

RESUME

Alon Wolf

Faculty of Mechanical Engineering, Technion I.I.T.

Date of Birth 28/4/1969
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ACADEMIC DEGREES

2002 Ph.D. - Faculty of Mechanical Engineering, Technion, Israel
1998 M.Sc. - Faculty of Mechanical Engineering, Technion, Israel
1995 B.Sc. (Cum Laude) - in Mechanical Engineering, Faculty of Mechanical Engineering, Technion, Israel

ACADEMIC APPOINTMENTS

2022-date Millstone/St. Louis Academic Chair Professor
2018-date Professor, Faculty of Mechanical Engineering, Technion-Israel
2019-2022 Professor, Faculty of Biomedical Engineering, Technion-Israel (secondary appointment)
2012-2018 Associate Professor (tenured), Faculty of Mechanical Engineering, Technion-Israel Institute of Technology
2005-12 Senior Lecturer, Faculty of Mechanical Engineering, Technion-Israel Institute of Technology
2003-05 Research Scientist, ICAOS (Institute for Computer Assisted Orthopedic Surgery), West Penn Hospital, Pittsburgh PA, USA
2002-03 Post-Doctoral Research Associate, Mechanical Engineering Department, Carnegie Mellon University, Pittsburgh PA, USA

Visiting appointments

2018-date Distinguished Visiting Professor, Bologna Business School, University of Bologna, Italy
2004-08 Adjunct Assistant Professor, School of Medicine Department of Surgery, University of Pittsburgh, Pittsburgh PA, USA
2003-06 Adjunct Faculty, The Robotics Institute, Carnegie Mellon University, Pittsburgh PA, USA

PROFESSIONAL EXPERIENCE (outside academia)

2022-date Advisory Board, Vertical Field Ltd
2005-date Co-inventor and founder *Medrobotics Corporation*
1995 Mechanical Engineer, Elbit Ltd, Israel

- 1993-95 Mechanical Engineer and Mechatronics Designer, Eilon Engineering, Israel
- 1991-97 Member of the Senate Undergraduate and Graduate Court, Technion-Israel Institute of Technology, Haifa, Israel

RESEARCH INTERESTS

My research interests are in the field of theoretical and applied kinematics, in particular with applications to robotics and biomechanics. Specific interests are:

- Kinematics of mechanisms and motion
- Medical Robotics
- Biomechanics – gait analysis and rehabilitation
- Medical devices
- Hyper-redundant robots

TEACHING EXPERIENCE

Faculty of Mechanical Engineering, Technion, 2006-present. Courses:

- Electric Motors, Undergraduate course (undergraduate course)
- Kinematics and Kinetics in Biomechanics and Robotics (graduate course)
- Introduction to Mechatronics (undergraduate course)
- Introduction to Mechanical Engineering (undergraduate course)
- Kinematics of Mechanisms (undergraduate course)
- Advanced Robotic Lab (undergraduate course)

The Robotics Institute, Carnegie Mellon University USA 2004

- Advanced Topics in Kinematics (graduate course)

Design of new courses

- Electric Motors (redesign the old course)
- Kinematics and Kinetics in Biomechanics and Robotics

TECHNION ACTIVITIES

- 2023- Dean of the Faculty of Mechanical Engineering (starting 1/2023)
- 2019-2022 Vice President for External Relations & Resource Development
- 2018-date Director, The Israeli Olympic Sport Research Center
- 2011-date Technion representative in FIRST Israel and member of the board
- 2011-2022 Board Member, Technion Alumni organization
- 2007-date Member, Steering Committee and Referee for Technion's "TechnoBrain" competition
- 2017-2019 Member of the Technion Library Committee
- 2013-2019 Member of the Technion Senate (elected)
- 2009-2019 Board Member, Technion Center for Autonomous System, TASP
- 2014-2017 Member of the Senate General Faculty-Student Committee, Technion
- 2015-2016 Member of the Technion Graduate School Award Committee
- 2012-2015 Board Member, National Center for Science and Technology teachers - MoreTech

DEPARTMENTAL ACTIVITIES

- 2019-2019 Deputy dean for graduate studies
- 2012-2019 Member of the Department Undergraduate Studies Committee
- 2006-date Director and Founder of the Biorobotics and Biomechanics Research Lab, Faculty of Mechanical Engineering
- 2012-2015 Deputy Dean for Students in Undergraduate Studies
- 2012-2015 Member of the Department Graduate Studies Committee
- 2007-2015 Chair of the Faculty Awards Committee, Faculty of Mechanical Engineering
- 2006-2012 Head of the Creative Design Student Lab, Faculty of Mechanical Engineering
- 2006-2011 Head of the Complex Design Student Lab, Faculty of Mechanical Engineering, Undergraduate students (after the retirement of Prof. M. Weiss)

PROFESSIONAL ACTIVITIES

- 2021-date International advisory board Bologna Business School

Member of Editorial Boards

- 2018-2021 Associate Editor, ASME Journal of Mechanisms and Robotics
- 2016-date Associate Editor - Clinical Biomechanics
- 2014-date Editorial Board Member, Journal of Soft Robotics
- 2014-date Editorial Committee, Biomechanica Hungarica
- 2011-date Editorial Advisory Board Member, Journal of Electromyography & Kinesiology
- 2007-2017 Editorial Board Member, Recent Patents in Mechanical Engineering
- 2013 Guest Editor, Special Issue on Rehabilitation Bioengineering, Annals of Biomedical Engineering
- 2004-2006 Editorial Review Board Member, International Journal of Medical Robotics and Computer Assisted Surgery
- 2001-2005 Associate Editor and Scientific and Technical Advisor, ARGOS- European Association of Research Groups for Spinal Osteosynthesis

Membership in Committees

- 201X Member, Israel Science Foundation Evaluation Committee on Mechanical Engineering
- 2006 Member, NIH Special Emphasis Panel/Initial Review Group for NIAMS R03 (O1)
- 2012-2015 Member of the European Union panel of the integrated-projects and coordination-actions of the Cognitive systems, Interaction, Robotics unit E5
- 2005-2006 Member, International Program Committee for IASTED International Conference on Robotics and Applications (RA 2005/6)

Reviewer

IEEE Transaction on Robotics
 ASME Journal of Mechanical Design
 ASME Journal of Mechanism and Robotics
 Journal of Mechanism and Machine Theory
 Journal of Robotic Systems
 Medical & Biological Engineering & Computing
 Journal of Biomechanics
 Journal of Electromyography and Kinesiology (Editorial Board)
 Journal of Orthopaedic Research

PUBLIC ACTIVITIES

2022-date	Advisor and Member, Magna cum Laude-Reut Board of Trustees
2021-2021	Member of the High Level Working Group at the Ministry of Health on the development of standards for the facility management in hospitals in Romania (Minister appointment)
2017-2022	Board of Trustees, Reali Hebrew School, Haifa, Israel (Technion appointment)
2011-date	Board Member, FIRST Israel and director of FIRST-Technion
2008-2017	Head (chief) of the Tidhar and Ilanot (Haifa) Branches of Israeli Scouts
2015-2016	Pedagogic Committee, Reali Hebrew School, Haifa, Israel
2006–2016	Lecture to high school students, “Bashaar” Academic Community for the Israeli Society

MEMBERSHIP IN PROFESSIONAL SOCIETIES

2017-date	Fellow ASME (for contribution to Medical Robotics and education)
2017-date	Senior Member IEEE
2014-date	OARSI: Osteoarthritis Research Society International
2012-date	World Congress of Biomechanics
2008-date	European Society of Biomechanics
2004-2017	Member ASME
2003-2017	Member IEEE
2004-2006	CAOS International (Computer Assisted Orthopaedic Surgery)

FELLOWSHIPS, AWARDS AND HONORS

2022	Medal of Honor, Romanian Society of Anesthesia and Intensive Care
2021	The Variety award for ground braking technology and science for the help of disabled people.
2018	1 st prize award- Medical Entrepreneurship conference 2018, Technion Medical School (with two of my supervised undergraduate students)
2017	Uzi and Michal Halevi Grant for Innovative Applied Engineering Research
2016	Hershel Rich Technion Innovation Award
2016	Selected and Appointed to the IEEE EMBS, Engineering in Medicine and Biology Society, Distinguished Lecturer Program 2016-2017

2015	The Juludan Research Prize Fund (for outstanding research in the application of modern scientific or engineering techniques to medicine)
2014	Innovation of the year in Healthe (Flex system), Popular Science
2013	Yanai Award for Excellence in Academic Education
2013	Awarded for best basic science research by the Israeli Medical Association Scientific Council (Advisor of Dr. Shahar Grunner)
2013	Citation for Teaching Excellence in winter semester of 2012 (also in 2011, 2010, 2008, 2006)
2012	Innovation of the year in security (Snakebot), Popular Science
2010	High Technion Excellence in Teaching, Technion, Israel
2010	Henri Gutwirth Fund Award for Promotion of Research, Technion, Israel
2009	High Technion Excellence in Teaching, Technion, Israel
2009	Honorable Mention, Student Project Award, Technion, Israel (Advisor)
2008	Salomon Simon Mani Award for Excellence in Teaching, Technion, Israel
2008	Second best Annual Student Project Award, Technion, Israel (Advisor)
2006	Conference Best Paper Award - Biorob 2006, IEEE International Conference on Biorobotics and Biomechatronics, Pisa Italy
2001	Awarded for High Academic Achievements by Dean of Graduate Study, Technion, Israel
1999	Teaching Assistant Award for Consistent Excellency, Technion, Israel
1995	Teaching Assistant Award for Excellency, Technion, Israel

GRADUATE STUDENTS, POSTDOCTORAL FELLOWS

Completed PhD theses

Benjamin Groisser, 2022 (Co-advisor Prof. Ron Kimmel (CS))

Thesis title: Intermodal Human Body Modeling: Combining Radiography with Topographic Imaging for Non Ionizing Assessment of Adolescent Idiopathic Scoliosis

Mona Khoury, 2019, (Clinical Advisor – Associate Clinical Prof. Nimrod Rozen)

Thesis title: Investigating gait adaptations thorough correlates of normal vs. challenged gait
Currently: Research staff at Technion BRML (Prof. Wolf)

Debbie Solomonow, 2016 (Clinical Advisor – Associate Clinical Prof. Nimrod Rozen)

Thesis title: Short-term and long-term biomechanical effects of foot center of pressure manipulation on the hip joint in healthy subjects and in patients with degenerative changes of the hip joint
Currently: Research staff at Technion BRML (Prof. Wolf)

Dana Solay, 2016 (Co-advisor Prof. Miles B. Rubin)

Thesis title: Non-rigid kinematics in various biomechanical applications using Cosserat Point Theory

Recipient of the Gutwirth Award for Excellence

Recipient of the HP Award for Research, Technion I.I.T

Currently: Associate Professor, Faculty of Mechanical Engineering Technion I.I.T

Arielle Fischer, 2016

Thesis title: Unloading effect on joints and muscle activation

Recipient of the Swiss Federal-Government Research Award Grant

Recipient of the Late Nadav Shoham Award for Research, Technion I.I.T

Currently: Associate Professor, Faculty of Biomedical Engineering Technion I.I.T

Ouriel Barzilai, 2016 (Co-Advisor Associate Prof. Lihi Zelnik Manor E.E)

Thesis title: Active Vision: From biokinematics and animal behavior to robotics

Recipient of the Late Nadav Shoham Award for Research, Technion I.I.T

Currently: Algorithm and Software Engineer, Object Recognition team, Perceptual Computing, Intel Corporation, Jerusalem, Israel

Eitan M. Debbi (MD), 2015

Thesis title: Biomechanics of motor reduction of gait patterns in patients after total knee arthroplasty

Recipient of the Gutwirth Award for Excellence

Recipient of the Late Nadav Shoham Award for research, Technion I.I.T

Currently: Orthopaedic surgeon, HSS, NYC, USA

Yoel Shapiro, 2014

Thesis title: Continuous flexible robotic structures

Recipient of the 2011 IAI Research Scholarship

Recipient of the Gutwirth Award for Excellence

Currently: Researcher at Amazon Research Center, Haifa, Israel

Amir Haim (MD), 2011 (Clinical Advisor Dr. Nimrod Rozen)

Thesis title: Plasticity of locomotor patterns and gait conditioning via controlled biomechanical intervention

Recipient of the Gutwirth Award for Excellence

Currently: Senior orthopaedic surgeon and director of research, Loewenstein Hospital Rehabilitation Center, Israel

Completed MSc theses

Dean Zadok (Co- advisor Prof Alex Bronstein CS), 7/2022

Thesis title: Towards Predicting Fine Finger Motions from Ultrasound Images via Kinematic Representation

Shunit Polinsky, 5/2021

Research area: Biomechanics- Prosthetic Hands

Yoni Chechik, 2020 (Electrical Engineering – Co advisor with Associate Prof. Lihi Zelnik-Manor)

Thesis title: MagnetoTactile Feedback Apparatus

Olga Polovinets, 2017 (Co-Advisor Prof. Anath Fischer, Clinical Advisor Clinical Associate Prof. Ronit Wollstein)

Thesis title: Biomechanics of the human wrist under loading

Oded Salomon, 2015

Thesis title: Hyper redundant mechanism design

Ifat Gertler, 2014

Thesis title: Medical robotics

Arielle Fischer, 2013 (Approved direct PhD program, Jan 2013)

Thesis title: Unloading effect on joints and muscle activation

Leav Oz-Ari, 2013 (Brakim)

Thesis title: Motion planning for hyper redundant snake-like robots

Dana Solav, 2012 (Approved direct PhD program, Nov 2012)

Recipient of the Gutwirth Award for Excellence

Thesis title: Soft tissue artifact during gait analysis

Mona Khoury, 2011

Thesis title: Foot center of pressure manipulation during gait

Yulia Goryachev (Genis), 2011

Thesis title: The effect of footwear-generated biomechanical manipulations on the electromyogram activation pattern in the lower extremity

Ouriel Barzilai, 2010 (*cum laude*)

Thesis title: An adaptive virtual biofeedback system

Yoel Shapiro, 2009

Thesis title: Haptic control system for a robotic medical system with application to surface acquisition of a joint for joint arthroplasty

Alois Pfenigger, 2008. University of Bern, Switzerland, local advisor Prof. Dr. Jurgen Burger (MSc in Mechanical Engineering)

Thesis title: Novel cardiac catheterization system

Merav Mor (Senesh), 2008

Thesis title: Skin movement artifact modeling and compensation in marker-based human motion estimation for biomechanics studies

Recipient of the Gutwirth Award for Excellence

Completed Post-Doctoral Fellows and Research Members

Dr. Amir Haim, 2014, PhD at Technion I.I.T

Currently: Senior orthopaedic surgeon, Loewenstein Hospital Rehabilitation Center, IL

Dr. Ariel Dowling, 2013-2014, PhD at Stanford University

Currently: Researcher in a high tech company, Boston, USA

Dr. Pazit Levinger, 2012, PhD at La Trobe University, Australia

Currently: Associate Professor, Victoria University, Australia

Dr. Daniel Glussman, 2009, PhD at Technion I.I.T.

Currently: Researcher with J&J Vantor

Dr. Gabor Kosa, 2008, PhD at Technion I.I.T.

Currently: Researcher, Department of Biomedical Engineering University of Basel, Switzerland

Dr. Amir Shapiro, 2006, PhD at Technion I.I.T (while at Carnegie Mellon University)

Currently: Associate Professor, Department of Mechanical Engineering, Ben-Gurion University, Beer Sheva, Israel

Hagai Bamberger, 2009, PhD at Technion I.I.T (Spent a sabbatical from RAFAEL with me while at Carnegie Mellon University working on his PhD)

Thesis title: Kinematics of micro parallel robots
Currently: Senior Engineer, RAFAEL, Israel

Completed MD Fellows (advisor of medical doctors for their basic science research)

Dr. Shahar Grunner (MD), basic science research, 2012, Rambam Health Care Campus and Israel Medical Association
Recipient of the best basic science research by the Israeli Medical Association Scientific Council (2013)

Dr. Shadi Seadia (MD), basic science work, 2011, Rambam Health Care Campus and Israel Medical Association

Dr. Itai Holtzer (MD), basic science work, 2007, Tel Aviv Medical Center and Israel Medical Association

Dr. Michael Shnider (MD), basic science work, 2002, Carmel Medical Center and Israel Medical Association

PhD theses in process

Yair Herbst (approved for direct PhD program, March 2018), expected graduation 2022
Co-advisor, Associate Prof. Lihi Zelnik Manor (EE)
Research area: Haptic feedback and grasping
Recipient of the Sherman and Gutwirth Award for Excellence

Hadar Shaulian (approved for direct PhD program, Jun 2017), expected graduation 2021
Co-advisor, Prof. Amit Gefen, TAU
Research area: Patient Specific Biomechanical-Based Finite Element Analysis Tool for Control of a Robotic Shoe`

Dean Zadok

Co- advisor Prof Alex Bronstein CS
Research area: Ultrasound Images for bionic control

MSc theses in process

Dean Zadok (Co- advisor Prof Alex Bronstein CS)
Thesis title: Towards Predicting Fine Finger Motions from Ultrasound Images via Kinematic Representation

RESEARCH GRANTS

3/22-3-25	KAMIN, Israeli Innovation authority Title: Haptic feedback system Amount: 400,000 \$US Role: Co- Principle Investigator (With Prof. Lihi Zelnik Manor)
7/19-7-21	EIT-Health Title: SET ID 19593 (approved for funding) Amount: 205,000 Euro Role: Principle Investigator

- 12/18-12/21 MOST-Ministry of Science & Technology
 Title: Dynamic and control of an amphibian snake-like robot
 Amount: 1,499,379 NIS (approx. \$US 400,000)
 Role: Principal Investigator (Co Principle Investigators: Yizhar Or)
- 1/15-12/16 KAMIN - Chief scientist
 Title: An elephant trunk-like hyper redundant robot for high payload
 Amount: NIS 840,000 (approx \$US 215,000)
 Role: Principal Investigator
- 10/13-12/14 MAFAT Israel Ministry of Defense
 Subject: Robotics
 Amount: \$50,000
 Role: Principal Investigator
- 9/12-8/13 MAFAT Israel Ministry of Defense
 Title: Bi Bellow actuator for large motions
 Amount: NIS 107,000 (approx \$US 30,000)
 Role: Principle Investigator
- 10/12-10/13 Israeli Police Department
 Title: The biomechanical influence of bomb squad vest on gait
 Amount: NIS 110,000 (about \$30,000)
 Role: Principal Investigator
- 10/11-10/14 Israel Science Foundation – BIKURA
 Title: Active vision: from animal behavior to robotics
 Amount: NIS 643,500 (about \$186,000)
 Role: Principal Investigator (Co Principle Investigators: Gutfreund, Ben Sahar)
- 01/11-12/11 British Technion Society
 Title: Assisted living technology for elderly population
 Amount: \$US 48,000
 Role: Principal Investigator
- 4/10-4/12 MAGNETON (Israel Chief Scientist Office)
 Title: Design tools for biomechanics of self protection vests
 Amount: \$500,000
 Role: Principal Investigator
- 4/10-3/11 University of Haifa-Technion Joint Research Fund
 Title: Functional Electrical Stimulations for paraplegic patients
 Amount: \$10,000
 Role: Principal Investigator (Technion side)
- 8/09-8/10 Plasan Sasa Ltd
 Title: Biomechanics testing of weight carrying
 Amount: \$47,000
 Role: Principal Investigator
- 8/08-7/10 DFG- German Research Foundation
 Title: Mechanism of active vision in barn-owls: From atomic head movements to complex visual behaviors
 Amount: €30,000

- Role: Co- Principle Investigator replacing Prof. Ehud Rivlin (P.I- Prof. Hermann Wagner, University of Aachen-Germany)
- 6/07-6/11 MAFAT Israel Ministry of Defense
 Title: Urban search and rescue snake robots
 Amount: ~\$620,000
 Role: Principal Investigator
- 9/06-9/2011 NIHR01
 Title: Articulated robot for epicardial interventions
 Amount: ~\$1,800,000
 Role: Co-Principal Investigator
 Principal Investigator: Marco Zenati MD (University of Pittsburgh)
- 1/05-30/07 NIHR01
 Title: Mini bone-attached robot for joint arthroplasty
 Amount: \$375,000.00
 Role: Co-Principal Investigator
 Principal Investigator: B. Jaramaz (ICAOS, Pittsburgh chief research officer)
- 1/03-31/08 NSF grant IIS-0325920, ITR
 Title: Data-driven Human Knee Modeling for Expert Surgical Planning Systems
 Amount: \$1,040,000.00
 Role: Co-Principal Investigator
 Principal investigator: B. Jaramaz (ICAOS, Pittsburgh chief research officer)

PUBLICATIONS

Theses

- T1 Wolf A. Sensor Integration in Robotic Assembly Tasks, MSc Thesis, Technion- I.I.T, Haifa 1995. Advisors: Dr. Eyal Zussman and Prof. Moshe Shpitalni
- T2 Wolf A. Line Geometry Tools for the Analysis and Synthesis of a Medical Robot, Ph.D Dissertation, Technion-I.I.T., Haifa 2002. Advisor: Prof. Moshe Shoham

Published journal papers (students, postdoctoral and researchers are underlined)

- J1. Wolf A, Shoham M, Shnider M, Roffman M. Morphometric study of the human lumbar spine for operation-workspace specifications. *Spine*, Vol 26 (22), pp 2472-2477, 2001
- J2. Wolf A, Shoham M. Investigation of parallel manipulators using linear complex approximation. *ASME Journal of Mechanical Design*, Vol 125(3), pp 564-572, 2003
- J3. Wolf A, Shoham M, Shnider M, Roffman M. Feasibility study of a mini, bone-attached, robotic system for spinal operation: analyses and experiments. *Spine*, Vol 29 (2), pp 220-228, 2004
- J4. Wolf A, Shoham M, Ottaviano E, Ceccarelli M. Application of line geometry and linear complex approximation to singularity analysis of the 3-DOF CaPaMan parallel manipulator. *Mechanism and Machine Theory*, Vol 39 (1), pp 75-95, 2004
- J5. Wolf A, Jaramaz B, Lisien B, DiGioia AM III. MBARS: mini bone attached robotic system for joint arthroplasty. *International Journal of Medical Robotics and Computer Assisted Surgery*, Vol 1 (2), pp 101-121, 2005
- J6. Wolf A, DiGioia AM III, Mor AB, Jaramaz B. A kinematic model for estimating cup alignment error during total hip arthroplasty. *Journal of Biomechanics*, Vol 38 (11), pp 2257-2265, 2005
- J7. Wolf A, DiGioia AM III, Mor AB, Jaramaz B. Cup alignment error-model for total hip

- arthroplasty. *Clinical Orthopaedics and Related Research*, Vol 437, pp 132-137, 2005
- J8. Wolf A, Choset H, Brown HB, Casciola R. Design and control of a mobile hyper-redundant urban search and rescue robot. *Advanced Robotics*, Vol 19 (3) pp 221-248, 2005
- J9. O'Halloran D, Wolf A, Choset H. Design of a high-impact survivable robot. *Journal of Mechanism and Machine Theory*, Vol 40 (12), pp 1345-1366, 2005
- J10. Abraham NJ, Wolf A, Choset H, A potential function approach to surface coverage for a surgical robot. *Journal of Computer Aided Surgery*, Vol 11(1), pp 1-9, 2006
- J11. Shamas E, Wolf A, Choset H, Three degrees of freedom joint for spatial hyper-redundant robots. *Journal of Mechanism and Machine Theory*, Vol 41 (2), pp 170-190, 2006
- J12. Wolf A, Shoham M. Screw theory tools for the synthesis of the geometry of a parallel robot for a given instantaneous task. *Journal of Mechanism and Machine Theory*, Vol 41 (6), pp 656-670, 2006
- J13. Ota T, Degani A, Zubieta B, Wolf A, Choset H, Schwartzman D, Zenati M. Epicardial atrial ablation using a novel articulated robotic medical probe via a percutaneous subxiphoid approach. *Innovations* Vol 1(6), pp 335-340, 2006
- J14. Wolf A, Degani A. Recognizing knee pathologies by classifying instantaneous screws of the six degrees-of-freedom knee motion. *Journal of Medical & Biological Engineering & Computing*, Vol 45 (5), pp 475-482, 2007
- J15. Wolf A, Jaramaz B, Murtha P.E. Fully automated computer algorithm for calculating articular contact points with application to knee biomechanics. *Medical & Biological Engineering & Computing*, Vol 46 (3), pp 233-240, 2008
- J16. Bamberger H, Wolf A, Shoham M. Architectures of translational parallel mechanism for MEMS fabrication. *ASME Journal of Mechanical Design*, vol. 130 (8), 084502 (8 pages), 2008
- J17. Bamberger H, Wolf A, Shoham M. Assembly modes changing in parallel mechanism. *IEEE Transaction on Robotics*, Vol. 24 (4), pp 765-772, 2008
- J18. Haim A, Rozen N, Dekel S, Halperin N, Wolf A. Control of knee coronal plane moment via modulation of center of pressure: a prospective gait analysis study. *Journal of Biomechanics*, Vol 41(14), pp 3010-3016, 2008
- J19. Mor M, Wolf A. Motion estimation using point cluster method and Kalman filter. *ASME Journal of Biomechanical Engineering*, Vol 131(5), 051008-1:7, 2009
- J20. Mor M, Gottlieb O, Wolf A. Nonlinear model based estimation of rigid-body motion via an indirect measurement of an elastic appendage. *ASME Journal of Vibration and Acoustics*, Vol 132(1), 011007-1 – 011007-12 (12 pages), 2010
- J21. Haim A, Rozen N, Wolf A. The influence of sagittal center of pressure offset on gait kinetic and kinetics. *Journal of Biomechanics*, Vol 43 (5), pp 969-977, 2010
- J22. Sharp I, Wolf A, Rubin MB. Arithmetic and geometric solutions for average rigid-body rotation. *Mechanism and Machine Theory*, Vol 45 (9), pp 1239-1251, 2010
- J23. Shapiro Y, Wolf A. Introducing haptic capabilities to a bone-mounted robot for intra-operative surface scanning. *International Journal of Medical Robotics and Computer Assisted Surgery*, Vol 6(3), pp 444-453, 2010
- J24. Wolf A, Glozman D. Singularity analysis of large workspace 3RRRS parallel mechanism using line geometry and linear complex approximation. *ASME Journal of Mechanisms and Robotics*, Vol 3, pp 011004-1 – 011004-9, February 2011
- J25. Genis Y, Debbi EM, Haim A, Wolf A. The effect of manipulation of the center of pressure of the foot during gait on the activation patterns of the lower limb musculature. *Journal of Electromyography and Kinesiology*, Vol 21(2), pp 333-339, 2011

- J26. Shapiro Y, Gabor K, Wolf A. Bi-bellows: pneumatic bending actuator. Sensors and Actuators A: Physical, Vol 167(2), pp 484-494, 2011
- J27. Barzilay O, Wolf A. A fast implementation for EMG signal linear envelope computation. Journal of Electromyography and Kinesiology, Vol 21(4), pp 678-682, 2011
- J28. Goryachev Y, Debbi EM, Haim A, Rozen N, Wolf A. Foot center of pressure manipulation and gait therapy influence lower limb muscle activation in patients with osteoarthritis of the knee. Journal of Electromyography and Kinesiology, Vol 21(5), pp 704-711, 2011
- J29. Wolf A, Senesh M. Estimating joint kinematics from skin motion observation: modeling and validation. Computer Methods in Biomechanics and Biomedical Engineering, 14(11), pp 939-946, 2011
- J30. Haim A, Wolf A, Rubin G, Guryachev Y, Khoury M, Rozen N. Effect of center of pressure modulation on knee adduction moment in medial compartment knee osteoarthritis. Journal of Orthopedic Research, Vol 29(11), pp 1668-74, 2011
- J31. Haim A, Rubin G, Rozen N, Guryachev Y, Wolf A. Reduction in knee adduction moment via non-invasive biomechanical training: A longitudinal gait analysis study. Journal of Biomechanics, Vol 45(1), pp. 41-45, 2012.
- J32. Solomon O, Wolf A. Inclined links hyper redundant elephant trunk like robot. ASME Journal of Mechanisms and Robotics, Vol 4(4), November 2012, pp 045001-1 – 6, 2012
- J33. Debbi EM, Wolf A, Haim A. Detecting and quantifying global instability during a dynamic task using kinetic and kinematic gait parameters. Journal of Biomechanics, Vol 45(8), pp. 1366-1371, 2012
- J34. Debbi EM, Wolf A, Guriachev Y, Yizhar Z, Luger E, Debi R, Haim A, In-shoe center of pressure: Indirect force plate vs. direct insole measurement, The Foot, Vol 22(4), pp. 269-275, 2012.
- J35. Springer S, Vatine J.J, Lipson R, Wolf A, Laufer Y, Effects of Dual-Channel Functional Electrical Stimulation on Gait Performance in Patients with Hemiparesis, The Scientific World Journal, Vol 2012, Article ID 530906, 2012
- J36. Barzilay O, Wolf A, Adaptive Rehabilitation Games, Journal of Electromyography and Kinesiology, Vol 23(1), pp. 182-189, 2013
- J37. Springer S, Vatine J.J, Lipson R, Wolf A, Laufer Y, The effects of dual-channel functional electrical stimulation on stance phase sagittal kinematics in patients with hemiparesis, Journal of Electromyography and Kinesiology, Vol 23(2), pp. 476-482, 2013
- J38. Shapiro Y, Wolf A, Kosa Gabor, Piezoelectric Deflection Sensor for a Bi-Bellows Actuator, IEEE Transactions on Mechatronics, Vol 18(3), pp1226-1230, 2013
- J39. Khoury M, Wolf A, Debbi EM, Herman A, Haim A. Foot Center of Pressure Trajectory Alteration by Biomechanical Manipulation of Shoe Design, Foot & Ankle International, Vol 34(4), pp 593-598, 2013
- J40. Shapiro Y, Kosa G, Wolf A, Shape Tracking of Planar Hyper Flexible Beams via Embedded PVDF Deflection Sensors, IEEE/ASME Transactions on Mechatronics, Vol 19(4), pp 1260-1267, 2014
- J41. Dowling A, Barzilay O, Lombrozo Y, Wolf A, An Adaptive Home-Use Robotic Rehabilitation System for the Upper Body, IEEE Journal of Translational Engineering in Health and Medicine, Vol 2, 2100310, 2014
- J42. Wolf A. Instantaneous screws of weight-bearing knee: What can the screws tell us about the knee motion? ASME Journal of Biomedical Engineering, Vol. 136(7), pp. 136-137, 2014
- J43. Solav D, Rubin MB, Wolf A, Soft Tissue Artifact compensation using Triangular Cosserat Point

- Elements (TCPEs), International Journal of Engineering Science, Vol 85, Dec 2014, pp. 1-9, 2014
- J44 Solomonov-Avnon D, Haim A, Herman A, Rozen N, Wolf A, Reduction of Frontal-Plane Hip Joint Reaction Force via Medio-lateral Foot Center of Pressure Manipulation: a pilot study, Journal of Orthopaedic Research, Vol 33(2), pp. 261-269, 2015
- J45 Wolf A, Portnoy P, Gefen A, Editorial: Rehabilitation Bioengineering, Annals of Biomedical Engineering, Vol 43(2), pp. 259-260, Feb 2015
- J46 Shapiro Y, Kosa G, Wolf A, Modeling a Hyper-Flexible Planar Bending Actuator as an Inextensible Euler- Bernoulli Beam for use in flexible robot, J. Soft Robotics, Vol 2(2), pp. 71-79, 2015
- J47 Debbi EM, Wold A, Goryachev Y, Rozen N, Haim A, Alterations in Sagittal Plane Knee Kinetics in Knee Osteoarthritis Using a Biomechanical Therapy Device, Annals of Biomedical Engineering, Vol 43(5), pp 1089-1097, 2015
- J48 Fischer AG, Wolf A, Assessment of The Effects of Body Weight Unloading on Overground Gait Biomechanical Parameters, Clinical Biomechanics, Vol 30(5), pp. 454-461, 2015
- J49 Fischer AG, Debbi EM, Wolf A, Effects of Body Weight Unloading on Electromyographic Activity during Overground Walking, Electromyography & Kinesiology, Vol. 25(4), pp. 709-714, 2015
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- J67 Solomonow-Avnon D, Herman A, Wolf A. Mechanism of reducing knee adduction moment by shortening of the knee lever arm via medio-lateral manipulation of foot center of pressure: a pilot study. Journal of Biomechanics Vol 83:pp 143-149, 2018.
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- J75 Groisser B, Hillstrom H, Thakur A, Morse K, Hresko T, Kimmel R, Wolf A, Widmann R, Reliability of automated topographic measurements for spine deformity, *Journal of Spine Deform* (2022), <https://doi.org/10.1007/s43390-022-00505-9>, 2022
- J76 Shaulian H., Gefen A., Solomonow-Avnon D, Wolf A. A novel graded-stiffness footwear device for heel ulcer prevention and treatment: a finite element-based study, *Biomech Model Mechanobiol*, Jul 30, 2022, doi: 10.1007/s10237-022-01614-0, 2022

Accepted/ In Revisions

- J77 Shaulian H., Gefen A., Biton H., Wolf A. Graded stiffness offloading insoles better redistribute heel plantar pressure to protect the diabetic neuropathic foot. *Gait & Posture*, Sep. 2022. In revisions

Submitted journal papers

- J78 Benjamin N. Groisser, Roger F. Widmann, Howard J. Hillstrom, Ron Kimmel, and Alon Wolf Motion Correction for Slot Scanners via Simultaneous Depth Imaging, *IEEE Transactions on Medical Imaging*

Books and Book Chapters

Book chapters

- B1 Wolf A, DiGioia AM III, Jaramaz B. Computer guided total knee arthroplasty. *MIS Techniques in Orthopedics*, Eds. Giles R. Scuderi, Alfred J. Tria, and Richard A. Berger, Springer-Verlag, pp 390-407, 2005
- B2 Pollard NS, Wolf A. Grasp synthesis from example: Tuning the example to a task or object. Multi-point interaction with real and virtual objects, Springer-Verlag, Barbagli, Prattichizo, Salisbury (Eds), pp 77-90, 2005
- B3 Wolf A, DiGioia AM III, Jaramaz B. How can CAOS support minimally invasive THR and TKR? *Minimally Invasive Total Hip and Knee Arthroplasty*, Springer-Verlag, pp 182-185, 2004
- B4 Wolf A, Shoham M. Medical Automation and Robotics. *Springer Handbook of Automation*, Nof, Shimon Y. (Ed.), Springer, pp 1397-1407, 2009
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- B6 Shaulian H., Gefen A., Wolf A.; Computational modeling of the plantar tissue stresses induced by the clinical practice of off-loading of the diabetic foot; pp 35-24; Editor: Gefen A.; The Science, Etiology and M

Book

- B5 Bamberger H, Wolf A, Shoham M. Kinematics of Micro Parallel Robots: Research on MEMS Kinematics. ISBN: 978-3-639-15023-0, VDM Verlag, 2009

Patents

- P1 Steerable Follow the Leader Device, US9011318 B2, 2015
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 P7 Optimized wound site offloading footwear; Hadar Shaulian, Amit Gefen, Alon Wolf; US Provisional Patent Application No. 63/118,682

Refereed Papers in Conference Proceedings

- C1 Wolf A, Shoham M, Park FC, An investigation of the singularities and self-motions of the 3-UPU robot. Advances in Robots Kinematics, Kluwer Academic Publishers, pp 165-174, Spain, 2002
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 C3 Wolf A, Brown HB, Casciola R, Costa A, Schwerin M, Shamas E, Choset H. A mobile hyper-redundant mechanism for search and rescue tasks. Proceedings of IEEE/RSJ IROS2003, International Conference of Robotic Systems, pp 2889-2895, Las Vegas USA, 2003
 C4 Pollard NS, Wolf A. Grasp synthesis from example: tuning the example to a task or object. Workshop on Multi-Point Interaction in Robotics and Virtual Reality, IEEE International Conference on Robotics and Automation, 2004
 C5 O'Halloran D, Wolf A, Choset H. Design of a high-impact survivable robot. ICRA 2004 International Conference of Robotics and Automation, pp 3551-3558, New Orleans USA, 2004
 C6 Degani A, Wolf A. Graphical singularity analysis of 3-DOF planar parallel manipulators. Advances in Robots Kinematics, Kluwer Academic Publishers, pp 229-238, Ljubljana, Slovenia, 2006
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- C12 Degani A, Choset H, Wolf A, Zenati M. Highly articulated robotic probe for minimally invasive surgery. ICRA 2006, International Conference on Robotics and Automation, pp 4167-4172, Orlando FL, 2006
- C13 Bamberger H, Wolf A, Shoham M. Architectures of translational parallel mechanism for MEMS fabrication. Proceedings of 12th World Congress in Mechanism and Machine Science (IFTOMM2007), Besançon, France, 2007
- C14 Mor M, Wolf A, Gottlieb O. Nonlinear model based estimation of rigid-body motion via an indirect measurement of an elastic appendage. Proceedings of 21st ASME Biennial Conference on Mechanical Vibration and Noise, Las Vegas USA, 2007
- C15 Wolf A, Kosa G. A new concept of a large workspace small size bending bellow actuator. Proceedings of 9th Biennial ASME Conference on Engineering Systems Design and Analysis: ASME, ESDA 2008, Haifa, Israel, 2008
- C16 Wolf A, Haim A. Control of knee frontal plane moment via modulation of center of pressure: A prospective gait analysis study. Proceedings of 9th Biennial ASME Conference on Engineering Systems Design and Analysis: ASME, ESDA 2008, Haifa, Israel, 2008
- C17 Wolf A, Barzilay O. A virtual adaptive biofeedback system for neuromuscular rehabilitation. Proceedings of 9th Biennial ASME Conference on Engineering Systems Design and Analysis: ASME, ESDA 2008, Haifa, Israel, 2008
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- C19 Wolf A, Shapiro A, Mor AB. MBARS2: A new design for a 3-degrees of freedom parallel structure for joint arthroplasty. Proceedings of 9th Biennial ASME Conference on Engineering Systems Design and Analysis: ASME, ESDA 2008, Haifa, Israel, 2008
- C20 Wolf A, Senesh M. Motion estimation using a statistical solid dynamic method. Computational Kinematics 2009, pp 109-116, Duisburg, Germany, 2009
- C21 Wolf A, Barzilay O. An adaptive virtual biofeedback system for neuromuscular rehabilitation. 11th World Congress on Medical Physics and Biomedical Engineering, Munich, Germany, 2009
- C22 Shapiro Y, Wolf A. Haptic control system for a robotic medical system with application to surface acquisition for joint arthroplasty. 11th World Congress on Medical Physics and Biomedical Engineering, Munich, Germany, 2009
- C23 Wolf A, Sharf I, Rubin MB. Using Cosserat point theory for estimating kinematics and soft-tissue deformation during gait analysis. Advances in Robot Kinematics, pp 63-70, Piran, Slovenia, 2010
- C24 Rosman G, Bronstein M, Bronstein A, Wolf A, Kimmel R. Group-valued regularization framework for motion segmentation of dynamic non-rigid shapes. Proceedings of Conference on Scale Space and Variational Methods in Computer Vision (SSVM), 2011
- C25 Barzilay O, Wolf A. Learning from biofeedback: patient-specific games for neuromuscular rehabilitation. International Conference on Neural Computation Theory and Application, Paris, France, 2011
- C26 Barzilay O, Gutfreund Y, Wolf A. Biokinematic study of barn owl head movements for the development of a bio-inspired active vision robotic system, Advances in Robot Kinematics,

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- C28 Gertler I, Shapiro Y, Wolf A, A Haptic Surface Scanning and Machining Parallel Manipulator for Registration-Free Bone Resurfacing during Arthroplasty, ICARA 2013, Karlsruhe Germany, 2013
- C29 Y. Herbst, S. Polinsky, A. Fischer, Y. Medan, R. Schneur, J. Kahn, A. Wolf, Scan-Driven Fully-Automated Pipeline for a Personalized, 3D Printed Low-Cost Prosthetic Hand, 2021 IEEE 17th International Conference on Automation Science and Engineering (CASE), IEEE, 183-188, August 23-27, 2021, Lyon, France.

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- C30 Shaulian H., Bar-Yehuda A., Wolf A. A Dynamic Closed Loop Control Biomechanical System for Patient- Specific Center-of-Pressure Regulation, The 40th IEEE Conference on Robotics and Automation (ICRA 2023), Sep. 2022.

Extended Abstracts

- E1 Wolf A, DiGioia AM III, Mor AB, Jaramaz B. A kinematic model for estimating cup alignment error due to anatomical landmarks localization during total hip arthroplasty. CAOS International 2004 - Computer Assisted Orthopaedic Surgery, Chicago 2004
- E2 Wolf A, Jaramaz B. Mini bone attached robotic system for joint arthroplasty. CAOS International 2005 - Computer Assisted Orthopaedic Surgery, Helsinki, 2005
- E3 Wolf A, Choset H, Degani A. Mini snake robot for orthopaedic interventions. CAOS International 2005 - Computer Assisted Orthopaedic Surgery, Helsinki, 2005
- E4 Wolf A, Jaramaz B, Murtha P E. Fully automated computer algorithm for calculating articular contact points with application to knee biomechanics. CAOS International 2005 - Computer Assisted Orthopaedic Surgery, Helsinki, 2005
- E5 Zenati M, Takeyoshi O, Wolf A, Degani A, Choset H. High dexterity “snake” robot for intrapericardial interventions. 1st Worldwide Meeting of the Minimally Invasive Robotic Association, Innsbruck, Austria, 2005
- E6 Wolf A, Degani A. Knee pathology classification using the instantaneous screws parameter and support vector machines classifier. 5th World Congress of Biomechanics, Munich, 2006
- E7 Takeyoshi O, Degani A, Wolf A, Choset H, Zenati M. Epicardial atrial ablation using a novel highly articulated robotic probe through a subxiphoid approach. Transcatheter Cardiovascular Therapeutics 2006, Washington DC, 2006
- E8 Takeyoshi O, Wolf A, Choset H, Zenati M. Epicardial atrial ablation using a novel highly articulated “snake” robot via a percutaneous subxiphoid approach. International Society for Minimally Invasive Cardiothoracic Surgery 2006, San Francisco, 2006
- E9 Takeyoshi O, Wolf A, Degani A, Choset H, Zenati M. Percutaneous subxiphoid left atrial appendage obliteration with an innovative highly articulated teleoperated catheter. Innovation in Intervention – i2 Summit 2006, Atlanta, 2006
- E10 Goryachev Y, Wolf A, Haim A. Influence of footwear-generated biomechanical manipulations on the muscle activity in the lower extremity of healthy subjects. ESB2010 17th Congress of the European Society of Biomechanics, Edinburgh, UK, 2010
- E11 Barzilai O, Wolf A. An application of virtual reality and learning systems to physiotherapy. ESB2010 17th Congress of the European Society of Biomechanics, Edinburgh, UK, 2010

- E12 Shapiro Y, Wolf A. Haptic control system for surface acquisition in a medical robotic system with applications for joint arthroplasty. ESB2010 17th Congress of the European Society of Biomechanics, Edinburgh, UK, 2010
- E13 Wolf A, Sharf I, Rubin MB. Estimating rigid-body motion and soft-tissue deformation with theory of Cosserat points. ESB2010 17th Congress of the European Society of Biomechanics, Edinburgh, UK, 2010
- E14 Haim A, Wolf A. Adductor moment reduction in medial compartment knee OA via center of pressure modulation: A prospective gait analysis study. ESB2010 17th Congress of the European Society of Biomechanics, Edinburgh, UK, 2010
- E15 Haim A, Rozen N, Wolf A. Reduction in knee adduction moment via non-invasive biomechanical intervention. A longitudinal gait analysis study. World Congress on Osteoarthritis, San Diego USA, 2011
- E16 Debbi EM, Haim A, Wolf A. Perturbation of lower limb during dynamic loading. World Congress on Osteoarthritis, San Diego USA, 2011
- E17 Goryachev Y, Debbi EM, Haim A, Wolf A. Foot center of pressure manipulation and gait therapy influence lower limb muscle activation in patients with osteoarthritis of the knee. World Congress on Osteoarthritis, San Diego USA, 2011
- E18 Solav D, Miles MB, Wolf A. Estimation of rigid body motion and the soft tissue artifact with cosserat point theory. ESB2012, 18th congress of the European Society of Biomechanics, Lisbon Portugal, 1-4 July 2012
- E19 Debbi EM, Goryachev Y, Haim A, Wolf A. Enhancing the accuracy of In-shoe center of pressure measurements obtained by force plates. ESB2012, 18th congress of the European Society of Biomechanics, Lisbon Portugal, 1-4 July 2012
- E20 Debbi EM, Haim A, Wolf A. Detecting and quantifying global instability using kinetic and kinematic parameters. ESB2012, 18th congress of the European Society of Biomechanics, Lisbon Portugal, 1-4 July 2012.
- E21 Debbi EM, Haim A, Wolf A. Knee OA patients using a biomechanical therapy show improvements in sagittal plane kinetics. ESB2012, 18th congress of the European Society of Biomechanics, Lisbon Portugal, 1-4 July 2012.
- E22 Khoury M, Haim A, Wolf A. Precise manipulation of the foot center of pressure trajectory during gait. ESB2012, 18th congress of the European Society of Biomechanics, Lisbon Portugal, 1-4 July 2012.
- E23 Debbi EM, Haim A, Wolf A. Knee Osteoarthritis patients undergoing a non-invasive biomechanical training program demonstrate alternation in sagittal plane knee kinematics: A prospective clinical study. OARSI 2012, Osteoarthritis Research Society International, Barcelona Spain, April 26-29 2012.
- E24 Debbi EM, Haim A, Wolf A. Effect of coronal-plane foot center of pressure manipulation on hip joint biomechanics during gait. OARSI 2012, Osteoarthritis Research Society International, Barcelona Spain, April 26-29 2012.
- E25 Debbi EM, Haim A, Wolf A. Effect of sagittal-plane foot center of pressure manipulation on hip joint biomechanics during gait. OARSI 2012, Osteoarthritis Research Society International, Barcelona Spain, April 26-29 2012.
- E26 Solomonow D, Wolf A. Effect of Sagittal-Plane Foot Center of Pressure Manipulation on Hip Joint Biomechanics during Gait. OARSI 2012, Osteoarthritis Research Society International, Barcelona Spain, April 26-29 2012.
- E27 Solomonow D, Wolf A. Effect of Coronal-Plane Foot Center of Pressure Manipulation on Hip Joint Biomechanics during Gait. OARSI 2012, Osteoarthritis Research Society International, Barcelona Spain, April 26-29 2012.

- E28 Debbi EM, Bernfeld B, Soudri M, Falah M, Greental A, Sigal A, Wolf A. Frontal plane biomechanics of the non-operated knee before and after unilateral total knee arthroplasty, World Congress on Osteoarthritis OARSI 2013, Philadelphia, PA, April 18-21, 2013
- E29 Debbi EM, Bernfeld B, Gray E, Salai M, Greental A, Sigal A, Debi R, Wolf A. Early changes in sagittal plane knee biomechanics after total knee arthroplasty, World Congress on Osteoarthritis OARSI 2013, Philadelphia, PA, April 18-21, 2013
- E30 Debbi EM, Bernfeld B, Falah M, Salai M, Levy Y, Goldl A, Debi R, Wolf A. Frontal plane knee biomechanics after total knee arthroplasty: predictive factors in early outcomes, World Congress on Osteoarthritis OARSI 2013, Philadelphia, PA, April 18-21, 2013
- E31 Fischer AG, Debbi EM, Wolf A, knee kinematic and kinetic modifications under body weight unloading during overground walking at a constant speed. World Congress on Osteoarthritis OARSI 2013, Philadelphia, PA, April 18-21, 2013
- E32 Solav D, Rubin MB, Wolf A, Soft Tissue Artifact Description using triangular Cosserat point elements, The 25th Congress of the International Society of Biomechanics, Glasgow UK, 12-16 July 2015
- E33 Fischer A, Wolf A, assessment of the effects of body weight unloading on kinematics, kinetics, muscle activity, and center of pressure during overground gait. 25th Congress of the International Society of Biomechanics, Glasgow UK, 12-16 July 2015
- E34 Wollstein R, Poloviniets O, Wolf A, Force Evaluation of Different Push-up Styles, Hand and Wrist Biomechanics International, Milan, Italy, 2015.
- E35 Wollstein R, Poloviniets O, Wolf A, Description of the Forces Applied During Different Push-up Styles, 25th ISSH Annual Meeting, Jerusalem, Israel, 2015.
- E36 Wollstein R, Poloviniets O, Wolf A, Description of the Forces Applied to the Elbow During Performance of Push-ups in Different Styles, Poster exhibition, FESH, Santander, Spain, 2016.
- E37 Wollstein R, Poloviniets O, Wolf A, The Shoulder and Elbow During Different Push-up Styles, The 36th Annual meeting of Israel IOA in Conjunction with the 26th Annual Meeting of The ISSH, Tel-Aviv, Israel, 2016.
- E38 Wollstein R, Poloviniets O, Wolf A, Force Transmission Through the Wrist During Performance of Push-ups on a Hyperextended and a Neutral Wrist. 34th Israeli Conference on Mechanical Engineering, Haifa, Israel, 2016.
- E39 Wolf A, Shaulian H, A robotic shoe for monitoring and manipulation of the foot center of pressure for rehabilitation and diagnostic, CMBBE2018, March 26-29, 2018, Lisbon Portugal
- E40 Benjamin Groisser, Roger Widmann, Howard Hillstrom, Ron Kimmel, Alon Wolf, Motion Correction for Slot Scanners via Simultaneous Depth Imaging, European Society of Biomechanics, 2019
- E41 Hadar Shaulian, Amit Gefen*, Alon wolf. "Patient-specific method for foot ulcer treatment and prevention, based on finite element analysis", The European Conference on Controversies in Diabetic Foot Management (DiabeticFoot-Europe), Vienna Austria May, 2019
- E42 Hadar Shaulian, Amit Gefen, Alon wolf, "A Method for Foot Ulcer Treatment and Prevention, based on Finite Element Analysis", European Society of Biomechanics (ESB), Vienna Austria, July 2019.
- E43 Benjamin Groisser, Roger Widmann, Howard Hillstrom, Ron Kimmel, Alon Wolf Estimation of Functional Joints from Surface Scans, European Society of Biomechanics, 2020
- E44 Hadar Shaulian, Amit Gefen, Alon wolf, "Finite Element-Based Method for Determining an Optimal Offloading Design for Treating and Preventing Heel Ulcers", The 2nd European Conference on Controversies in Diabetic Foot Management, Berlin Germany, December 2020.

- E45 Benjamin Groisser, Ron Kimmel, Alon Wolf, Howard Hillstrom, Roger Widmann, Reliability of a Full-Body Topographic Scanner For Automated Analysis of Spine Deformity Society on Scoliosis Orthopaedic and Rehabilitation Treatment, 2021
- E46 Benjamin Groisser, Alon Wolf, Ron Kimmel, U-mesh, Human Correspondence Matching with Mesh Convolutional Networks Israeli Geometric Deep Learning Workshop, 2021
- E47 Hadar Shaulian*, Amit Gefen, Alon wolf, “Finite element modeling of plantar tissue stresses induced by the clinical practice of off-loading of the diabetic heel”, the 26th Congress of the European Society of Biomechanics (ESB), Milan, Italy, July 2021.

PLENARY, KEYNOTE OR INVITED TALKS

1. Parallel Robots: Theory and Applications, EURON-European Research Robotics Network, Benidorm, Spain, March 2007
2. Robotics, From Carl Chapec to exploration of Mars, Researcher’s Night, Israel National Science Museum, Haifa, September 2009
3. Medical Robotics, World Innovation Summit09, Tel Aviv, Israel, September 2009
4. Biorobotics and Evolution of Robotics, The Royal Institute of Great Britain, London UK, October 2009
5. Biorobotics - How much can we learn and copy from nature? Tel Aviv Workshop on Science, Technology and Security, Named after Prof. Yuval Neeman, December 2009, Plenary talk
6. Robotics, The Ron Arad Lecture, Royal College of Physicians, London UK, October 2010
7. Medical Robotics, Rambam Health Care Campus Seminar Series, Haifa, April 2011
8. Technology and Rehabilitation, The Israeli Association of Physical & Rehabilitation Medicine annual conference, Tel Aviv, 26/11/2012, Plenary talk
9. BIOMED 2013, 10th International Conference on Modeling and Measurements in Medicine and Biology, Budapest, Hungary, April 24-26, 2013, Keynote speaker
10. The effect of alternating foot center of pressure on kinematic, kinetic, and electromyographic parameters of the lower limbs biomechanics, 2013 College of Podiatry conference, Liverpool UK, 14-16/11/2013, Plenary talk
11. Biorobotics: application of robotic systems in the clinical setting, 2013 College of Podiatry conference, Liverpool UK, 14-16/11/2013, Plenary talk
12. From Bio to Robotics, What is the connection between Ants, Snakes, Elephants, barn-Owls, Humans, and Robots , Israel Conference of Mechanical Engineering (ICME 2015), Tel Aviv, Israel, March 2015, Plenary talk
13. The Human Machine Merger: Are we headed for the MMATRIX, The 25th CIRP Design Conference Innovative Product Creation, March 2-4, 2015, Haifa Israel, Keynote speaker
14. On Biorobotics and Biomechanics, Connected Health, May 31-Jun 1, 2016, Monaco
15. Medical Robotics and Biomechanics, First European FrenchTech Alsace Workshop, Nov 15-16, 2016 Strasburg, France

16. Medical Robotics: Past- Present-Future, 37th Annual meeting of the Israeli Society for Vision and Eye Research, March 15-16, 2017, Tel Aviv, Israel, Keynote speaker
17. Future Robot Nanobased Surgery for Today Unreachable Targets, 10th European Global Summit for Cutting-Edge Medicine, May 7 -10, 2017, Basel, Switzerland, Plenary talk
18. Robotics, research and business, Bologna Business School Innovation Talks, May 12, 2017, Bologna, Italy, Keynote speaker
19. Medical Robotics: Past- Present-Future, IEEE EMBS workshop Otto Von Guericke University, July 13, Magdeburg, Germany, Invited talk
20. Technological Challenges in Medical Robotics for Surgery and Patient Specific Treatment, 15th Global Conference on Sustainable Manufacturing, Haifa IL, Sep 25 2017, Keynote speaker
21. On Robotics and Medical Robotics current research and the future, Skolkovo Robotics Forum April 23-24, 2018, Moscow, Russia, Invited speaker
22. Frontier in Surgical Robotics, Israel Surgical Association Annual Conference, , May 9-11, 2018, Jerusalem , Israel, Invited speaker
23. From Industry 4.0 to Hospital 4.0 and Innovation, Ferrari, July 19 2018, Maranello, Italy, Invited talk
24. Medical Robotics, BergamoScienza Science Festival, May 14. 2018, Bergamo, Italy, keynote speaker
25. Going digital in medical and biomedical related research, March 26-27 2019, Monaco, Invited speaker
26. Patient-specific method for foot ulcer treatment and prevention, based on finite element analysis, Diabetic Foot Europe 2019, May 2-3 2019, Vienna Austria, Invited speaker.
27. International Summer School on Imaging with Medical Applications (SSIMA), September 16-20, 2019 in Bucharest, Romania, Keynote speaker
28. TEDx Montecarlo, From Bench to Bedside - Human health in the 21st century, October 27, 2020.
29. SRATI 2022, The 48th congress of the Romanian society of anesthesia and intensive care, Biomechanics based treatment of osteoarthritis in the knee and hip, Sinaia Romania 11-15 May 2022
30. SSIMA2022, 6th International School on Imaging with Medical Application, Medical Technology from Bench to bedside, Oradea Romania, 5-9 Sept 2022

Invited Departmental Seminars

Stanford – Mechanical Engineering seminar

MIT – Media Lab

HSS - Hospital for Special Surgery, New York, NY, USA

Budapest University of Technology and Economics, Hungary

Imperial College, London, UK

Berlin University Charite, Julius Wolff Institute, Germany
 Bristol University, UK
 ETH-Zurich, Switzerland
 University of Maryland, USA
 Johns Hopkins University, USA
 McGill University, Canada
 Carnegie Mellon University, USA
 Technion, Ben Gurion University, Tel Aviv University, Israel

PARTICIPATION IN ORGANIZING CONFERENCES

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|------|--|
| 2022 | Co-Chair, SSIMA 2022, Medical Image Computing and Image-Assisted Robotic Surgery, Sept 5-9, Oradea Romania. |
| 2018 | Special Session co-chair: Modeling and simulations for describing mechanisms of action and determining efficacy of medical technologies and processes, CMBBE2018, March 26-29, 2018, Lisbon Portugal |
| 2016 | General Chair, 34th Israeli Conference of Mechanical Engineering, Nov 22-23, 2016, Tehnion I.I.T, Israel |
| 2016 | Program Chair, Medical Robotics, Biomed 2016, 15 th National Life Sciences & Technology Week May 24-26, 2016 David InterContinental Tel Aviv, Israel |
| 2013 | Associate Editor, IEEE International Conference on Robotics and Automation (ICRA 2013), Karlsruhe, Germany |
| 2012 | Associate Editor, IEEE Biorob 2012, Rome Italy |
| 2009 | World Innovation Summit, Tel Aviv, Conference Board and Program Chair for Robotics |
| 2009 | Robotics: Science and System Conference, University of Washington, Seattle USA, Program Committee and Conference Board |
| 2008 | ISRACAS08, Israel Conference for Medical Robotics and Computer Assisted Surgery, Tel Aviv, Program Chair |

IN THE NEWS

Newspaper articles

- | | |
|------|---|
| 2012 | Le Point: “ Le Robot-Serpent d’Alon Wolf, 6 Decembre |
| 2012 | Popular Science: “Invisible Warriors”, January 1 |
| 2011 | Popular Science: “The Terminator Scenario”, January 1 |
| 2009 | Sky-News: “Serpent Spy: Israel's New Robotic Snake”, June 11 |
| 2009 | Fox-News: “Israel Develops Military Robot Snake”, June 11 |
| 2009 | Jerusalem Post: “A robotic snake to fix broken hearts”, January 30 |
| 2008 | Technology Review (MIT press): “Snakelike Robots for Heart Surgery” |
| 2006 | Yediot Aharonot (news section): "Snake cavern", December 11 |

- 2006 Globes: "Robotics – the new world", February 16
- 2005 Pittsburgh Post Gazette Business News: "CMU tech transfer office spawns 50 start-ups",
October 5

Television/Radio

- 2021** "A Doctors Word", Israel channel 11
- 2014 "Maze Muza": Meet the scientist, about robotics
- 2010 "Erev Hadash: Israekli channel 1 evening news", January 3
- 2009 "GALATZ: Retzuat Habitachon", December 30
- 2009 "Fox-News: America's Newsroom", June 11
- 2009 "BBC World News" – June 16
- 2008 "Saturday night news with Oshrat Kotler" – Israel channel 10, July 26
- 2007 "Science news" – Israel science channel 8, February 7
- 2006 "6 with" – the 6 PM evening news, Israel channel 2, December 11
- 2006 "In the morning" – the morning edition, Israel news channel 10, December 12