

### Current Positions:



- **Since 2015: Founder and CEO of:**  
**Sina Robotics & Medical Innovators Co., Ltd., Tehran, Iran.**  
**13 Products, Revenue: 2 MUSD/year**  
[www.SinaMed.ir](http://www.SinaMed.ir)
- **Since 2021: Cofounder and Director of:**  
**Robotic Telesurgery Training Centers at Bandung and Yogyakarta, Indonesia.**  
**Trainees: 50 Surgeons/year**
- **Since 2020: Founder and Director of:**  
**“Iran Advanced Clinical Training” (I ACT) center, Tehran University of Medical Sciences (TUMS), Tehran, Iran.**  
**Trainees: 40 Medical Specialist/year**  
[www.IACTcenter.ir](http://www.IACTcenter.ir)
- **Since 2022: Member of the Board of Directors of:**  
**Helal Iran Medical Devices Company (SOHA1), Red Crescent Medical Supply Organization, Tehran, Iran.**  
**Revenue: 20 MUSD/year**
- **Since 2020: Member of:**  
**“Simulation and Technology Enhanced Learning Committee”, Ministry of Health, Tehran, Iran.**
- **Since 2014: Founder and Director of:**  
**Evaluation Department of the Graduate and Postgraduate programs of Basic Sciences, School of Medicine, Tehran University of Medical Sciences, Tehran, Iran.**  
**Evaluated Programs: 31 graduate and post graduate educational programs/year**
- **Since 2013: Member of:**  
**Biomedical Engineering Examination and Evaluation Board, Ministry of Health, Tehran, Iran.**
- **Since 2013: Associate Professor and Deputy of Research Affairs at:**  
**Physics and Biomedical Engineering Department, School of Medicine, Tehran University of Medical Sciences (TUMS), Tehran, Iran.**  
**Average Graduated Students: 1 Ph.D., 1 M.Sc. / year**  
[www.TUMS.ac.ir/en](http://www.TUMS.ac.ir/en)
- **Since 2013: Deputy of Research Affairs and Director of Medical Robotics Lab. at:**  
**Research Centre for Biomedical Technologies and Robotics (RCBTR), Advanced Medical Technologies and Equipment Institute (AMTEI). Tehran, Iran.**  
**Average accomplished research project: 2 projects/year**  
[www.AMTEI.TUMS.ac.ir/en/](http://www.AMTEI.TUMS.ac.ir/en/)

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## Education:

(2012-2013): **National Elite Foundation (NEF) Postdoctoral Fellow**, Robotic Surgery Lab., Research Center for Science and Technology in medicine(RCSTIM), Tehran University of Medical Sciences, Tehran, Iran.

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(2006-2012): **Ph.D. in Mechanical Engineering**, Applied Design- Biomechanics and Robotics  
Mech. Eng. Dept., Sharif University of Technology (SUT), Tehran, Iran.  
Thesis: "Design, Analysis, Fabrication and Experimental Study of a Haptic Instrument for Large Organs Laparoscopic surgery"

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(2003-2006): **M.Sc. in Mechanical Engineering**, Biomechanics  
Mech. Eng. Dept., Sharif University of Technology (SUT), Tehran, Iran.  
Thesis: "Design of a Robotic Assistant for Laparoscopic Surgery",

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(1999-2003): **B.Sc. in Mechanical Engineering**, Solid Design  
Mech. Eng. Dept., School of Engineering, University of Yazd, Yazd, Iran.  
Bachelor Project: "Theory and Design of air cushion Craft (Hovercraft) "

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## Research Interests:

- **Robotic Surgery systems**
- **Robotic Rehabilitation systems**
- **Virtual Reality systems**

## Accomplished Research Projects:

1. Identifying and reducing unwanted vibrations in a robotic surgical arm, 2022.
2. 3D anatomy design and scenario of laparoscopic Cholecystectomy surgery with the aim of simulation in a virtual reality environment, 2022.
3. Architectural design of a robotic surgery in abdominal cavity surgeries, 2022.
4. Kinematic and kinetic calibration of a 7-degree-of-freedom guiding robot with application in robotic surgery using the neural network method, 2022.
5. Designing and prototyping the software for teaching the basic skills of the surgeon's hand-eye coordination in the robotic surgery simulator, 2021.
6. Pre-clinical study of the Sina robotic surgery system, 2022.
7. Design and implementation of a software to guide and encourage patients affected by stroke in the robotic wrist and finger rehabilitation system, 2020.
8. Development of a robotic orthosis control algorithm using EMG signals of the hand of stroke patients extracted from the Mayo armband, 2020.
9. Implementation and technical study of passive, active assisted, active and active resistive control modes in the robotic system for rehabilitation of fingers and wrists (Hand RoboHab), 2019.

10. Design and modeling of a continuous robot with the ability to control stiffness for intraluminal surgery, 2020.
11. Prototyping and experimental study of a flexible robotic surgical tool with the ability to control stiffness in the application of laparoscopic surgery, 2022.
12. Designing and modeling of a flexible robotic surgical tool with the ability to control stiffness in the application of laparoscopic surgery, 2022.
13. Design and prototyping of the mechanical interface of the ankle joint for the neuromuscular rehabilitation robot, 2019.
14. Design, prototyping and laboratory study of a tool for grasping large organs with flexible fingers in surgical application with minimal damage, 2019.
15. Designing and implementing an automatic tissue clamping algorithm for a wrist laparoscopic instrument, 2018.
16. Design and prototyping of an active robotic orthosis for the hands of hemiplegic patients, 2017.
17. Design, prototyping and clinical evaluation of the robotic system for mobilization of the Glenohumeral joint, 2016.
18. Evaluating the effect of repetitive transcranial magnetic stimulation (rTMS) on the balance of children with cerebral palsy (CP), 2016.
19. Quantitative description of the therapeutic effect of anti-gravity treadmill walking skill training on the motor ability of the lower limbs in children with cerebral palsy, 2015.
20. Examining clinical considerations, design and prototyping of the robotic finger rehabilitation system for patients affected by stroke, 2015.
21. Design and development of neuro-muscular rehabilitation system through proprioceptive neuromuscular facilitation using Kinect system, 2014.
22. Bilateral control of a single degree of freedom tele-robotic system with variable time delay simulation in the application of remote robotic surgery, 2013.
23. Construction of a new model of the Sina surgical robot, 2016.
24. Development of laparoscopic Cholecystectomy surgical training system in virtual reality environment, 2015.
25. Designing, manufacturing and production of spinal and epidural anesthesia education model, 2014.
26. Designing, manufacturing and clinical evaluation of a new tool for measuring compressive forces during spinal injections, 2013.
27. Introducing and evaluating a new solution for tracing surgical tools with minimal damage and its application in training surgeons, 2013.
28. Design and construction of uterine prolapse measuring system (Pap Q test), 2013.
29. Designing, manufacturing and clinical testing of an artificial anal sphincter, 2013.
30. Designing and prototyping a remote robotic surgical system with force feedback (Sina system), 2013.
31. Real-time simulation of tool-soft tissue interaction using element-free methods and its experimental validation, 2012.
32. Designing and prototyping a device for lifting and suspending the patient in a standing position for walking on a treadmill, 2012.

33. Designing and prototyping a robotic surgical system for laparoscopic surgery of large organs, 2012.
34. Adaptation of a surgeon assistant robot for Phytoscopic surgeries, 2012.
35. Design and implementation of intelligent control mode through image processing for a surgeon assistant robot in laparoscopic surgery, 2011.
36. Design and manufacture of a surgical instruments for laparoscopic peritoneal dialysis, 2010.
37. Designing and prototyping a smart hand rehabilitation device for post stroke patients, 2009.
38. Designing and prototyping a force feedback tool for laparoscopic surgery training in a virtual environment, 2008.
39. Semi-industrial production plan of a surgeon assistant robot in laparoscopic surgery, 2007.
40. Designing, manufacturing and clinical testing of a surgeon assistant robot in laparoscopic surgery, 2006.
41. Design and development of a 3D vision system for medical applications, 2005.

### **Supervised Ph.D. / M.Sc. Thesis:**

1. Development of robotic orthosis control algorithm using EMG signals of the hand of stroke patients extracted from Mayo armband, M.Sc., 2018.
2. Design and modeling of a continuous robot with the ability to control stiffness for intraluminal surgery, Ph.D., 2022.
3. Design and prototyping of a portable wrist, elbow and ankle rehabilitation robot, M.Sc., 2018.
4. Design, prototyping and clinical evaluation of the glenohumeral joint mobilization robotic system, Ph.D., 2019.
5. Design, prototyping and clinical evaluation of an active robotic orthosis for the hand of hemiplegic patients, Ph.D., 2020.
6. Quantitative description of the therapeutic effect of walking with an anti-gravity treadmill on the motor ability of the lower limbs in children with cerebral palsy, M.Sc., 2017.
7. Evaluating the effect of repetitive transcranial magnetic stimulation (rTMS) on the balance of children with cerebral palsy (CP) , M.Sc., 2016.
8. Examining clinical considerations, designing and prototyping the robotic finger rehabilitation system for patients affected by stroke, Ph.D., 2019.
9. Bilateral control of a telerobotic system with a rotational degree of freedom in the presence of force feedback by simulating a variable time delay in the application of remote robotic surgery, M.Sc., 2015.
10. Designing and implementing a system based on the combination of information from magnetic sensors and ultrasound images to guide the lumbar spine injection process, M.Sc., 2014.

11. Creation of interference patterns in the liver phantom using mechanical surface stimulation for elastometry, M.Sc., 2014.
12. Designing a game based on virtual reality for the rehabilitation of stroke patients, M.Sc., 2014.

## Patents:

No.	Title	Reg. No.	Date	Reg. Location
1	Robotic system for tele-surgery	US10219871B2	2019	USA
2	一种用于远程手术的机器人系统	CN107847282A	2018	China
3	Robotic system for tele-surgery	In Progress	2023	Indonesia
4	Adapting manual laparoscopic surgical instruments for robotic telesurgery applications	US10292779B2	2016	USA
5	发明名称 用于机器人远程手术应用的手动腹腔镜手术器械的装置	CN107771065A	2018	China
6	Adapting manual laparoscopic surgical instruments for robotic telesurgery applications	In Progress	2023	Indonesia
7	MINIMALLY INVASIVE HEART STABILIZER	US10292691B2	2017	USA
8	种微创心脏稳定器	CN107896483A	2018	China
9	MINIMALLY INVASIVE HEART STABILIZER	In Progress	2023	Indonesia
10	Handle for robotic surgery	Us11452573B2	2019	USA
11	Handle for robotic surgery	In Progress	2023	China
12	Handle for robotic surgery	In Progress	2023	Indonesia
13	Controlling a Laparoscopic Instrument	US20200222113A1	2020	USA
14	Controlling a Laparoscopic Instrument	In Progress	2023	Europe
15	Rehabilitation system for robotized mobilization of a Glenohumeral joint	US11298286B2	2019	USA
16	A FLEXIBLE SELF-RELIANT MANIPULATOR	WO2023194786A1	2022	PCT
17	A Wearable Assistive Robot	WO2023194790A1	2022	PCT
18	Robotic rehabilitation system for wrist and fingers	WO2022013594A1	2022	WIPO/PCT
19	A surgeon's assistant robot in laparoscopic surgery	40674	2007	Iran
20	laparoscopic surgical robots with four degrees of freedom and the ability to measure interaction forces	69928	2007	Iran
21	Robotic hand rehabilitation devices for people affected by stroke	56006	2008	Iran
22	Laparoscope holding robot with the ability to bend and change the length inside the abdomen	60567	2009	Iran
23	A foot suction gripper mechanism for laparoscopic surgery	60230	2009	Iran
24	Endoscopic instruments for surgery of large organs with minimal invasive method	58955	2009	Iran
25	5 degrees of freedom guiding robot equipped with force feedback for laparoscopic surgical training of large organs	69921	2011	Iran
26	Assist cameraman robot with the ability to automatically track and follow the surgical instrument	71412	2011	Iran
27	Diagnostic laparoscopic tools with the ability to measure the mechanical properties of living tissues during the operation	81480	2013	Iran
28	Wrist operated laparoscopic instrument activation robot	81434	2013	Iran
29	Glenohumeral joint mobilizing robot	97019	2017	Iran
30	Electromechanical valves to control the excretion of colostomy patients	96812	2018	Iran
31	Wrist and finger physiotherapy robot	104035	2019	Iran
32	Active Assistive Robotic Orthosis Using Cable Force Transmission System for Hand of Stroke Patients	101489	2019	Iran
33	Robotic system for tele-surgery (CIP)	US2023/0147674A1	2023	USA

## Publications:

Ref: Available online, Jan.2024: [https://scholar.google.com/citations?user=azW\\_AxAAAAAJ&hl=en&oi=ao](https://scholar.google.com/citations?user=azW_AxAAAAAJ&hl=en&oi=ao)

No	Authors	Title	Publication	Volume	Number	Pages	Year	Publisher
1	Aghanouri, Mehrnaz; Moradi, Hamid; Alibeik, Hossein A; Mirbagheri, Alireza;	Workspace and dexterity analysis of the hybrid mechanism master robot in Sinaflex robotic telesurgery system: An in vivo experiment	The International Journal of Medical Robotics and Computer Assisted Surgery	20	1	e2608	2024	
2	Mirbagheri, Alireza; Farahmand, Farzam; Alamdar, Alireza; Behzadipour, Saeed; Ghannadi, Borna; Jamshidifar, Hamed; Seyedhashemi, Seyedhamidreza;	Robotic system for tele-surgery					2023	US Patent 11,844,584
3	Alamdar, Alireza; Hanifeh, Sharzad; Mirbagheri, Alireza; Farahmand, Farzam;	A modified agile-eye mechanism for robotic manipulation of wristed laparoscopic instruments	Authorea Preprints				2023	Authorea
4	Amiri Tehrani Zade, Amin; Jalili Aziz, Maryam; Majedi, Hossein; Mirbagheri, Alireza; Ahmadian, Alireza;	Spatiotemporal analysis of speckle dynamics to track invisible needle in ultrasound sequences using convolutional neural networks: a phantom study	International Journal of Computer Assisted Radiology and Surgery			10-Jan	2023	Springer International Publishing Cham
5	Mohandesi, Fatemeh; Mirbagheri, Alireza; Mirbagheri, Mohammad Mehdi; Nakhostin Ansari, Nouredin; Kazemi, Rouzbeh;	Feasibility of Robot-Assistance Hand Physiotherapy in Post-Stroke Patients	Journal of Biomedical Physics and Engineering				2023	Shiraz University of Medical Sciences
6	Jamshidifar, Hamed; Farahmand, Farzam; Behzadipour, Saeed; Mirbagheri, Alireza;	Mechanical Design of a 5-DOF Robotic Interface for Application in Haptic Simulation Systems of Large-Organ Laparoscopic Surgery	Scientia Iranica				2023	Sharif University of Technology
7	Mirbagheri, Alireza; Yazdian, Seyed Muhammad; Farahmand, Farzam; Sarkar, Saeed; Moradi,	Robotic system for tele-surgery					2023	US Patent App. 18/091,291

	Mohammad Mehdi; Alamdar, Alireza; Vosough, Zahra; Filabi, Sajad Molla; Kheradmand, Pezhman; Karimian, Faramarz;							
8	Rudiman, Reno; Mirbagheri, Alireza; Candrawinata, Valeska Siulinda;	Assessment of robotic telesurgery system among surgeons: a single-center study	Journal of Robotic Surgery	17	6	2757-2761	2023	Springer London London
9	Mohandesi, Fatemeh; Mirbagheri, Alireza; Khabiri, Hamid; Mirbagheri, Mohammad M; Ansari, Nouredin N; Norouzi, Maryam; Kazemi, Rouzbeh; Aghanouri, Mehrnaz;	Design and Development of a Robotic System for Hand's Wrist-Fingers Rehabilitation	Scientia Iranica				2023	Sharif University of Technology
10	Yazdian, Seiedmuhammad; Mirbagheri, Alireza; Farahmand, Farzam;	Handle for robotic surgery					2022	US Patent 11,452,573
11	Azarsa, Mohammad Hassan; Mirbagheri, Alireza; Shadmehr, Azadeh; Karimi, Nouredin;	Rehabilitation system for robotized mobilization of a glenohumeral joint					2022	US Patent 11,298,286
12	Rostami, Elham; Ghassemi, Farnaz; Tabanfar, Zahra;	Improving the Classification of Real-World SSVEP Data in Brain-Computer Interface Speller Systems Using Deep Convolutional Neural Networks	Frontiers in Biomedical Technologies	9	4	248-254	2022	TUMS
13	Aghanouri, Mehrnaz; Moradi, Hamid; Alibeik, Hossein Arab; Mirbagheri, Alireza;	Workspace and Dexterity Investigation of the Master Robot in Sina flex Robotic Telesurgery System: An in Vivo Validation					2022	TechRxiv
14	Zade, Amin Amiri Tehrani; Aziz, Maryam Jalili;	An improved capsule network for glioma	Computers in Biology and Medicine	148		105917	2022	Pergamon

	Masoudnia, Saeed; Mirbagheri, Alireza; Ahmadian, Alireza;	segmentation on MRI images: A curriculum learning approach						
15	Zade, Amin Amiri Tehrani; Aziz, Maryam Jalili; Majedi, Hossein; Mirbagheri, Alireza; Ahmadian, Alireza;	Spatiotemporal analysis of speckle dynamics to track invisible needle in ultrasound sequences using Convolutional Neural Networks	bioRxiv				2022	Cold Spring Harbor Laboratory
16	Amiri Tehrani Zade, Amin; Aziz, Maryam Jalili; Masoudnia, Saeed; Mirbagheri, Alireza; Ahmadian, Alireza;	An improved capsule network for glioma segmentation on MRI images:: A curriculum learning approach					2022	
17	Pasyar, Pezhman; Arabalibeik, Hossein; Mohammadi, Mohammad; Rezazadeh, Hassan; Sadeghi, Vahid; Askari, Milad; Mirbagheri, Alireza;	Ultrasound elastography using shear wave interference patterns: A finite element study of affecting factors	Physical and Engineering Sciences in Medicine	44	1	253-263	2021	Springer International Publishing
18	Azarsa, Mohammad Hassan; Mirbagheri, Alireza; Hosseini, Seyed Ramezan; Shadmehr, Azadeh; Karimi, Nouredin;	Objective measurement of Inferior-Directed stiffness in glenohumeral joint using a specially designed robotic device in healthy shoulders; Within-and Between-Session reliability	Journal of Biomechanics	127		110663	2021	Elsevier
19	Alamdard, Alireza; Hanifeh, Sharzad; Mirbagheri, Alireza; Farahmand, Farzam;	A modified agile-eye mechanism for robotic manipulation of wristed laparoscopic instruments					2021	TechRxiv
20	Aghanouri, Mehrnaz; Kheradmand, Pejman; Mousavi, Milad; Moradi, Hamid; Mirbagheri, Alireza;	Kinematic and Workspace Analysis of the Master Robot in the Sina flex Robotic Telesurgery System	2021 43rd Annual International Conference of the IEEE Engineering in Medicine & Biology Society (EMBC)			4777-4780	2021	IEEE
21	Imani, Zeinab; Milan, Nesa; Nematian,	The Evaluation of Intra-Articular Injection of	Journal of Orthopedic and Spine Trauma			81-4	2021	



	Hossein; Aghaghazvini, Leila; Mohebbi, Niayesh; Sedaghat, Mojtaba; Sefidan, Mohammad Bagher Ahadpour; Mirbagheri, Alireza; hossein Nabian, Mohammad Hossein;	Bevacizumab on the Prevention of Physeal Bar Formation in Type 4 Salter Harris Model in Rats: A Pilot Study						
22	Habibnejad Korayem, A; Khoshnood, AM; Bataleblu, Abbas; Shirbandi, Afshin; Yousefi-Koma, Aghil; Kalhor, Ahmad; Moori, Ahmad; Ahmadjou, Ahmadreza; Arabhosseini, Akbar; Aminzadeh, Ali;	The RSI International Conference on Robotics & Mechatronics 17-19 November 2021					2021	
23	Toumajpour, Sharafeddin; Moradi, Hamid; Mirbagheri, Alireza;	Arrangement Optimization of Robotic surgery Arms at Sina flex surgical platform	2021 9th RSI International Conference on Robotics and Mechatronics (ICRoM)			542-547	2021	IEEE
24	Mirbagheri, Alireza; Farahmand, Farzam; Sarkar, Saeed; Alamdar, Alireza; Moradi, Mehdi; Afshari, Elnaz;	The sina robotic telesurgery system	Handbook of Robotic and Image-Guided Surgery			107-121	2020	Elsevier
25	Alamdar, Alireza; Farahmand, Farzam; Behzadipour, Saeed; Mirbagheri, Alireza;	A geometrical approach for configuration and singularity analysis of a new non-symmetric 2DOF 5R Spherical Parallel Manipulator	Mechanism and Machine Theory	147		103747	2020	Pergamon
26	Mirbagheri, Alireza; Owlia, Mohammadhasan; Khabbazan, Mostafa; Moradi, Mehdi; Mohandes, Fatemeh;	Introducing a Robotic Lumbar Puncture Simulator with Force Feedback: LP Sim	Frontiers in Biomedical Technologies	7	1	74-81	2020	
27	Amirkhani, Golchehr; Farahmand, Farzam; Yazdian, Seied Muhammad;	An extended algorithm for autonomous grasping of soft tissues during robotic surgery	The International Journal of Medical Robotics and	16	5	15-Jan	2020	

	Mirbagheri, Alireza;		Computer Assisted Surgery					
28	Alamdar, Alireza; Samandi, Pouya; Hanifeh, Shahrzad; Kheradmand, Pejman; Mirbagheri, Alireza; Farahmand, Farzam; Sarkar, Saeed;	Investigation of a Hybrid Kinematic Calibration Method for the "Sina" Surgical Robot	IEEE Robotics and Automation Letters	5	4	5276-5282	2020	IEEE
29	Mirbagheri, Alireza; Amirkhani, Golchehr; Yazdian, Seiedmuhammad; Farahmand, Farzam; Sarkar, Saeed;	Controlling a laparoscopic instrument					2020	US Patent App. 16/832,439
30	Mirbagheri, Alireza; Farahmand, Farzam; Sarkar, Saeed; Alamdar, Alireza; Moradi, Mehdi; Afshari, Elnaz;	Gc0007					2020	
31	Farahmand, Farzam; Mirbagheri, Alireza; Behzadipour, Saeed; Alamdar, Alireza; Hanifeh, Shahrzad; Khadem, Seyed Mohsen; Moradi, Mohamad Mehdi;	Adapting manual laparoscopic surgical instruments for robotic telesurgery applications					2019	US Patent 10,292,779
32	Mirbagheri, Alireza; Farahmand, Farzam; Alamdar, Alireza; Behzadipour, Saeed; Ghannadi, Borna; Jamshidifar, Hamed; Seyedhashemi, Seyedhamidreza;	Robotic system for tele-surgery					2019	US Patent 10,219,871
33	Farahmand, Farzam; Houshmand, Arvin; Mirbagheri, Alireza; Mansouri, Saeed;	Minimally invasive heart stabilizer					2019	US Patent 10,292,691
34	Alamdar, Alireza; Hanife, Shahrzad; Farahmand, Farzam; Behzadipour, Saeed; Mirbagheri, Alireza;	A minimally invasive robotic surgery approach to perform totally endoscopic coronary artery bypass on beating hearts	Medical Hypotheses	124		76-83	2019	Churchill Livingstone

35	Mirbagheri, Alireza; Farahmand, Farzam; Alamdar, Alireza; Behzadipour, Saeed; Ghannadi, Borana; Jamshidifar, Hamed; Seyedhashemi, Seyedhamidreza;	Robotic system for tele-surgery					2019	US Patent App. 16/291,007
36	Azarsa, Mohammad Hassan; Mirbagheri, Alireza; Shadmehr, Azadeh; Karimi, Nouredin; Mirbagheri, M Mehdi;	Design and Preliminary Evaluation of a Novel Robotic System for Mobilization of Glenohumeral Joint	2019 41st Annual International Conference of the IEEE Engineering in Medicine and Biology Society (EMBC)			5411-5414	2019	IEEE
37	Lotfian, Mahboube; Dadashi, Farnoosh; Rafieenazari, Zahra; Shahroki, Amin; Rasteh, Mehrnaz; Molavi, Mohammad; Mirbagheri, Alireza; Mirbagheri, Mehdi M;	The effects of anti-gravity treadmill training on gait characteristics in children with cerebral palsy	2019 41st Annual International Conference of the IEEE Engineering in Medicine and Biology Society (EMBC)			5256-5259	2019	IEEE
38	Dadashi, Farnoosh; Lotfian, Mahboube; Rafieenazari, Zahra; Shahroki, Amin; Irani, Ashkan; Mirbagheri, Alireza; Mirbagheri, Mehdi M;	Does repetitive Transcranial Magnetic Stimulation (rTMS) have therapeutic effects on Dynamic Balance of Children with Cerebral Palsy?	2019 41st Annual International Conference of the IEEE Engineering in Medicine and Biology Society (EMBC)			425-428	2019	IEEE
39	Dadashi, Farnoosh; Shahroki, Amin; Nourian, Rohollah; Irani, Ashkan; Molavi, Mohammad; Rafieenazari, Zahra; Mirbagheri, Mehdi M; Mirbagheri, Alireza;	The effects of repetitive transcranial magnetic stimulation (rTMS) on balance control in children with cerebral palsy	2019 41st Annual International Conference of the IEEE Engineering in Medicine and Biology Society (EMBC)			5241-5244	2019	IEEE
40	Dadashi, Farnoosh; Kharazi, Mohamad Reza; Lotfian, Mahboube; Shahroki, A; Mirbagheri,	The effects of lower body positive pressure treadmill training on dynamic balance of	2018 40th Annual International Conference of the IEEE Engineering in Medicine and			2487-2490	2018	IEEE

	Alireza; Mirbagheri, Mehdi M;	children with cerebral palsy	Biology Society (EMBC)					
41	Valizadeh, Sina; Makkiabadi, Bahador; Mirbagheri, Alireza; Soozande, Mehdi; Manwar, Rayyan; Mozaffarzadeh, Moein; Nasiriavanaki, Mohammadreza;	An image registration-based technique for noninvasive vascular elastography	Photons Plus Ultrasound: Imaging and Sensing 2018	10494		703-708	2018	SPIE
42	Nazarynasab, Dariush; Farahmand, Farzam; Mirbagheri, Alireza; Afshari, Elnaz;	A novel laparoscopic grasper with two parallel jaws capable of extracting the mechanical behaviour of soft tissues	Journal of Medical Engineering & Technology	41	5	339-345	2017	Taylor & Francis
43	Lotfian, Mahboube; Kharazi, Mohamad Reza; Mirbagheri, Alireza; Dadashi, Farnoosh; Nourian, Rohollah; Mirbagheri, Mehdi M;	Therapeutic effects of an anti-gravity treadmill (AlterG) training on gait and lower limbs kinematics and kinetics in children with cerebral palsy	2017 International Conference on Rehabilitation Robotics (ICORR)			170-174	2017	IEEE
44	Pasyar, Pehman; Sadeghi, Vahid; Rezaadeh, Hassan; Askari, Milad; Mirbagheri, Alireza; Alavian, Moayed; Arabalibeik, Hossein;	A finite element study of ultrasound elastography using shear wave interference patterns generated by miniature surface sources	Frontiers in Biomedical Technologies	4	2-Jan	18-30	2017	
45	Amini, Abasali; Mirbagheri, Alireza; Jafari, Amir Homayoun;	Bilateral Control of a Nonlinear Teleoperation Robotic System with Time Varying Delay Using Optimal Control Method	2017 24th National and 2nd International Iranian Conference on Biomedical Engineering (ICBME)			330-333	2017	IEEE
46	Hanifeh, Shahrzad; Alamdar, Alireza; Farahmand, Farzam; Mirbagheri, Alireza;	An adapting mechanism to manipulate manual wristed laparoscopic instruments by a robotic surgery system	Int. Conf. Control. Dyn. Syst. Robot		Jun-19		2017	
47	Khadem, Seyed Mohsen; Behzadipour, Saeed; Mirbagheri,	A modular force-controlled robotic instrument for minimally invasive surgery–	The International Journal of Medical Robotics and	12	4	620-633	2016	

	Alireza; Farahmand, Farzam;	efficacy for being used in autonomous grasping against a variable pull force	Computer Assisted Surgery						
48	Amini Khoiy, Keyvan; Mirbagheri, Alireza; Farahmand, Farzam;	Automatic tracking of laparoscopic instruments for autonomous control of a cameraman robot	Minimally Invasive Therapy & Allied Technologies	25	3	121-128	2016	Taylor & Francis	
49	Lotfian, Mahboube; Mirbagheri, Mehdi M; Kharazi, Mohamad Reza; Dadashi, Farnoosh; Nourian, Rohollah; Irani, Ashkan; Mirbagheri, Alireza;	Pendulum test measure correlates with gait parameters in children with cerebral palsy	2016 38th Annual International Conference of the IEEE Engineering in Medicine and Biology Society (EMBC)			1708-1711	2016	IEEE	
50	Owlia, Mohammadhasan; Khabbazan, Mostafa; Mirbagheri, Mehdi M; Mirbagheri, Alireza;	Real-time tracking of laparoscopic instruments using kinect for training in virtual reality	2016 38th Annual International Conference of the IEEE Engineering in Medicine and Biology Society (EMBC)			3945-3948	2016	IEEE	
51	Owlia, M; Azarsa, MH; Khabbazan, M; Mirbagheri, A;	Proprioceptive Neuromuscular Facilitation Exercises of Upper Extremities Assessment Using Microsoft Kinect Sensor and Color Marker in a Virtual Reality Environment	International Journal of Biomedical and Biological Engineering	10	9	490-494	2016		
52	Owlia, Mohammadhasan; Khabbazan, Mostafa; Moradi, Mehdi; Khan-Mohammadi, Hadi; Ashiri, Mehrangiz; Ansari, Mehdi Seraj; Alamdar, Alireza; Mirbagheri, Alireza;	Introduction of the SinaSim: A Low-Cost Laparoscopic Surgery Simulator Using Virtual Reality Environment	Frontiers in Biomedical Technologies	2	1	55-59	2015		
53	Daemi, Najmeh; Ahmadian, Alireza; Mirbagheri, Alireza; Ahmadian, AH; Saberi, Hooshang; Amidi, Fardin; Alirezaie, Javad;	Planning screw insertion trajectory in lumbar spinal fusion using pre-operative CT images	2015 37th Annual International Conference of the IEEE Engineering in Medicine and Biology Society (EMBC)			3639-3642	2015	IEEE	

54	Dehghani Ashkezari, Hossein; Mirbagheri, Alireza; Behzadipour, Saeed; Farahmand, Farzam;	A mass-spring-damper model for real time simulation of the frictional grasping interactions between surgical tools and large organs	Scientia Iranica	22	5	1833-1841	2015	Sharif University of Technology
55	Mirbagheri, Alireza; Farahmand, Farzam; Ghanadi, Borna; Khoiy, Keyvan Amini; Porsa, Sina; Shamsollahi, Mohammad Javad; Owlia, Mohammad Hasan; Karimian, Faramarz; Toulabi, Karamallah;	Operation and human clinical trials of robolens: an assistant robot for laparoscopic surgery	Frontiers in Biomedical Technologies	2	3	184-190	2015	
56	Hadavand, Mostafa; Mirbagheri, Alireza; Behzadipour, Saeed; Farahmand, Farzam;	A novel remote center of motion mechanism for the force-reflective master robot of haptic tele-surgery systems	The International Journal of Medical robotics and computer assisted surgery	10	2	129-139	2014	
57	Taslimi, Shervin; Samiee, Haydeh; Jafari, Atousa; Asgari, Zahra; Mirbagheri, Alireza; Jafari, Ali; Karimian, Faramarz; Farahmand, Farzam;	Comparing the operational related outcomes of a robotic camera holder and its human counterpart in laparoscopic ovarian cystectomy: a randomized control trial	Frontiers in Biomedical Technologies	1	1	42-47	2014	
58	Saedi, Soheil; Mirbagheri, Alireza; Jafari, Ali; Farahmand, Farzam;	A local hybrid actuator for robotic surgery instruments	International Journal of Biomechanics and Biomedical Robotics 33	3	2	100-105	2014	Inderscience Publishers Ltd
59	Nazarinasab, Dariush; Mirbagheri, Alireza; Farahmand, Farzam; Afshari, Elnaz;	Design and Analysis of a Novel Laparoscopic Instrument for Measuring the in Vivo Biomechanical Characteristics of Large Intra-abdominal Organs	Iranian Journal of Biomedical Engineering	7	4	311-319	2014	Iranian Society for Biomedical Engineering
60	Mirbagheri, Alireza; Farahmand, Farzam;	A triple-jaw actuated and sensorized instrument for	The International Journal of Medical	9	1	83-93	2013	

		grasping large organs during minimally invasive robotic surgery	Robotics and Computer Assisted Surgery					
61	Mirbagheri, Alireza; Baniasad, Mina Arab; Farahmand, Farzam; Behzadipour, Saeed; Ahmadian, Alireza;	Medical robotics: State-of-the-Art applications and research challenges	International Journal of Healthcare Information Systems and Informatics (IJHISI)	8	2	14-Jan	2013	IGI Global
62	Mirbagheri, Alireza; Farahmand, Farzam;	Design, analysis, and experimental evaluation of a novel three-fingered endoscopic large-organ grasper	Journal of Medical Devices	7	2		2013	American Society of Mechanical Engineers Digital Collection
63	Farahmand, Farzam; Amirnia, Hamid R; Sarkar, Saeed; Behzadipour, Saeed; Ahmadian, Alireza; Mirbagheri, Alireza;	An overview of medical robotics in Iran	Annales des Mines-Realites industrielles	2012	1	65-75	2012	Eska
64	Ashkezari, Hossein Dehghani; Mirbagheri, Alireza; Farahmand, Farzam; Behzadipour, Saeed; Firoozbakhsh, Keikhosrow;	Real time simulation of grasping procedure of large internal organs during laparoscopic surgery	2012 annual international conference of the IEEE engineering in medicine and biology society			924-927	2012	IEEE
65	Alamdardar, Alireza; Mirbagheri, Alireza; Farahmand, Farzam; Durali, Mohammad;	Design of a 4 DOF Laparoscopic Surgery Robot for Manipulation of Large Organs.	MMVR			12-Aug	2012	
66	Hadavand, Mostafa; Mirbagheri, Alireza; Salarieh, Hasan; Farahmand, Farzam;	Design of a force-reflective master robot for haptic telesurgery applications: Robomaster1	2011 Annual International Conference of the IEEE Engineering in Medicine and Biology Society			7037-7040	2011	IEEE
67	Mirbagheri, A; Farahmand, F; Meghdari, A; Karimian, F;	Design and development of an effective low-cost robotic cameraman for laparoscopic surgery: RoboLens	Scientia Iranica	18	1	105-114	2011	No longer published by Elsevier
68	Tirehdast, Mojdeh; Mirbagheri, Alireza; Asghari,	Modeling of interaction between a three-fingered surgical	Medicine Meets Virtual Reality 18			663-669	2011	IOS Press

	Mohsen; Farahmand, Farzam;	grasper and human spleen						
69	Saedi, Soheil; Mirbagheri, Alireza; Farahmand, Farzam;	Conceptual design of a miniaturized hybrid local actuator for Minimally Invasive Robotic Surgery (MIRS) instruments	2011 Annual International Conference of the IEEE Engineering in Medicine and Biology Society			2140- 2143	2011	IEEE
70	Mardani, Sh; Mirbagheri, A; Amin, M; Ghasemian, M;	Determination of biokinetic coefficients for activated sludge processes on municipal wastewater	Journal of Environmental Health Science & Engineering	8	1	25-34	2011	
71	Mirbagheri, Alireza; Farahmand, Farzam;	Design and analysis of an actuated endoscopic grasper for manipulation of large body organs	2010 Annual International Conference of the IEEE Engineering in Medicine and Biology			1230- 1233	2010	IEEE
72	Mirbagheri, Alireza; Yahyazadehfar, Mobin; Farahmand, Farzam;	Conceptual design of a novel laparoscopic instrument for manipulation of large internal organs	Frontiers in Biomedical Devices	49453		79-80	2010	American Society of Mechanical Engineers
73	Tirehdast, Mojdeh; Mirbagheri, Alireza; Farahmand, Farzam; Asghari, Mohsen;	Finite element modeling of spleen tissue to analyze its interaction with a laparoscopic surgery instrument	Engineering Systems Design and Analysis	49187		103- 107	2010	
74	Ahmadi, Ali Mohammad Shariatmadar; Shamsollahi, Mohammad Javad; Mirbagheri, Alireza; Farahmand, Farzam;	Design, optimization and experimental evaluation of a novel tactile sensor for large surgical grasper	2010 2nd International Conference on Mechanical and Electronics Engineering	2		V2- 111- V2-116	2010	IEEE
75	Amini, K; Mirbagheri, A; Farahmand, F; Bagheri, S;	Marker-free detection of instruments in laparoscopic images to control a cameraman robot	Proceedings of the ASME 2010 International Design Engineering Technical Conferences & Computers and Information in Engineering Conference IDETC/CIE, Montreal, Quebec, Canada				2010	



76	KARIMIAN, SF; MIRBAGHERI, AR; Farahmand, F; TOULABI, KAA; Rabani, A; Sarkar, S;	Clinical Evaluation Of A New Camera Holder Robot For Laparoscopic Surgery- Preliminary Results					2010	IRANIAN JOURNAL OF SURGERY
77	Rashedi, E; Mirbagheri, A; Taheri, B; Farahmand, F; Vossoughi, GR; Parnianpour, M;	Design and development of a hand robotic rehabilitation device for post stroke patients	2009 Annual International Conference of the IEEE Engineering in Medicine and Biology Society			5026- 5029	2009	IEEE
78	Basafa, Ehsan; Sheikholeslami, M; Mirbagheri, A; Farahmand, F; Vossoughi, GR;	Design and implementation of series elastic actuators for a haptic laparoscopic device	2009 Annual International Conference of the IEEE Engineering in Medicine and Biology Society			6054- 6057	2009	IEEE
79	Abolfazli, R; Mirbaghri, A; Zabihi, A; Samadzadeh, S;	Autism and celiac disease: failure to validate the hypothesis that a link might exist	JOURNAL OF NEUROLOGY	256		S182- S183	2009	DR DIETRICH STEINKOPFF VERLAG TIERGARTENSTRASSE 17, 69121 HEIDELBERG, GERMANY
80	Abolfazli, R; Mirbagheri, A; Anari, M Rabbani; Samadzadeh, S;	PO10-TU-67 The association of celiac disease with multiple sclerosis	Journal of the Neurological Sciences		285	S214	2009	
81	Basafa, Ehsan; Heidari, Z; Tamaddoni, H; Mirbagheri, A; Haddad, O; Parnianpour, M;	The effect of fatigue on recurrence parameters of postural sway	Journal of Biomechanics	40	2	S362	2007	New York: Pergamon Press, 1968-
82	Vazirian, Samra; Abolfazli, Roya; Mirbagheri, Amir; Hosseini, Mahmoud Eshagh; Zabihi, Ali;	Relationship between Autism and Celiac Disease: a case- control study	NEUROLOGY	68	12	A48- A48	2007	LIPPINCOTT WILLIAMS & WILKINS 530 WALNUT ST, PHILADELPHIA, PA 19106-3621 USA
83	Mirbagheri, Amir; Sadeghi, Amir; Amouie, Mahasti; Mansouri, Siavosh; Frootan, Mojgan; Malekzadeh, Reza;	Pyloric Injection of Botulinum Toxin for the Treatment of Refractory Gastroesophageal Reflux Disease Accompanied with Gastroparesis	Govaresh	12	3	161- 167	2007	
84	Mirbagheri, A; Farahmand, F; Meghdari, A; Sayyaadi, H; Savoj, L; Mirbagheri, E;	Design of a robotic cameraman with three actuators for laparoscopic surgery	Frontiers in Biomedical Devices	47632		41-42	2006	
85	Hoviattalab, Maryam; Narimani, Roya;	An Investigation on Human vibration Analysis	International Design Engineering	47381		2607- 2612	2005	

	Mirbagheri, Alireza;	Using Image Processing Method	Technical Conferences and Computers and Information in Engineering Conference					
86	Mirbagheri, AR; Narimani, R; HOVIATTALAB, M;	DEVELOPMENT OF 2D VIBRATION MEASURING SYSTEM USING IMAGE PROCESSING METHOD; AN INVESTIGATION ON FORCED VIBRATION OF HUMAN BODY IN VERTICAL DIRECTION					2005	MECHANICAL ENGINEERING SHARIF (SHARIF: MECHANICAL ENGINEERING)
87	Khoiy, Keyvan Amini; Mirbagheri, Alireza; Farahmand, Farzam;	Automatic tracking of laparoscopic instruments for autonomous control of						IEEE
88	Owlia, M; Azarsa, MH; Khabbazan, M; Mirbagheri, A;	International Journal of Medical, Medicine and Health Sciences						IEEE

## Honors and Achievements:

- 🌟 **1<sup>st</sup> choice of the best technology export award, TUMS (2024)**
- 🌟 **Iran\_ Indonesia program for Cooperation and Joint investment for Technology Transfer of Robotic Tele-Surgery Technology (2020-2024)**
- 🌟 **1<sup>st</sup> choice of Iran high-tech projects for investment (2019)**
- 🌟 **1<sup>st</sup> choice of China Intellectual Property, Innovation and Entrepreneurship Contest, IPIEC Global (2017)**
- 🌟 **Razi Award (1<sup>st</sup> rank in the 17<sup>th</sup> Razi Research Festival on Medical Sciences, Innovations and Inventions division), (2011)**
- 🌟 **Khwarizmi Youth Award (1<sup>st</sup> rank in "The 11<sup>th</sup> Khwarizmi Youth Nation-Wide Festival", Robotic surgery Competition division), (2009)**
- 🌟 **Iranian National Elite Foundation (NEF) Research and Innovation Grant (2009)**
- 🌟 **1<sup>st</sup> rank in "Sharif Technopreneurship and Job Developer Festival", in the best Idea Planners section), (2008)**
- 🌟 **Sharif University of Technology Exceptional Talents Fellowship (2008- 2009)**
- 🌟 **Honor of Sharif Stars (2008)**
- 🌟 **Sheikh Bahae'i Gold Board (2<sup>nd</sup> rank in "The 4<sup>th</sup> Sheikh Bahai Technopreneurship Nation-Wide Festival", in the best Business Planners section), (2008)**
- 🌟 **Iranian National Elite Foundation (NEF) Award (about 30.000 \$ awarded to the PhD student selected as an elite by NEF) (2008-2011)**

- **Khwarizmi Youth Award** (2<sup>nd</sup> rank in "The 9<sup>th</sup> **Khwarizmi Youth Nation-Wide Festival**", in the Applied researches Division), (2007)
- "**The Best Nation-Wide Applied M.S Thesis Award of the Year**" selected by Iranian Society of Mechanical Engineers (2007), (ISME, Dr. Afshari's Award)
- 2<sup>nd</sup> rank in **Iran Nation-Wide Health Research** Selected by Ministry Of Health and Medical Education (2007)
- Distinguished student selected by **SUT Exceptional Talents Development Office** for Ph.D. program in SUT without Entrance Examination (2006)
- Be amongst top five Department Students – Sharif University of Technology (2003- 2005)
- 3<sup>rd</sup> Rank amongst Department Alumni – University of Yazd (2003)
- 1<sup>st</sup> Rank amongst Department and Engineering School Students – University of Yazd (1999- 2000)
- 4<sup>th</sup> rank in nation-wide Pre-university entrance examination (1998)
- Awarded honor of Distinguished Student in Emam Mohamad Bagher Festival – Emam Mohamad Bagher Educational Institute (1998)
- Selective Student in the Nation-Wide Scientific Olympiad of Physics at the First Stage- Iran (1998)
- 1<sup>st</sup> Rank in the Nation-Wide (shahed) Scientific Olympiad– Iran (1995)

## Affiliations:

- Associate Editor of Journal of "**Frontiers in Biomedical Technologies**", **Tehran Uni. of Medical Science.** .(Since Jan. 2017)
- Referee expert of research proposal at **Tehran Uni. of Medical Science.** .(Since Nov. 2011)
- Editorial Board Member of "**Advances in Robotics and Automation**" journal.(Since Sept. 2011)
- Master adviser of **Industrial Development and Renovation Organization of Iran (IDRO)**, in Robotics Project, Feb. 2007- 2016.
- Member: **ASME** (American Society of Mechanical Eng.). (Since May. 2010)
- Member: **IEEE** (Institute of Electrical and Electronics Engineers), (Since May. 2010)
- Member: **IEEE/EMBS** (Engineering in Medicine and Biology Society), since Fall 2010.
- Member: **ISBME** (Iranian Society for Biomedical Engineering), Fall 2003- Present.
- Member: **Nano-Technology Expertness Committee** in Biomedical Engineering, under Supervision of ISBME, Fall 2003- Present.
- Member: Research Center for Science and Technology in Medicine (**RCSTIM**), Robotic Surgery Group, Fall2005- Present.

## Invited Lectures and Workshops

- "Design, Analysis and Experimental Study of a Haptic Endoscopic Instrument for Manipulation of Large Organs", at "Doctoral Consortium for Medical Simulation and Robotics", **Chicago, Illinois, USA**, March 11th, 2010.
- "Introducing of RCSTIM Robotic Surgery Lab. and Development of Robolens", at Robotic & Computer Assisted Surgery Workshop, 34<sup>rd</sup> Annual Scientific Congress of Iranian Association of Surgeons, **Tehran, Iran**, May. 1- 5, 2010.

- "Haptic Endoscopic Instrument for Large Organ Manipulation", at "2010 North American Summer School in Surgical Robotics and Simulation", **Uni. of Washington at Seattle, WA, USA**, Aug. 23-27, 2010.
- "Overview of Robotic Surgery Projects at RCSTIM/RSL", at Laboratory for Computational Sensing and Robotics (LCSR), **Johns Hopkins University, Baltimore, MD, USA**, Sept. 10. 2010.
- "Overview of Robotic Surgery Projects at RCSTIM/RSL", at the **School of Engineering, University of California, Irvine, CA, USA**, Sept. 21. 2010.

### Scientific and Industrial Training Course:

- "2010 North American Summer School in Surgical Robotics and Simulation", BioRobotics Lab., **Uni. of Washington** at Seattle, WA, USA, Aug. 23-27, 2010.
- Visiting student at Laboratory for Computational Sensing and Robotics (LCSR), **Johns Hopkins University**, Baltimore, MD, USA, Sept. 2010.
- Visiting student at Harvard Biorobotics Laboratory, **Harvard University**, School of Eng. and Applied Science, Cambridge, MA, USA, 2010.
- Visiting student at MIT computer Science and Artificial Intelligence Lab., **Massachusetts institute of Tech. (MIT)**, Cambridge, MA, USA, 2010.
- "Applied CNC Programming", Isfahan Occupational and Technical Center, Jun. 2001- Sep. 2001.
- "Applied Die Casting", Isfahan Occupational and Technical Center, Jun. 2001- Sep. 2001.
- "Applied Auto Mechanic", Isfahan Occupational and Technical Center, Jun. 2000- Sep. 2000.

### Interests and Activities

Maintenances and Technical hand job, Drawing, Riding and Traveling.