fast GPU computation of 3D isothermal volumes in the vicinity of major blood vessels for cryoablation simulation. E. Golkar, P. P. Rao, **L. Joskowicz**, A. Gangi, C. Essert. *Proc 21st Conf. on Medical Image Processing and Medical Image Computing* (MICCAI 2018), pp 230-237, 2018.

C14. Automatic classification of body parts X-ray images, M. Aboud, A.B. Spanier, L. Joskowicz. *Proc. of the CLEF Workshop*, pp. 43-52 2015.

C15. Medical case-based retrieval of patient records using the RadLex hierarchical lexicon. A.B. Spanier, **L. Joskowicz**. *Proc. VISCERAL Multimodal Retrieval in the Medical Domain Workshop*, H. Muller et al. Eds, Springer Lecture Notes in Computer Science LNCS 9059, pp 129-138, 2015.

C16. Automatic liver tumor segmentation using global and patient specific Convolutional Neural Networks in follow-up CT studies. R. Vivanti, A. Ephrat, **L. Joskowicz**, N. Lev-Cohain, J. Sosna. *Proc. Patch-Based Methods Workshop*, MICCAI 2015, Munich, Germany, 2015.

C17. 3D segmentation using perceptual computing. S. Shenzis, M. Samson, R. Vivanti, **L. Joskowicz**, J. Sosna. Proc. Interactive Medical Image Computation Workshop, MICCAI 2015, Munich, Germany, Oct 9, 2015.

C18. Schizophrenia patients' differentiation based on MR vascular perfusion and volumetric imaging. A.B. Spanier, **L. Joskowicz**, S. Moshel, D. Israeli. *Proc. SPIE Medical Imaging Conference*, Florida, USA, Feb 21-26, pp 94132Y-94132Y-7, 2015.

C19. Towards content-based image retrieval: from computer generated features to semantic descriptions of liver CT scans. A. Spanier, **L. Joskowicz**. *CLEF 2014 Working Notes, CEUR Workshop Proceedings* 1180:421427, 2014.

C20. Rule-based ventral cavity multi-organ automatic segmentation in CT scans. A. Spanier and **L. Joskowicz**, *Proc. Workshop on Medical Computer Vision Algorithms for Big Data, 17th Int. Conf. on Medical Image Computing and Computer-Assisted Intervention*, Boston, USA, 2014. *Lecture Notes in Computer Science* Vol 8848:1-8, 2014.

C21. Automatic lung tumor segmentation with leaks removal in follow-up CT studies. R. Vivanti, O. Karaaslan, **L. Joskowicz**, J. Sosna. *Proc. Workshop on Clinical Image-based Research in Medical Imaging, 17th Int. Conf. on Medical Image Computing and Computer-Assisted Intervention*, Boston, USA, Sept. 14, 2014.

C22. Fast MRI for repeated scans. L. Weizmann, **L. Joskowicz**, D. Ben-Bashat, *Proc. Workshop on Sparsity Techniques in Medical Imaging, 17th Int. Conf. on Medical Image Computing and Computer-Assisted Intervention*, Boston, USA, Sept. 14, 2014.

C23. Reduced-dose patient to baseline CT rigid registration in 3D Radon space. G. Medan, A. Kronman and **L. Joskowicz**. *Proc. 17th Int. Conf. on Medical Image Computing and Compuer-Assisted Intervention.* Lecture Notes in Computer Science, P. Goland et al. eds: MICCAI 2014, Part I, LNCS 8673, pp. 291298, 2014.

C24. Real-time modeling of intraoperative brain shift based on video tracking. I. Rasin, Z. Pekar, O. Sadowsky, A.E. Forte, S. Galvan, D. Dini, M. Shoham, **L. Joskowicz**. *Proc. 7th Hamlyn Symposium on Medical Robotics*, London, UK, Jul 13-14, 2004.

C25. Haptic interface for computer assisted patient-specific preoperative planning in orthopaedic fracture surgery. *Proc. 10th Asian Conf. on Computer Aided Surgery*, S5.1-5, Fukuoka, Japan, Jun 24-25, 2014.

C26. Euclidean minimum spanning tree with dependent uncertainties. O. Bar-Tal, **L. Joskowicz**. *Proc. 30th European Workshop on Computational Geometry*, March 2-5, Israel, 2014.

C27. Topological stability and convex hull with dependent uncertainties. **L. Joskowicz**, Y. Myers. *Proc. 30th European Workshop on Computational Geometry*, March 2-5, Israel, 2014.

C28. Image segmentation errors correction by mesh segmentation and deformation. A. Kronman and **L. Joskowicz**. *Proc. 16th Int. Conf. on Medical Image Computing and Computer-Assisted Intervention.* Lecture Notes in Computer Science, K. Mori et al. eds, Vol 8150(II):206-213, 2013.

C29. Brain surface tissue deformation tracking in craniotomies. R. Vivanti, O. Sadowsky, M. Shoham, **L. Joskowicz**. *Proc. 6th Hamlyn Symposium on Medical Robotics*, pp 35-40, June 22-25, London, UK, 2013.

C30. Fast Plexiform Neurofibromas semi-automatic tumor segmentation. L. Weizman, D. Helfer, L. Pratt, L. Ben Sira, D. Ben Bashat, **L. Joskowicz**, S. Constantini. *Proc. IEEE Int. Symp. on Biomedical Imaging*, TuAT12.1, Apr 7-12, San Francisco, USA, 2013.

C31. Automatic bone fracture reduction by fracture contact surface identification and registration. A. Kronman, **L. Joskowicz**. *Proc. IEEE 10th Int. Symp. on Biomedical Imaging*, MoDT6.9, Apr 7-12, San Francisco, USA, 2013.

C32. Anatomical structures segmentation by spherical 3D ray casting and gradient domain editing. A. Kronman, **L. Joskowicz**, J. Sosna. *Proc. 15th Int. Conf. on Medical Image Computing and Computer-Assisted Intervention*, Lecture Notes in Computer Science, Ayache et al. eds, Vol 7511(II):363-370, 2012.

C33. Prediction of brain MRI scan in longitudinal tumor follow-up studies. L. Weizman, L. Ben-Sira, **L. Joskowicz**, B. Shofti, S. Constantini, D. Ben-Bashat. *Proc. 15th Int. Conf. on Medical Image Computing and Computer-Assisted Intervention*, Lecture Notes in Computer Science, Ayache et al. eds 7511(II):179-187, 2012.

C34. MRI internal segmentation of optic path gliomas: clinical implementation of a novel algorithm. L. Weizman, **L. Joskowicz**, D. Ben-Bashat, B. Shofti, S. Constantini, L. Ben-Sira. *IEEE Int. Symp. on Biomedical Imaging*, May 2-5, Barcelona, Spain, 2012.

C35. Trajectory planning with augmented reality for improved risk assessment in image-guided keyhole neurosurgery. R. Shamir, M. Horn, J. Mehrkens, Y. Shoshan, **L. Joskowicz**, N. Navab. *IEEE Int. Symp. on Biomedical Imaging*, April 14-17, Chicago, USA, 2011.

C36. Longitudinal assessment of brain tumors using a repeatable prior-based segmentation. L. Weizman, **L. Joskowicz**, L. Ben-Sira, R. Precel, S. Constantini, D. Ben-Bashat. *Proc. IEEE Int. Symp. on Biomedical Imaging*, April 14-17, Chicago, USA, 2011.

C37. Spectral-based 2D/3D X-ray to CT image rigid registration. M. Freiman, O. Pele, A. Hurvitz, M. Werman, **L. Joskowicz**. *Proc. SPIE Symp. on Medical Imaging*, **7964** 76641B 1-8, 2011.

C38. Plexiform Neurofibroma tissue classification. L. Weizman. L. Hoch, L. Ben Sira, **L. Joskowicz**, L. Pratt, S. Constantini, D. Ben Bashat. *Proc. SPIE Symposium on Medical Imaging*, **7962** 79623K 1-8, 2011.

C39. A method for planning safe trajectories in image-guided keyhole neurosurgery. R.R. Shamir, **L. Joskowicz**, Y. Shoshan. *Proc. 13th Int. Conf. on Medical Image Computing and Computer-Assisted Intervention*, Lecture Notes in Computer Science, Jiang et al Eds, Vol 6362, 2010.

C40. Automatic segmentation and components classification of optic pathway gliomas in MRI. L. Weizman, **L. Joskowicz**, L. Ben-Sira, R. Precel, D. Ben-Bashat. *Proc. 13th Int. Conf. on Medical Image Computing and Computer-Assisted Intervention*, Lecture Notes in Computer Science,Jiang et al Eds, Vol 6362, 2010.

C41. Non-parametric iterative model constraint graph min-cut for automatic kidney segmentation. M. Freiman, A. Kronman, S. Esses, **L. Joskowicz**, J. Sosna. *Proc. 13th Int. Conf. on Medical Image Computing and Computer-Assisted Intervention*, Lecture Notes in Computer Science,Jiang et al Eds, Vol 6362, 2010.

C42. What is the actual fiducial localization error in image-guided neuronavigation? R.R. Shamir, **L. Joskowicz**, Y. Shoshan. *Proc. 24th Int. Conf. Computer-Assisted Radiology and Surgery* Geneva, Switzerland, 2010.

C43. Fully automatic kidney segmentation from CTA images: a shape constrained expectation minimization approach. M. Freiman, A. Kronman, S. Esses, **L. Joskowicz**, J. Sosna. *Proc. 24th Int. Conf. Computer-Assisted Radiology and Surgery* Geneva, Switzerland, 2010.

C44. Liver tumors segmentation in CTA images using voxel classification and affinity constraint optimization. M. Freiman, O. Cooper, D. Lischinski, **L. Joskowicz**. *Proc. 24th Int. Conf. Computer-Assisted Radiology and Surgery*, Geneva, Switzerland, 2010.

C45. Uncertain geometry with dependencies. Y. Myers and **L. Joskowicz**, *Proc. 14th ACM Symp. on Solid and Physical Modeling*, Haifa, Israel, 2010.

C46. Point distance and orthogonal range problems with dependent geometic uncertainties. Y. Myers and **L. Joskowicz**, *Proc. 14th ACM Symp. on Solid and Physical Modeling*, Haifa, Israel, 2010. **Best Paper Award, 2nd Place.**

C47. Planar orthogonal range queries with dependent uncertainties. Y. Myers and **L. Joskowicz**, *Proc. 26th European Workshop on Computational Geometry*, Dortmund, Germany, 2010.

C48. Circle problems with independent and dependent uncertainties. Y. Myers and **L. Joskowicz**, *Proc. 26th European Workshop on Computational Geometry*, Dortmund, Germany, 2010.

C49. Automatic segmentation of optic pathway gliomas in MRI. L. Weizman, **L. Joskowicz**, L. Ben-Sira, R. Precel, D. Ben-Bashat. *Proc. IEEE Int. Conf. on Biomedical Imaging*, Rotherdam, The Netherlands, pp 920-923, 2010.

C50. An iterative model-constrained graph-cut algorithm for abdominal aortic aneurism thrombus segmentation. M. Freiman, S. Esses, **L. Joskowicz**, J. Sosna. *Proc. IEEE Int. Conf. on Biomedical Imaging*, Rotherdam, The Netherlands, pp 672-675, 2010.

C51. Over-hydration detection in brain by magnetic induction spectroscopy. C. Gonzalez, M. Perez, N. Hevia, F. Arambula, O. Flores, I. Hinojosa, **L. Joskowicz**, B. Rubinsky. *Int. Conf. on Electrical Bioimpedance*, Gainesville, FL, USA, 2010. *J. of Physics Conference Series*, Vol. 224:121-124, 2010.

C52. Trajectory planning method for reduced patient risk in image-guided neurosurgery: concept and preliminary results. R. Shamir, **L. Joskowicz**, L. Antiga, R. Foroni, Y. Shoshan. *Proc. SPIE Symposium on Medical Imaging*, **7625**, 7625O1 1-8, 2010.

C53. Multi-class SVM model for fMRI-based classification and grading of liver fibrosis. M. Freiman, Y. Sela, Y. Edrei, O. Pappo, **L. Joskowicz**, R. Abramovitch. *Proc. SPIE Symposium on Medical Imaging*, **7624**, 76240S-W 1-8, San Diego, USA, 2010.

C54. Affinity-based constraint optimization for nearly-automatic vessel segmentation. O. Cooper, M. Freiman, **L. Joskowicz**, D. Lischinski. *Proc. SPIE Symposium on Medical Imaging*, **7623**, 76230O 1-8, San Diego, USA, 2010.

C55. Vessels-Cut: a graph-based approach to patient-specific carotid arteries modeling. M. Freiman, N. Broide, M. Natanzon, L. Weizman, E. Nammer, O. Shilon, J. Frank, L. Joskowicz, J. Sosna. *Modelling the Physiological Human*, N. Magnenat-Thalmann Ed., Lecture Notes in Computer Science LNCS 5903, pp 1–12, Springer-Verlag, 2009.

C56. Min-cut method for liver vessel segmentation from MDCT: algorithm assessment and verification. M. Freiman, L. Joskowicz, J. Sosna. *Proc. 95th Radiological Society of North America Annual Meeting*, Chicago, USA, 2009.

C57. Advanced planning and intra-operative validation for robot-assisted keyhole neurosurgery in ROBOCAST. S.A. Ahmadi, T. Klein, N. Navab, R. Roth, R. R Shamir, **L. Joskowicz**, E. DeMomi, G. Ferrigno, L. Antiga, R. Foroni. *Proc. Int. Conf. on Advanced Robotics*, ICAR'2009, Munich, Germany, 2009.

C58. Quantitative comparative patient-specific evaluation of femoral fracture fixations: a clinical study. E. Peleg, **L. Joskowicz**, A. Gefen, M. Liebergall, R. Mosheiff. *Proc. 9th Annual Conf. Int. Soc. Computer-Aided Orthopaedic Surgery*, Boston, USA, 2009.

C59. Point distance problems with dependent uncertainties. Y. Myers, **L. Joskowicz**, *Proc. 25th European Workshop on Computational Geometry*, Brussels, Belgium, 2009.

C60. Fluoroscopy-based X-ray navigation with electromagnetic tracking for orthopaedic surgery: a practical study, Y. Yarom and **L. Joskowicz**. *Proc. 23nd Int. Conf. Computer-Assisted Radiology and Surgery*, CARS'2009, Berlin, Germany, 2009.

C61. Patient-specific modeling of the carotid arteries for surgical simulation. M. Freiman, M. Natanzon, N. Broide, **L. Joskowicz**, L. Weizman. E. Nammer, O Shilon. *Proc. 23nd Int. Conf. Computer-Assisted Radiology and Surgery*, CARS'2009, Berlin, Germany, 2009.

C62. Target registration error in point-based rigid-body registration: a worst case analysis. R.R. Shamir and **L. Joskowicz**. *Proc. 23nd Int. Conf. Computer-Assisted Radiology and Surgery*, CARS'2009, Berlin, Germany, 2009.

C63. Worst-case analysis of target localization errors in fiducial-vased rigid body registration. R. Shamir, **L. Joskowicz**, *Proc. SPIE Symposium on Medical Imaging*, **7259** 72590M 1-8, Orlando, USA, 2009.

C64. Optimal landmarks selection and fiducial marker placement for minimal target registration error in image-guided-neurosurgery, R. Shamir, **L. Joskowicz**, Y. Shoshan. *Proc. SPIE Symposium on Medical Imaging*, **7261**, 72612N 1-8, Orlando, USA, 2009.

C65. Curvlet-based sampling for high-accuracy multi-modal image registration. M. Safran, M. Freiman, **L. Joskowicz**, M. Werman. *Proc. SPIE Symposium on Medical Imaging*, **7259**, 725938 1-8, Orlando, USA, 2009.

C66. A variational method for vessels segmentation: algorithm and application to liver vessels visualization, M. Freiman, L. Joskowicz, and J. Sosna. *Proc. SPIE Symposium on Medical Imaging*, **7261**, 7261OH 1-8, Orlando, USA, 2009.

C67. A novel field-of-view augmentation wand for C-arm CT-like fluoroscopy-based intraoperative navigation, E. Peleg, M. Liebergall, **L. Joskowicz**, Y. Weil, R. Mosheiff. *Proc. 8th Int. Conf. Computer-Aided Orthopaedic Surgery*, Hong Kong, 2008.

C68. Patient-specific FEA of femoral fracture fixations: methodology and experimental results, E. Peleg, M. Liebergall, **L. Joskowicz**, A. Gefen, , R. Mosheiff. *Proc. 8th Int. Conf. Computer-Aided Orthopaedic Surgery*, Hong Kong, 2008.

C69. Classification of suspected liver metastases using fMRI images: a machine learning approach, M. Freiman, Y. Edrei, Y. Sela, Y. Shmidmayer, E. Gross, **L. Joskowicz**, R. Abramovitch. *Proc. 11th Int. Conf. on Medical Image Computing and Computer-Assisted Intervention*, New York, USA, 2008.

C70. A Bayesian approach for liver analysis: algorithm and validation study M. Freiman, O. Eliassaf, Y. Taieb, **L. Joskowicz**, J. Sosna. *Proc. 11th Int. Conf. on Medical Image Computing and Computer-Assisted Intervention*, New York, USA, 2008.

C71. Localization and registration accuracy in image-guided neurosurgery: a clinical study. R. Shamir, **L. Joskowicz**, S. Spektor, Y. Shoshan. *Proc. 22nd Int. Conf. Computer-Assisted Radiology and Surgery*, CARS'2008, Barcelona, Spain, 2008.

C72. Registration of a CT-like atlas to fluoroscopic X-ray images using intensity correspondences, A. Hurvitz and **L. Joskowicz**, *Proc. 22nd Int. Conf. Computer-Assisted Radiology and Surgery*, CARS'2008, Barcelona, Spain, 2008.

C73. An iterative Bayesian approach for livers segmentation: algorithm and clinical validation study. M. Freiman, O. Eliassaf, Y. Taieb, **L. Joskowicz**, Y. Azraq, J. Sosna. *Proc. 22nd Int. Conf. Computer-Assisted Radiology and Surgery*, CARS'2008, Barcelona, Spain, 2008.

C74. Statistical tumor model construction and classification from fMRI maps for liver metastases early detection. M. Freiman, Y. Edrei, E. Gross, **L. Joskowicz**, R. Abramovitch. *Proc. 5th IEEE Int. Symposium on Biomedical Imaging*, Paris, France, May 14-17, 2008.

C75. The linear parametric geometric uncertainty model: points, lines and their relative positioning, Y. Myers, **L. Joskowicz**, *Proc. 24th European Workshop on Computational Geometry*, Nancy, France, 2008.

C76. On the relation between the target and the fiducial registration errors in image-guided neurosurgery: a clinical experiment, R. Shamir, **L. Joskowicz**, Y. Shoshan. *Proc. 5th Int. Conf. on Computer Aided Surgery around the Head*, Leipzig, Germany, 2008.

C77. Computer-aided patient specific quantitative preoperative planning in a clinical environment, E. Peleg, R. Mosheiff, **L. Joskowicz**, A. Gefen, M. Liebergall. *Proc. 7th Int. Conf. Computer-Aided Orthopaedic Surgery*, Heidelberg, Germany, 2007.

C78. Integration of computer-aided navigation and metal detector technology in the removal of Shrapnel in terror attacks casualties E. Peleg, M. Harari, **L. Joskowicz**, M. Liebergall, R. Mosheiff. *Proc. 7th Int. Conf. Computer-Aided Orthopaedic Surgery*, Heidelberg, Germany, 2007.

C79. Patient-specific variability and accuracy of hip abduction/anteversion angular measurements, O. Lubovsky, A. Khoury, E. Peleg, **L. Joskowicz**, M. Liebergall. *Proc. 7th Int. Conf. Computer-Aided Orthopaedic Surgery*, Heidelberg, Germany, 2007.

C80. Evaluation of the second generation of computer assisted orthopaedic fracture reduction, A. Khoury, R. Mosheiff, S. Beyth, **L. Joskowicz**, J. Finkelstein, M. Liebergall. *Proc. 7th Int. Conf. Computer-Aided Orthopaedic Surgery*, Heidelberg, Germany, 2007.

C81. Surface-based preoperative CT/MRI to intraoperative face scan registration: a clinical study, R. Shamir, M. Freiman, **L. Joskowicz**, E. Zehavi, F. Umansky, Y. Shoshan. *Proc. 21st Int. Conf. Computer-Assisted Radiology and Surgery*, Berlin, Germany. In: *Int. J. of Computer-Aided Radiology and Surgery*, Springer, Vol. 2 Suppl 1, S208-210, 2007.

C82. Computer assisted early detection of liver metastases from fMRI maps, M. Freiman, Y. Edrei, R. Abramovitch, **L. Joskowicz**. *Proc. 21st Int. Conf. Computer-Assisted Radiology and Surgery*, Berlin, Germany. In: *Int. J. of Computer-Aided Radiology and Surgery*, Springer, Vol. 2 Suppl 1, S381-382, 2007.

C83. A feature-based transfer function for liver visualization, M. Freiman, **L. Joskowicz**, D. Lischinski, J. Sosna. *Proc. 21st Int. Conf. Computer-Assisted Radiology and Surgery*, Berlin, Germany. In: *Int. J. of Computer-Aided Radiology and Surgery*, Springer, Vol. 2 Suppl 1, S125-126, 2007.

C84. Intensity-based 3D CT-like reconstruction of the femur from a few 2D X-ray images using a statistical model, R. Haddad and **L. Joskowicz**, *Proc. 21st Int. Congress Computer-Assisted Radiology and Surgery*, Berlin, Germany. In: *Int. J. of Computer-Aided Radiology and Surgery*, Springer, Vol. 2 Suppl 1, S486, 2007.

C85. Efficient representation and computation of geometric uncertainty: the linear uncertainty model, L. Joskowicz, Y. Ostrovsky-Berman, Y. Myers. *Proc. 10th CIRP international Seminar on Computer Aided Tolerancing*, Erlangen, Germany, 2007.

C86. An augmented reality guidance probe and method for image-guided surgical navigation, R. Shamir, **L. Joskowicz**, *Proc. 5th IEEE Int. Symp. on Robotics and Automation*, San Miguel Regla, Mexico, 2006.

C87. Navigation total knee replacement – a comprehensive clinical state of the art study, I. Ilsar, **Leo Joskowicz**, L. Kandel, Y. Matan, Liebergall. *Proc. 6th Int. Conf. Computer-Aided Orthopaedic Surgery, Montreal*, Canada, 2006. **Best Clinical Podium Presentation**.

C88. Liver tumor segmentation and volume computation with user-guided 3D active contours, P. Katz, J. Sosna, L. Joskowicz, *Proc. 9th Israeli Symp. Computer-Aided Surgery, Medical Robotics, and Medical Imaging*, Tel-Aviv, Israel, 2006.

C89. Femur mechanical simulation using higher-order finite-element analysis with continuous mechanical properties, R. Fedida, Z. Yosibach, C. Milgrom, and **L. Joskowicz**, *Proc. 2nd Int. Conf. Computational Bioengineering*, Lisbon, Portugal. Rodrigues H. et al. eds, IST press, Vol. 1:85-96, 2005.

C90. Robot-assisted image-guided targeting for minimally invasive neurosurgery: planning, registration, and in-vitro experiment, R. Shamir , M. Freiman, **L. Joskowicz**, M. Shoham, E. Zehavi, Y. Shoshan, *Proc. 8th Int. Conf. Medical Image Computing and Computer-Aided Intervention*, Lecture Notes in Computer Science, 3750:131–138, Springer-Verlag, 2005.

C91. Miniature robot-based precise targeting system for keyhole neurosurgery: concept and preliminary results, **L. Joskowicz**, M. Shoham, R. Shamir, M. Freiman, E. Zehavi, and Y. Shoshan, *Proc. 19th Int. Conf. Computer-Assisted Radiology and Surgery*, CARS'2005, H.U. Lemke et. al. eds., Springer-Verlag, Berlin, Germany, 2005,

C92. Table-mounted vs. bone-mounted reference frame attachment in navigation-assisted orthopaedic surgery, I. Ilsar, Y. Weill, R. Mosheiff, **L. Joskowicz**, A. Peyser, M. Liebergall. *Proc. Int. Conf. Computer-Aided Orthopaedic Surgery*, Helsinki, Finland, 2005.

C93. Towards a reliable mechanical simulation of the proximal femur: a new method of material assignment, R. Fedida, Z. Yosibach, C. Milgrom, **L. Joskowicz**, A. Simkin, *Proc. 30th Israeli Conf. on Mechanical Engineering*, Tel-Aviv, Israel, 2005.

C94. Uncertainty envelopes, Yaron Ostrovsky-Berman and **L. Joskowicz**, *Proc. 21st European Conf. on Computational Geometry*, Barcelona, Spain, 2005.

C95. Relative positioning of planar parts in toleranced assemblies, Yaron Ostrovsky-Berman and **L. Joskowicz**, *Proc. IEEE Int. Conf. on Robotics and Automation*, Barcelona, Spain, 2005.

C96. Geometric computation for assembly planning with plannar toleranced parts, Yaron Ostrovsky-Berman and **L. Joskowicz**, *Proc. IEEE Int. Conf. on Robotics and Automation*, 2005.

C97. Planar parts relative positioning in assemblies with tolerances, Yaron Ostrovsky-Berman and **L. Joskowicz**, in *Models for computer-aided tolerancing in Design and Manufacturing.* J.K Davidson editor, *Springer*, 2006, pp 65-75. Also in *Proc. 9th CIRP Int. Seminar on Computer Aided Tolerancing*, 2005.

C98. Tolerance envelopes of planar mechanical parts, Y. Ostrovsky-Berman and **L. Joskowicz**, *Proc. ACM Symposium on Solid Modeling and Applications*, G. Elber, N. Patrikalakis, P. Brunet Eds, Genoa, Italy, 2004.

C99. Robot-assisted distal locking of long bone intramedullary nails: localization, registration, and in-vitro experiments, Z. Yaniv and **L. Joskowicz**, *Proc. 7th Int. Conf. on Medical Image Computing and Computer-Aided Intervention*, Rennes, France, Vol. II pp 58-65, 2004.

C100. How to achieve fast, accurate, and robust rigid registration between fluoroscopic X-ray and CT images, **L. Joskowicz** and D. Knaan, *Proc. 18th Int. Congress on Computer-Assisted Radiology and Surgery*, H.U. Lemke *et. al.* eds, International Congress Series Elsevier, pp 147–152, 2004.

C101. Effective intensity-based 2D/3D rigid registration between fluoroscopic X-ray and CT, D. Knaan and **L. Joskowicz**, *6th Int. Conf. on Medical Image Computing and Computer-Aided Intervention*, Toronto, Canada, November 2003. *Lecture Notes in Computer Science 2879.* Ellis, R. and Peters, T. eds, Berlin: Springer, Vol. 1:351–358, 2003.

C102. Tolerance envelopes of parametric planar part models, Y. Berman and **L. Joskowicz**, *Proc. 8th CIRP Seminar on Computer-Aided Tolerancing*, Charlotte, NC, USA, 2003.

C103. Anatomical image-based rigid registration between fluoroscopic X-ray and CT: methods and experimental results, **L. Joskowicz**, D. Knaan, H. Livyatan, Z. Yaniv, A. Khoury, R. Mosheiff, M. Liebergall, *Proc. 17th Int. Congress on Computer-Assisted Radiology and Surgery*, H.U. Lemke *et. al.* eds, Elsevier, pp 419–425, 2003.

C104. A robot-assisted system for long bone intramedullary distal locking: concept and preliminary results, **L. Joskowicz**, C. Milgrom, M. Shoham, Z. Yaniv, A. Simkin, *Proc. of the 17th Int. Congress on Computer-Assisted Radiology and Surgery*, H.U. Lemke *et. al.* eds, Elsevier, pp 485–491, 2003.

C105. Redesign of a spatial gear pair using configuration spaces, E. Sacks, **L. Joskowicz**, R. Schultheiss, and U. Hinze, *Proc. ASME Design Engineering Technical Conferences*, Montreal, Canada, 2002.

C106. Robot-guided long bone intramedullary distal locking: concept and preliminary results, **L. Joskowicz**, C. Milgrom, M. Shoham, Z. Yaniv, A. Simkin, *Proc. 3rd Int. Symposium on Robotics and Automation*, Toluca, Mexico, 2002.

C107. Robust automatic C-arm calibration for fluoroscopy-based navigation: a practical approach, H. Livyatan, Z. Yaniv, **L. Joskowicz**, *Proc. 5th Int. Conf. on Medical Image Computing and Computer-Aided Intervention*, MICCAI'2002, October 2002, Tokyo, Japan. Lect. Notes in Computer Science 2488. Dohi, T. and Kikinis, R. Eds, Springer, Vol. 2:60-68, 2002.

C108. Robust kinematic synthesis of mechanical systems, E. Sacks, **L. Joskowicz**, and R. Schultheiss, *Proc. American Society for Precision Engineering. Topical meeting: Tolerance Modeling and Analysis*, North Carolina, USA, 2002 and *Proc. of the Int. Symp. on Multibody Systems and Mechatronics*, Mexico City, Mexico, 2002.

C109. Segmentation of microcalcifications in X-ray mammograms using entropy thresholding, M. Melloul and **L. Joskowicz**. *Proc. 16th Int. Congress on Computer-Assisted Radiology and Surgery*, H.U. Lemke *et. al.* eds, Elsevier, June 2002.

C110. Computer-based periaxial rotation measurement for aligning fractured femur fragments: method and preliminary results, O. Ron, **L. Joskowicz**, A. Simkin, and C. Milgrom, *Proc. 4th Int. Conf. on Medical Image Computing and Computer-Assisted Intervention*, M. Viergever *et. al.* eds, Springer, 2001.

C111. Long bone panoramas from fluoroscopic X-ray images, Z. Yaniv and **L. Joskowicz**, *Proc. 15th Int. Congress on Computer-Assisted Radiology and Surgery*, H.U. Lemke *et. al.* eds, Elsevier, 2001.

C112. Computer-based periaxial rotation measurement for aligning fractured femur fragments, O. Ron, **L. Joskowicz**, A. Simkin, and C. Milgrom, *Proc. 15th Int. Congress on Computer-Assisted Radiology and Surgery*, H.U. Lemke *et. al.* eds, Elsevier, 2001.

C113. Towards robust kinematic synthesis of mechanical systems, E. Sacks, **L. Joskowicz**, R. Schultheiss, M. Kyung *Proc. 7th CIRP Seminar on Computer-Aided Tolerancing*, Cachan, France, 2001. Published book chapter in *Geometric Product Specification and Verification: Integration of Functionality*, P. Bourdet, L. Mathieu eds, Kluwer Academic Press, 2003.

C114. Simulator and distal targeting device for in-vitro experimentation and training in computer-aided closed medullary nailing, **L. Joskowicz**, C. Milgrom, A. Simkin. *Proc. 14th Int. Congress on Computer-Assisted Radiology and Surgery*, H.U. Lemke et. al. Eds, Elsevier, 2000.

C115. In-vitro accuracy study of contact and image-based registration: materials, methods, and experimental results, Z. Yaniv, O, Sadowsky , **L. Joskowicz**, *Proc. 14th Int. Congress on Computer-Assisted Radiology and Surgery*, H.U. Lemke *et. al.* eds, Elsevier, 2000.

C116. Fluoroscopy-based navigation in computer-aided orthopaedic surgery, **L. Joskowicz**, *Proc. IFAC Conf. on Mechatronics Systems*, Darmstadt, Germany, Isermann *et. al.* editors, Elsevier, 2000.

C117. Kinematic tolerance analysis with configuration spaces: method and case study, **L. Joskowicz** and E. Sacks, *4th Int. Workshop on Algorithmic Foundations of Robotics*, 2000.

C118. Computer-assisted kinematic tolerance analysis of a gear selector mechanism with the configuration space method, E. Sacks, **L. Joskowicz**, R. Schultheiss, U. Hinze, *Proc. ASME Design Automation Conf.*, ASME Press, 1999.

C119. Computer-aided image-guided bone fracture surgery: system integration and prototype, **L. Joskowicz**, C. Milgrom, A. Simkin , O. Sadowsky, Z. Yaniv and G. Leshem. *Proc. 13th Int. Symp. on Computer Assisted Radiology and Surgery*, H.U.Lemke *et. al.* eds, Elsevier 1999.

C120. A computerized approach to reconstruction of growth patterns in hominid molar teeth, P. Smith, J.R. Gomory, R. Haydenblit, R. Shacked, and **L. Joskowicz**, *Proc. 11th Int. Symposium on Dental Morphology*, J.T Mayhall and T. Heikkinen editors, Oulo University Press, Oulo, Finland, 1998.

C121. Spatial contact analysis of fixed-axes pairs using configuration spaces, I. Drori, **L. Joskowicz**, E. Sacks, *Proc. 13th IEEE Int. Conf. on Robotics and Automation*, IEEE Press, 1999.

C122. The configuration space method for kinematic tolerance analysis, **L. Joskowicz** and E. Sacks, *Proc. 6th CIRP Seminar on Computer-Aided Tolerancing*, Kluwer Academic, 1999.

C123. Computer-aided image-guided bone fracture surgery: modeling, visualization, and preoperative planning, L. Tockus, **L. Joskowicz**, A. Simkin, C. Milgrom, *Proc. 1st Int. Conf. on Medical Computing and Computer-Assisted Intervention*, Lecture Notes in Computer Science 1496, Elsevier, Wells *et. al.* editors, 1998.

C124. Fluoroscopic image processing for computer-aided orthopaedic surgery, Z. Yaniv, **L. Joskowicz**, A. Simkin, M. Garza-Jinich , C. Milgrom C, *1st Int. Conf. on Medical Computing and Computer-Assisted Intervention*, Lecture Notes in Computer Science 1496, Elsevier, Wells *et. al.* editors, 1998.

C125. Configuration space visualization for mechanical design, E. Sacks and **L. Joskowicz**, *Proc. IEEE Visualization Conf.*, Research Triangle Park, USA, IEEE Press, 1998.

C126. Efficiently testing for unboundedness and m-handed assembly, F. Schwarzer, F. Bieberbach, **L. Joskowicz**, A. Schweikard C), *IEEE/RSJ Int. Conf. on Intelligent Robots and Systems*, Victoria, Canada, IEEE Press, 1998.

C127. Selecting an effective task-specific contact analysis algorithm **L. Joskowicz**, E. Sacks, V. Kumar, *Workshop on New Directions in Contact Analysis and Simulation*, IEEE Press, 1998.

C128. Computer-aided image-guided bone fracture surgery – concept and implementation, **L. Joskowicz**, L. Tockus, Z. Yaniv, A. Simkin , C. Milgrom, *Proc. 12th Int. Conf. on Computer Assisted Radiology and Surgery*, H.U. Lemke *et. al.* eds, Elsevier, 1998.

C129. Understanding mechanisms: from images to behaviors, T. Dar, E. Rivlin, **L. Joskowicz**, *Proc. IEEE Int. Conf. Robotics and Automation*, Leuven, Belgium, IEEE Press, 1998.

C130. Qualitative and quantitative mechanical assembly design, **L. Joskowicz**, *Proc. 11th Int. Workshop on Qualitative Reasoning*, Tuscany, Italy, 1997.

C131. Dynamical simulation of assemblies of planar, 1dof parts with changing contacts using configuration space, E. Sacks and **L. Joskowicz**, *Proc. IEEE Int. Conf. on Robotics and Automation*, IEEE Press, 1997.

C132. Parametric kinematic tolerance analysis of planar pairs with multiple contacts, E. Sacks and **L. Joskowicz**, in *Proc. 5th CIRP Int. Seminar on Computer-Aided Tolerancing*, Toronto, Canada, 1997.

C133. Computer-integrated revision total hip replacement surgery: preliminary report, **L. Joskowicz**, R.H. Taylor, B. Williamson et al. *2nd Int. Symposium on Medical Robotics and Computer Assisted Surgery*, Baltimore, Wiley Publishers, 1995.

C134. CAD support for comprehensive design, D.D. Grossman and **L. Joskowicz**, *Proc. IFIP WG5.2 Workshop on Formal Design Methods for CAD*, Mexico City, 1995.

C135. Kinematic tolerance analysis, **L. Joskowicz**, E. Sacks and V. Srinivasan, *3rd ACM Symposium on Solid Modeling and Applications*, Utah, ACM Press, 1995.

C136. Mechanism design and analysis using configuration spaces, E. Sacks and **L. Joskowicz**, *Proc. 9th World Congress on the Theory of Machines and Mechanisms*, Milano, Italy, 1995.

C137. Configuration space computation for mechanism design, **L. Joskowicz** and E. Sacks, *Proc. IEEE Int. Conf. on Robotics and Automation.* IEEE Computer Society Press, 1994.

C138. Preoperative insertability analysis and visualization of custom hip implants, **L. Joskowicz** and R.H. Taylor, *Proc. 1st Int. Symposium on Medical Robotics and Computer Assisted Surgery*, Pittsburgh, 1994.

C139. Hip implant insertability analysis: a medical instance of the peg-in-hole problem, **L. Joskowicz** and R.H. Taylor, *Proc. IEEE Int. Conf. on Robotics and Automation*, IEEE Press, 1993.

C140. A representation language for conceptual mechanism design D. Neville and **L. Joskowicz**, *Proc. 5th Int. ASME Design Theory and Automation Conf.*, ASME Press, 1993.

C141. Commonsense reasoning about moving objects: an elusive goal, **L. Joskowicz**, *Proc. AAAI Symposium on Reasoning with Diagrammatic Representations*, AAAI Press, SS-92-02, 1992.

C142. Model-based kinematic simulation, E. Sacks and **L. Joskowicz**, *Proc. Winter Annual ASME Conf.*, DSC Vol. 41 (Automated Modeling), ASME Press, 1992.

C143. Automated model selection using context-dependent behaviors, P. Nayak, **L. Joskowicz**, and S. Addanki, *Proc. 11th National Conf. of the American Association of Artificial Intelligence*, Morgan Kauffman Publishers, 1992.

C144. Incremental configuration space construction for mechanism analysis, **L. Joskowicz** and E. Sacks, *Proc. 9th Natl. Conf. on Artificial Intelligence*, Morgan Kauffman Publishers, 1991.

C145. Reasoning about linear constraints using parametric queries, T. Huynh, **L. Joskowicz**, C. Lassez, and J.L. Lassez, in *Lecture Notes in Computer Science # 472*, K. Nori and C.E. Madhavan, editors, Springer-Verlag, from *Proc. 10th Int. Conf. on Foundations of Software Technology and Theoretical Computer Science*, Bangalore, India, 1990.

C146. Deep domain models for discourse analysis, **L. Joskowicz**, T. Ksiezyk and R. Grishman, in *Proc. IEEE Artificial Intelligence Systems Conf.*, Washington D.C., IEEE Press, 1989.

C147. Simplification and abstraction of kinematic behaviors, **L. Joskowicz**, *Proc. 11th Int. Joint Conf. on Artificial Intelligence*, Morgan Kauffman Publishers, 1989.

C148. From kinematics to shape: an approach to innovative design, **L. Joskowicz** and S. Addanki, in *Proc. 7th Natl. Conf. of the American Association of Artificial Intelligence*, Morgan Kauffman Publishers, 1988.

C149. Shape and function in mechanical devices, **L. Joskowicz**, *Proc. 6th Natl. Conf. on Artificial Intelligence*, Morgan Kauffman Publishers, 1987, pp. 611-615.

Submitted papers

S1. Metastatic lung lesion changes in follow-up chest CT: the advantage of simultaneous analysis with the SimU-Net deep learning pipeline. N. Kenneth, S. Rochman, R. Lederman, J. Sosna, **L. Joskowicz**. Submitted, *European J. Radiology Imaging*, Nov 2023.

S2. A graph-theoretic approach for the analysis of lesion changes and lesions detection review in longitudinal oncological imaging. B. Di Veroli, R. Lederman, Y. Shoshan, J. Sosna, L. Joskowicz. *Medical Image Analysis*, Sept 2023.

S3. Ductal arborization pattern of normal parotid glands in cone-beam computerized sialography. E. Stoyler, O. Shauli, T. Amiel, M. Alterman, S. Mazor, A. Pikovsky, D. Afraiman, **L. Joskowicz**, C. Nadler. *Clinical Anatomy*, Oct 2023.

S4. An end-to-end geometry-based pipeline for automatic preoperative surgical planning of pelvic fracture reduction and fixation. J. Liua, H. Lia, B. Zenga, H. Wang, R. Kikinis, **L. Joskowicz**, X. Chena. *Medical Image Analysis*, Oct 2023.

S5. Simultaneous column-based deep learning classification for progression analysis of atrophy associated with AMD in longitudinal OCT studies. A. Szeskin, R. Yehuda, O. Shmueli, J. Levy, **L. Joskowicz**. Submitted to *Optica Publishing* Nov 2023.

Editorial Work (E)

E1. Co-editor, *Frontiers in Human Neuroscience*, Special Issue on Brain Imaging and Stimulation, R.R.Shamir, **L. Joskowicz**, H. Bergman, 2023.

E2. Co-editor, IJCARS: MICCAI 2020 special issue. A. Martel, D. Stoyanov, D. Mateus, **L. Joskowicz**, P. Abolmaesumi. *Int J. Computer Aided Radiology and Surgery* 1639, 2021.

E3. Co-editor, *Proc. 23rd International Conference on Medical Image Computing and Computer Assisted Interventions, MICCAI 2020*, Parts I-V. A. Martel, P. Abolmaesumi, D. Stoyanov, D, Mateus, M. Zuluaga, SK. Zhou, D. Racoceanu, **L. Joskowicz**, Springer Nature, 2020.

E4. Co-editor, *Processing and Analysis of Biomedical Information.* Proc. 1st Int. SIPAIM workshop, MICCAI-SaMBa 2018, N. Lepore, J. Brieva, E. Romero, D. Racoceanu, **L. Joskowicz**. Lecture Notes in Computer Science LNCS 11379, Springer, 2019.

E5. Co-editor, MICCAI 2016 Special Issue, *Medical Image Analysis.* Editors: A. Maier, W. Wells, **L. Joskowicz**, M. Sabuncu, G. Unal, S. Ourselin, 41:1, 2017.

E6. Co-editor, MICCAI 2016 Special Issue, *Int. J. of Computer Aided Radiology and Surgery*, Editors: A. Maier, W. Wells, **L. Joskowicz**, M. Sabuncu, G. Unal, S. Ourselin, 12:1243-http://dx.doi.org/10.1016/j.media.2017.06.0121244, 2017.

E7. Co-editor, *Proc. Medical Image Computing and Computer Aided Interventions.* S. Ourselin, **L. Joskowicz**, M. Sabuncu, G. Unal, W. Wells Eds. Lecture Notes in Computer Science, Springer, LNCS 9901-03, 2016.

E8. Co-editor, *Computer Assisted Tools for Medical Robotics.* J.M. Sabater-Navarro, N. Garcia-Aracil, D. Accoto, **L. Joskowicz**. Editorial and Special issue, *Computer Methods and Programs in Biomedicine*, Vol 112(2):237-238, 2013.

E9. Co-editor, *Proc. 3rd Int Conf. on Information Processing in Computer Assisted Interventions*, IPCAI 2012, Pisa, Italy. Lecture Notes in Computer Science Vol. 7330, P. Abolmaesumi, **L. Joskowicz**, N. Navab, P. Jannin, Eds. 180 p, 2012.

E10. Co-editor, *Proc. 13th Annual Computer-Aided Orthopaedic Surgery Meeting*, B. L. Davies, **L. Joskowicz**, B. Thornberry, Orlando, USA, Jun 12–15, 2013.

E11. Co-editor, *Proc. 12th Annual Computer-Aided Orthopaedic Surgery Meeting*, B. L. Davies, **L. Joskowicz**, E.K. Song, Seoul, South Korea, Jun 13–16, 2012.

E12. Co-editor, *Proc. 11th Annual Computer-Aided Orthopaedic Surgery Meeting*, B. L. Davies, **L. Joskowicz**, J. Cobb, London, UK, Jun 15–18, 2011.

E13. Co-editor, *Proc. 10th Annual Computer-Aided Orthopaedic Surgery Meeting*, B. L. Davies, **L. Joskowicz**, P. Merloz, Paris, France, Jun 16–19, 2010.

E14. Co-editor, *Proc. 9th Annual Computer-Aided Orthopaedic Surgery Meeting*, B. L. Davies, **L. Joskowicz**, S. Murphy, Boston, USA, Jun 17–20, 2009.

E15. Co-editor, *Proc. 8th Annual Computer-Aided Orthopaedic Surgery Meeting*, B. L. Davies, **L. Joskowicz**, K-S Leung, Hong Kong, China, Jun 4–7, 2008.

E16. Guest editorial. P. Jannin, K. Cleary, **L. Joskowicz** Special Issue, Selected papers from the 2005 Computer Aided Radiology and Surgery Conference (CARS 2005), *Computer-Aided Surgery*, Volume 11(3): 107-108, 2006.

E17. *Abstracts of the Seventh Israeli Symposium on Computer-Aided Surgery, Medical Robotics, and Medical Imaging*, **L. Joskowicz** and M. Shoham editors, *Journal of Computer-Aided Surgery*, Volume 10(6), 2006.

E18. *Abstracts of the Sixth Israeli Symposium on Computer-Aided Surgery, Medical Robotics, and Medical Imaging*, **L. Joskowicz** and M. Shoham editors, *Journal of Computer-Aided Surgery*, Volume 8(6), 2005, pp 316-322.

E19. *Abstracts of the Fifth Israeli Symposium on Computer-Aided Surgery, Medical Robotics, and Medical Imaging*, **L. Joskowicz** and M. Shoham editors, *Journal of Computer-Aided Surgery*, Volume 7(5), 2002, pp. 300-308.

E20. *Abstracts of the Fourth Israeli Symposium on Computer-Aided Surgery, Medical Robotics, and Medical Imaging*, **L. Joskowicz** and M. Shoham editors, *Journal of Computer-Aided Surgery*, Volume 6(5), 2001, pp. 305–320.

E21. *Abstracts of the Third Israeli Symposium on Computer-Aided Surgery, Medical Robotics, and Medical Imaging*, **L. Joskowicz** and M. Shoham editors, *Journal of Computer-Aided Surgery*, Volume 5(5), 2000.

E22. *Abstracts of the Second Israeli Symposium on Computer-Aided Surgery, Medical Robotics, and Medical Imaging*, **L. Joskowicz** and M. Shoham editors, *Journal of Computer-Aided Surgery*, Volume 4(2), 1999, pp. 105-115.

E23. *Proc. of the 1st–11th Israeli Symposium on Computer-Aided Surgery, Medical Robotics, and Medical Imaging*, **L. Joskowicz** and M. Shoham editors, The Hebrew University of Jerusalem and Technion, 1998-2008.

E24. *Annals of Mathematics and Artificial Intelligence.* Special Issue on Foundations of Artificial Intelligence V, **L. Joskowicz**, S. Kraus, and D. Lehmann editors, Vol. 25, Nos 1,2, July 1999, pp 1-160.

E25. *New directions in contact analysis and simulation*, **L. Joskowicz**, E. Sacks, V. Kumar Eds, IEEE Press, 1998.

E26. *Annals of Mathematics and Artificial Intelligence.* Special issue, **L. Joskowicz**, F. Hoffman and J.L. Lassez, editors, J.C. Baltzer Scientific Publishing Company, Vol. 10-33, 1994.

E27. *Design from physical principles.* B. Williams and **L. Joskowicz** Editors, AAAI Fall Symposium Series, AAAI Press, ISBN 0-929280-36-9, 168 pp, 1992.

Patents (P)

P1. *System and method for evaluating or predicting a condition of a fetus*, D. Ben Bashat, L. Ben Sira, N. Avisdris, **L Joskowicz**, US Patent App. 18/236,007, 2023.

P2. *Adaptive navigation technique for navigating a catheter through a body channel or cavity.* Averbuch D, Weingarten O, Joskowicz L, Markov Y, Cohen R. US Patent 11,631,174, 2023.

P3. *Method of needle localization via partial computerized topographic scanning and system thereof* G. Medan, **L. Joskowicz**, US Patent 11,109,822, 2021.

P4. *Methods for automated lesion analysis in longitudinal volumetric medical image studies*, **L. Joskowicz**, J. Sosna. US Patent Application 2021/0327068, 2021.

P5. *Method of radiation dose reduction via fractional computerized tomographic scanning and system thereof.* **L Joskowicz**, N Shamul, US Patent Application 2019/0274641, 2019.

P6. *Interactive segmentation in volumetric scans.* **L. Joskowicz**, M. Braginsky, D. Ben Bashat,D. Link, L. Ben Sira. US Patent Application No. 16/672,470, Nov. 2019.

P7. *Deformable registration and region-of-interest image reconstruction in sparse repeat CT.* Z. Adelman, **L. Joskowicz**. US Provisional Patent Application No: 62/938,014, Nov 2019.

P8. *Robot for use with orthopaedic inserts.* M. Shoham, **L. Joskowicz** C. Milgrom, Z. Yaniv, A. Simkin. US Patent No. 9,872,733, Jan 23, 2018.

P9. *Method of repeat computed tomography scanning and system thereof.* **L. Joskowicz**, G. Medan. A. Kronman, US Patent Application 2016/0335785, 2016.

P10. *Image-guided robotic system for keyhole neurosurgery.* **L. Joskowicz**, M. Shoham, E. Zehavi, Y. Shoshan. US Patent 9,492,241, 2016.

P11. *Fast MRI acquisition of repeat scans.* L. Weizman, D. Ben-Bashat, **L. Joskowicz**. US Patent Application 61,930,558, 2015.

P12. *Robotic method for use with orthopedic inserts*, M Shoham, **L Joskowicz**, C Milgrom, Z Yaniv, A Simkin US Patent 8,838,205 45, 2014.

P13. *Method for optimal landmark selection and placement for minimal error registration in image-guided neurosurgery.* R. Shamir, **L. Joskowicz**, Y. Shoshan, US Patent Application 61,291,577, 2010.

P14. *Distal intramedullary nail targeting using a bone-mounted robot*, **L. Joskowicz**, M. Shoham, E. Zehavi, US Patent 60/389,207, July 2003.

P15. *Adjustable drilling jig for targeting locking screws for intramedullary nails locking screws.* C. Milgrom, A. Simkin, **L. Joskowicz**, WO/2003/065907, 2003.

P16. *A method for automatically obtaining spatial layout for multimedia presentations*, M. Kim, **L. Joskowicz**. J. Song, U.S. Patent 5,669,006, 1997.

P17. *Interference-free insertion of a solid body into a cavity.* **L. Joskowicz**, R.H. Taylor, US Patent 5,343,385, European Patent 94110676.7, 1994.

Recent Invited Talks

- Keynote speaker *Int. Conf. Computer Aided Radiology and Surgery (CARS'24)*, Barcelona, Spain, Jun 20-24, 2024.
- Keynote speaker, *Healthechnology 23*, Elche, Spain, Oct 25-27, 2023.
- Invited speaker, *European Congress of Radiology (ECR 2023)*, Educational course on Artificial intelligence at the service of foetal imaging, Vienna, Austria, March 1-4, 2023.
- Keynote speaker, *Center for Artificial Intelligence in Medicine Research Symposium*, Bern, Switzerland, Nov. 22, 2022.
- Panel speaker, *European Conference on Computer Vision (ECCV'22)*, Computer Vision in Medical Imaging Workshop, Tel-Aviv, Israel, Oct. 22-25, 2022.
- Invited speaker, *IEEE Data Science and Engineering in Healthcare, Medicine and Biology*, Tel-Aviv, Israel, Oct. 19-20, 2022.
- Plenary speaker, *6th Int. Conf. Soft Computing: Theory and Applications (SoCTA'21)*, Kota, Rajhastan, India, Dec. 17-19, 2021 (virtual).
- Keynote speaker, *17th Int. Symp. on Medical Information Processing and Analysis (SIPAIM'21)*, Campinas, Brazil, Nov. 17-19, 2021 (virtual).
- Keynote speaker, *Medical Augmented Reality Summer School 2021 (MARSS2021)* Zurich, Switzerland, Aug 31- Sept 9, 2021.
- Keynote speaker, *Hamlyn Symposium on Medical Robotics*, London, UK, Jul 12-14, 2021 (virtual).
- Keynote speaker, *Medical Imaging and Computer-Aided Diagnosis*, Birmingham, UK, Mar 25-26, 2021 (virtual).
- Keynote speaker. *25th Iberoamerican Congress on Pattern Recognition*, Porto, Portugal, 12-14 May 2021 (virtual).
- Keynote speaker, *Seminario en Computacion, Centro de Educacion en Computacion Avanzada, UNAM*, Mexico City, Mexico 15 Oct 2020 (virtual).
- Keynote speaker, *Rajavithi University Hospital Annual Meeting*, Bangkok, Thailand, Feb 19-20, 2020 (virtual).
- Invited speaker, *Improving Healthcare with AI Workshop*, Google Research, Tel-Aviv, Israel, Oct 23-34, 2019.
- Invited speaker, *Israel-Mexico Medical Symposium: Advancing Medical Sciences across Multidisciplinary Research*, UNAM, Mexico City, Mexico, Sept 2-3, 2019.
- Invited speaker, Clinical Day, *CARS 2019: Int. Conf. Comp. Aided Radiology and Surgery*, Rennes, France. Jun 20-23, 2019.
- Keynote speaker, *Artificial Intelligence in Radiology Symposium*, Ministry of Health, Tel Aviv, Israel, Dec 20, 2018.

- Keynote speaker, *Workshop on Large Scale Annotation of Biomedical Data and Expert Label Synthesis*, MICCAI 2018 LABELS, Granada, Spain, Sept 18, 2018.
- Invited speaker, *Seminar, Computer Aided Medical Procedures and Augmented Reality Chair*, Technical University of Munich, Germany, Jun 25, 2018.
- Keynote speaker, *Rajavithi University Hospital Annual Meeting*, Bangkok, Thailand, Feb 21-23, 2018.
- Keynote speaker, *International Symposium on Intelligent Computing Systems*, ISICS'18, Merida, Mexico, Mar 21-23, 2018.
- Invited speaker and session co-organizer, *37th Annual Meeting of the Israel Orthopaedics Association*, Tel-Aviv, Israel, Dec 12, 2017.
- Invited speaker, *Joint Research Workshop on Biomedical Engineering, U. of Melbourne, Hebrew U. of Jerusalem*, Tel-Aviv, Dec 5-6, 2017.
- Keynote speaker, *6th Conference on Computational Vision and Medical Image Processing*, VipIMAGE'17, Porto, Portugal, Oct 18-21, 2017.
- Invited speaker, Dept of Orthopaedic Surgery, Imperial College, London, UK, June 27, 2017.
- Invited speaker, Faculty of Medicine and IRCAD Center, U. of Strasbourg, France, March 22, 2017.
- Keynote speaker, *12 Encuentro Latinoamericano de Cirujanos de Cadera y Rodilla* ELCCR'16, Cartagena de Indias, Colombia, Aug 3-6, 2016.
- Invited speaker *MICCAI workshop on Interactive Medical Image Computing* Athens, Greece, Oct 17, 2016.
- Keynote speaker, *3rd Int. Conference on Augmented Reality, Virtual Reality and Computer Graphics*, Otranto, Italy, Jun 15-18, 2016.
- Invited speaker, *Israel-Italy Conference on Medical and Rehabilitation Robotics*, Jun 1-2, Tel-Aviv, Israel, 2016.
- Invited speaker, *1st Joint Meeting of the Israeli and Mexican Mathematical Societies*, Oaxaca, Mexico, Sept 7-11, 2015.
- Keynote speaker, *23rd Int. Congress of the Federation of Latin American Societies of Orthopaedics and Traumatology* SLAOT'16, Mexico City, Mexico, Aug 20-25, 2015.
- Invited speaker, *The Conference and Exhibit of Medical Equipment and Technology*, MEDICO'15, Tel-Aviv, Israel, Apr 27, 2015.
- Invited speaker, *The French-Israeli High Council for Science and Technology Conference on Medical Robotics*, Tel-Aviv, Israel Mar 23-25, 2015.
- Keynote speaker, *Int. Conf. on Medical Innovation*, Chiba, Japan, Mar 14, 2014.
- Invited speaker, *1st Workshop on Rehabilitation Robotics*, Mexico City, Mexico, Jan 28, 2014.

- Invited speaker, *87-89th Meeting of the Societe Francaise de Chirurgie Orthopedique et Traumatologie, CAOS Section*, SOFCOT'12,13, 14, Paris, France, Nov. 2012,2013, 2014.

Professional Affiliations

- Member, Institute of Electrical and Electronic Engineers (IEEE).
- Member, American Society of Mechanical Engineers (ASME).
- Member, International Society for Computer-Aided Orthopaedic Surgery (CAOS-International)
- Member, International Society for Computer-Assisted Surgery (ISCAS)
- Member, Medical Image Computing and Computer Aided Interventions Society (MICCAI).