

Curriculum Vitae

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1. Personal Information

Name Jaesung Hong
Telephone +82-53-785-6201
Email jhong@dgist.ac.kr
Website <http://sr.dgist.ac.kr>
Address E5-509, Department of Robotics Engineering, DGIST,
333, Techno-jungang-daero, Hyeonpung-myeon,
Dalseong-gun, Daegu, Republic of Korea



2. Biographical Summary

Jaesung Hong is a professor of Department of Robotics Engineering, Daegu Gyeongbuk Institute of Science and Technology (DGIST), South Korea. His research interests include augmented reality for medicine, surgical navigation, and surgical robotics.

At the University of Tokyo, he has developed the first US-guided needle insertion robot tracking a movable and deformable organ. This was reported in *Physics in Medicine and Biology* in 2004, and has been frequently cited so far. While he worked at Kyushu University Hospital in Japan, he developed customized surgical navigation systems, and clinically applied them in various surgeries, which included percutaneous ablation therapies for liver tumors, cochlear implant surgeries, neurosurgeries for gliomas, and dental implant surgeries.

After moving to DGIST, a research-oriented university fully supported by the Korean government, he developed a portable, AR-based surgical navigation system, which has been used in tibia tumor resections and orthognathic surgeries in collaboration with major hospitals of Korea, including the Seoul National University Hospital of Bundang and Samsung Seoul Hospital. He is a specialist who is familiar with both engineering and clinical medicine.

Since 2011, he has been a board member of Korean Society of Medical Robotics as financial and international directors. Since 2015, he has been a board member of Asian Society of Computer-aided Surgery being responsible for international networking. Since 2016, he has joined the IEEE/RAS technical committee on surgical robotics as a co-chair, and worked as an associate editor for IEEE RA-L.

3. Education

Apr. 2001 – Mar. 2004. PhD of Frontier Science, Graduate School of Frontier Science,
The University of Tokyo, Japan
(Thesise: Image-guided needle insertion instrument adapted to organ
motion and deformation)

Feb. 1999 - Feb. 2000. Research student, Information Engineering,
Toyohashi University of Technology, Japan

Mar. 1997 - Feb. 1999. Coursework completion for PhD, Graduate School of Electronics,
Kyungpook National University, Korea

Mar. 1995 - Feb. 1997. Master of Engineering, Graduate School of Electronics,
Kyungpook National University, Korea

Mar. 1991 - Feb. 1995. Bachelor of Engineering, Graduate School of Electronics,
Kyungpook National University, Korea

4. Position and Appointments

Mar. 2017 - Present Professor, Department of Robotics Engineering, DGIST

Mar. 2015 - Present Department Chair, Department of Robotics Engineering, DGIST

Oct. 2010 - Feb. 2017 Associate Professor, Department of Robotics Engineering, DGIST

Apr. 2010 - Sep. 2010 Associate Professor, Innovation Center for Medical Redox Navigation,
Kyushu University

Jan. 2008 - Mar. 2010 Research Associate Professor, Innovation Center for Medical Redox
Navigation, Kyushu University

May. 2005 - Dec. 2007 Research Assistant Professor, Faculty of Medical Sciences, Kyushu
University

Apr. 2004 - Apr. 2005 JSPS Foreign Researcher, Graduate School of Information Science and
Technology, The University of Tokyo

5. Journal Publication (selected)

- [31] Cho H, Park Y, Gupta S, Yoon C, Han I, Kim H, Choi H, **Hong J**, Augmented reality in bone tumour resection, *Bone Joint Res*, 6(3):137-143, 2017
- [30] Jung K, Choi H, Hong H, Adikrishna A, Jeon I, **Hong J***, A hands-free region-of-interest selection interface for solo surgery with a wide-angle endoscope: preclinical proof of concept, *Surg Endosc*, 31(2):974-980, 2017
- [29] Choi H, Park Y, Lee S, Ha H, Kim S, Cho H, **Hong J***, A portable surgical navigation device to display resection planes for bone tumor surgery, *Minim Invasive Ther Allied Technol*, 13:1-10, 2017
- [28] Shim S, Kang T, Ji D, Choi H, Joung S, **Hong J***, An all-joint-control master device for single-port laparoscopic surgery robots, *Int J Comput Ass Rad*, 11(8):1547-1557, 2016
- [27] Jung K, Kang D, Aashay L, Adikrishna A, **Hong J***, Jeon I, A new wide-angle arthroscopic system: a comparative study with a conventional 30° arthroscopic system, *Knee Surg Sport Tr A*, 24(5):1722-1729, 2016
- [26] Lim H, Matsumoto N, Cho B, **Hong J**, Yamashita M, Hashizume M, Yi B, Semi-manual mastoidectomy assisted by human-robot collaborative control – A temporal bone replica study, *Auris Nasus Larynx*, 43(2):161-165, 2016
- [25] Choi H, Cho B, Masamune K, Hashizume M, **Hong J***, An Effective Visualization Technique for Depth Perception in Augmented Reality-based Surgical Navigation, *Int J Med Robot Comp*, 12(1):62-72, 2016
- [24] Jeon S, Lee G, Jeon Y, Park I, **Hong J*** and Kim J, A preliminary study on surgical navigation for epiduroscopic laser neural decompression, *P I Mech Eng H*, 229(10):693-702, 2015

- [23] Jeon S, Park J, Chien J, **Hong J***, A hybrid method to improve target registration accuracy in surgical navigation, *Minim Invasiv Ther*, 24(6):356-363, 2015
- [22] Cheon B, Erkin G, Ji D, Tomikawa M, Hashizume M, Kim H, **Hong J***, A single port laparoscopic surgery robot with high force transmission and a large workspace, *Surg Endosc*, 28(9):2719-2729, 2014
- [21] Oka M, Cho B, Matsumoto N, **Hong J**, Jinnouchi M, Ouchida R, Komune S, Hashizume M, A preregistered STAMP method for image-guided temporal bone surgery, *Int J Comput Ass Rad*, 9(1):119-126, 2014
- [20] Tsutsumi N, Tomikawa M, Uemura M, Akahoshi T, Nagao Y, Konishi K, Ieiri S, **Hong J**, Maehara Y, Hashizume M, Image-guided laparoscopic surgery in an open MRI operating theater, *Surg Endosc*, 27(6):2178-2184, 2013
- [19] Cho B, Oka M, Matsumoto N, Ouchida R, **Hong J***, Hashizume M, Warning navigation system using real-time safe region monitoring for otologic surgery, *Int J Comput Ass Rad*, 8(3):395-405, 2013
- [18] Inoue D, Cho B, Mori M, Kikkawa Y, Amano T, Nakamizo A, Yoshimoto K, Mizoguchi M, Tomikawa M, **Hong J**, Hashizume M, Sasaki T, Preliminary Study on the Clinical Application of Augmented Reality Neuronavigation, *J Neurol Surg Part A*, 74(2):71-76, 2013
- [17] Kobayashi Y, Hamano R, Watanabe R, **Hong J**, Toyoda K, Hashizume M, Fujie G, Use of puncture force measurement to investigate the conditions of blood vessel needle insertion, *Med Eng Phys*, 35(5):684-689, 2013
- [16] Matsumoto N, Oka M, Cho B, **Hong J**, Jinnouchi M, Ouchida R, Hashizume M, Komune S, Cochlear Implantation Assisted by Noninvasive Image Guidance, *Otol Neurotol*, 33(8):1333-1338, 2012
- [15] Kobayashi Y, **Hong J***, Hamano R, Okada K, Fujie G, Hashizume M, Development of a needle insertion manipulator for central venous catheterization, *Int J Med Robot Comp*, 8(1):34-44, 2012
- [14] Masamune K, **Hong J***, Advanced Imaging and Robotics Technologies for Medical Applications, *Int J Optomechatroni*, 5(4): 299-321, 2011
- [13] Kim S, **Hong J***, Joung S, Yamada A, Matsumoto N, Kim S, Kim Y, Hashizume M, Dual Surgical Navigation Using Augmented and Virtual Environment Techniques, *Int J Optomechatroni*, 5(2): 155-169, 2011
- [12] Souzaki R, Kinoshita Y, Matsuura T, Tajiri T, Taguchi T, Ieiri S, **Hong J**, Uemura M, Konishi K, Tomikawa M, Tanoue K, Hashizume M, Koga Y, Suminoe A, Hara T, Kohashi K, Oda Y. Successful resection of an undifferentiated sarcoma in a child using a real-time surgical navigation system in an open magnetic resonance imaging operation room, *J Pediatr Surg*, 46(3):608-611, 2011
- [11] Ieiri S, Nakatsuji T, Higashi M, Akiyoshi J, Uemura M, Konishi K, Onimaru M, Ohuchida K, **Hong J**, Tomikawa M, Tanoue K, Hashizume M, Taguchi T, Effectiveness of basic endoscopic surgical skill training for pediatric surgeons, *Pediatr Surg Int*, 26(10):947-954, 2010
- [10] Tomikawa M, **Hong J**, Shiotani S, Tokunaga E, Konishi K, Ieiri S, Tanoue K, Akahoshi T, Maehara Y, Hashizume M, Real-Time 3-Dimensional Virtual Reality Navigation System with Open MRI for Breast-Conserving Surgery, *J Am Coll Surgeons*, 210(6):927-933, 2010
- [9] **Hong J**, Hashizume M, An Effective Point-based Registration Tool for Surgical Navigation, *Surg*

Endosc, 24(4):944-948, 2010

- [8] Maeda T, **Hong J**, Konishi K, Nakatsuji T, Yasunaga T, Yamashita Y, Taketomi A, Kotoh K, Enjoji M, Nakashima H, Tanoue K, Maehara Y, Hashizume M, Tumor ablation therapy of liver cancers with an open magnetic resonance imaging-based navigation system, *Surg Endosc*, 23(5):1048-1053, 2009
- [7] **Hong J**, Matsumoto N, Ouchida R, Komune S, Hashizume M, Medical navigation system for otologic surgery based on hybrid registration and virtual intraoperative computed tomography, *IEEE T Bio-Med Eng*, 56(2):426-432, 2009
- [6] Matsumoto N, **Hong J**, Hashizume M, Komune S, A minimally invasive registration method using surface template-assisted marker positioning (STAMP) for image-guided otologic surgery, *Otolaryng Head Neck*, 140(1):96-102, 2009
- [5] **Hong J**, Hata N, Konishi K, Hashizume M, Real-time magnetic resonance imaging driven by electromagnetic locator for interventional procedure and endoscopic therapy, *Surg Endosc*, 22(2):552-556, 2008
- [4] Yasunaga T, Konishi K, Yamaguchi S, Okazaki K, **Hong J**, Ieiri S, Nakashima H, Tanoue K, Fukuyo T, Hashizume M, MR-compatible laparoscope with a distally mounted CCD for MR image-guided surgery, *Int J Comput Ass Rad*, 2(1):11-18, 2007
- [3] **Hong J**, Nakashima H, Konishi K, Ieiri S, Tanoue K, Hashizume M, Interventional navigation for abdominal surgery by simultaneous use of MRI and ultrasound, *Med Biol Eng Comput*, 44(12):1127-1134, 2006
- [2] **Hong J**, Dohi T, Hashizume M, Konishi K, Hata N, An ultrasound-driven needle insertion robot for percutaneous cholecystostomy, *Phys Med Biol*, 49(3):441-455, 2004
- [1] **Hong J**, Kaneko T, Sekiguchi R, Park K, Automatic liver tumor detection from CT, *IEICE T Inf Syst*, E84-D(6):741-748, 2001

6. Conference Proceeding and Abstract (selected)

* 23 selected out of total 88 presentations

- [23] Jeon S, Chien J, Song J, **Hong J**, Image Guidance for Improving Electrode Placement Precision in EEG Study, *Proceeding of CARS 2016*, 2016
- [22] Shim S, Kang T, Ji D, **Hong J**, All Joints Controlling Master Device For Y-Type Single Port Laparoscopic Surgery Robot, *Proceeding of CARS 2015*, 10:S248-S249, 2015
- [21] Choi H, Park Y, Joung S, Cho H, **Hong J**, A simple and portable surgical navigation system for bone tumor resection, *Proceeding of CARS 2015*, 10:S85-S87, 2015
- [20] Chien J, Jeon S, Choi S, Kim J, **Hong J**, Navigation-based EEG Electrode Placement Method, 7th International IEEE/EMBS Conference on Neural Engineering (IEEE EMB Conference), 2015
- [19] Lee S, Lee H, Choi H, **Hong J**, A Simple and Accurate Camera-Sensor Calibration for Surgical Endoscopes and Microscopes, *The 2014 Workshop on Augmented Environments for Computer Assisted Interventions (AECAI 2014)*, pp98-107, 2014
- [18] Shim S, Ji D, Arata J, Hashizume M, **Hong J**, A Master Slave Y-type Single Port Laparoscopic Surgery Robot with High Force Transmission and Large Workspace, *Hamlyn Symposium on Medical Robotics*, pp27-28, 2014

- [17] Shim S, Ji D, Hashizume M, Arata J, **Hong J**, A whole arm mimicking master device for single incision laparoscopic surgery robot, Proceeding of CARS 2014, 9:S313-S315, 2014.
- [16] Jeon S, **Hong J**, Surgical navigation system for assisting epiduroscopic laser neural decompression (ELND) procedure: its clinical application in 14 patients, Proceeding of CARS 2014, 9:S104-S105, 2014.
- [15] Choi H, **Hong J**, Zoom lens calibration for surgical microscope, Proceeding of CARS 2014, 9:S160-S161, 2014.
- [14] Cheon B, Ji D, Erkin G, **Hong J**, Development of a New Single Port Surgery Robot with Increased Torque, Proceeding of CARS 2013, 8:S112-S113, 2013
- [13] Chien J, Park J, Jeon S, **Hong J**, Improvement of Target Registration Accuracy with Anatomical Landmarks, The Hamlyn Symposium on Medical Robotics, 2013
- [12] Choi H, **Hong J**, Augmented reality navigation system for ear surgery, The Hamlyn Symposium on Medical Robotics, video presentation, 2013
- [11] Cheon B, Erkin G, **Hong J**, Design of a New Single Port Surgery Robot with Large Torque and Workspace, Proceeding of the IAS-12, p38, 2012
- [10] Tomikawa M, **Hong J**, Akahoshi T, Tsutsumi N, Ohuchida K, Ieiri S, Ohdaira T, Hashizume M, Usefulness of a real-time virtual reality navigation system using and open magnetic resonance imaging: tumor ablation therapy for 50 liver cancers, Proceeding of CARS 2011, 6:S95-S96, 2011
- [9] Oka M, Cho B, Matsumoto N, **Hong J**, Komune S, Hashizume M, Pre-registered STAMP method for instant registration in image-guided temporal bone surgery, Proceeding of CARS 201, 6:S123-S124, 2011
- [8] Cho B, Oka M, Matsumoto N, **Hong J**, Hashizume M, Augmented reality of surgical microscope for otologic surgery, Proceeding of CARS 2011, 6:S245-S246, 2011
- [7] Chung J, Toyoda K, **Hong J**, Tomikawa M, Hashizume M, Implementation of a 4-DOF master device with a hybrid structure for a needle insertion task, Proceeding of CARS 2011, 6:S280-S281, 2011
- [6] **Hong J**, Matsumoto N, Ouchida R, Komune S, Hashizume, An optimally designed surgical navigation system for otologic surgery, Proceeding of CARS 2008, 1:S251-S252, 2008
- [5] **Hong J**, Konishi K, Nakashima H, Ieiri S, Tanoue K, Nakamuta M, Hashizume M, Integration of MRI and ultrasound in surgical navigation for robotic surgery, Proceeding of IFMBE 2006, vol. 14, pp2930-2933, 2006
- [4] **Hong J**, Konishi K, Nakashima H, Ieiri S, Tanoue K, Hashizume M. Hashizume, Image-guided abdominal surgery by integration of MRI and ultrasound, Proceeding of IFMBE 2006, vol. 14, pp4026-4028, 2006
- [3] **Hong J**, Muragaki Y, Inomata T, Nakamura R, Hata N, Dohi T, Iseki H, Intraoperative 3-D Display of Tumor Resection Status based on the Trace of Surgical Device, IFMBE Proceeding of IFMBE 2005, vol. 8, PA-3-89(CD), 2005
- [2] **Hong J**, Dohi T, Hashizume M, Konishi K, Hata N, A motion adaptable needle placement instrument based on tumor specific ultrasonic image segmentation, Lecture Notes in Computer Sciences, Proceeding of MICCAI 2002, vol. 2488, pp122-129, 2002
- [1] **Hong J**, T. Kaneko, R. Sekiguchi, K. Park, Computer-aided Diagnostic System Based on Liver CT image, IAPR Workshop on Machine Vision Applications, pp419- 422, 2000

7. Patents (including pending)

Korea Patents

- [28] Ha H, **Hong J**, Park I, Park C, Oh C, Lee S, Jeong S, Chien J, Navigation apparatus and method for fracture correction, *Korea Patent Pending* 10-2017-0089006, 07/13/2017
- [27] Jeon I, Hong H, **Hong J**, Choi H, Jung K, A medical gyro stick, *Korea Patent Number* 10-1746761, 06/07/2017
- [26] Jeon S, **Hong J**, Calibration method and apparatus of x-ray apparatus, *Korea Patent Pending* 10-2017-0053030, 04/25/2017
- [25] Jeon S, **Hong J**, Calibration method of x-ray apparatus and calibration apparatus for the same, *Korea Patent Pending* 10-2017-0050284, 04/19/2017
- [24] Kim M, **Hong J**, Choi H, Method for tracking marker, apparatus and system for executing the method, *Korea Patent Pending* 10-2017-0049341, 04/17/2017
- [23] Kang W, **Hong J**, Jeon S, Image processing apparatus and method for generating virtual x-ray image, *Korea Patent Pending* 10-2017-0047382, 04/12/2017
- [22] **Hong J**, Jeon S, Lee S, Navigation system for vascular intervention and method for generating virtual x-ray image, *Korea Patent Pending* 10-2017-0047421, 04/12/2017
- [21] Park S, Song W, Choi H, Seo D, Song C, **Hong J**, Deformable scaffold, manufacturing method thereof and deforming, recovery method, *Korea Patent Pending* 10-2017-0040897, 03/30/2017
- [20] **Hong J**, Choi H, Jung K, Jeon I, Hong H, Anold E, Tool for selection of image of region of interest and its use of selection method, *Korea Patent Number* 10-1707113, 02/09/2017
- [19] **Hong J**, Jung K, Jeon I, Hong H, Method for generating panoramic image and apparatus thereof, *Korea Patent Pending* 10-2017-0009947, 01/20/2017
- [18] Jeon I, Hong H, **Hong J**, Choi H, Jung K, Augmented Reality Angle Measuring Apparatus for Non-radiographic Correction Osteotomy Surgery, *Korea Patent Pending* 10-2016-0163013, 12/01/2016
- [17] **Hong J**, Jeon S, Song J, System for directing placement of detector for measuring bio signal and method thereof, *Korea Patent Pending* 10-2016-0135186, 10/18/2016
- [16] Lee S, **Hong J**, Kim J, Kim S, A Surgical navigation system for total hiparthroplasty, *Korea Patent Pending* 10-2016-0118365, 09/13/2016
- [15] Jeon I, Aashay K, **Hong J**, Choi H, Jung K, Method for displaying a surgery instrument by surgery navigation, *Korea Patent Number* 10-1652888, 08/25/2016
- [14] Choi H, **Hong J**, Park Y, Shim S, An Apparatus for guiding a needle and a system incorporating the same, *Korea Patent Pending* 10-2016-0099954, 08/05/2016
- [13] Shim S, **Hong J**, An Apparatus for inserting a needle, *Korea Patent Pending* 10-2016-0095441, 07/27/2016
- [12] **Hong J**, Jeon S, Chien J, A system for inducing the electroencephalogram electrode displacement, *Korea Patent Pending* 10-2016-0090079, 07/15/2016
- [11] Kang T, Ji D, **Hong J**, Moon J, Endoscopic structure for variable length, *Korea Patent Pending* 10-2016-0074458, 06/15/2016
- [10] **Hong J**, Choi H, Jo H, Device and method for measuring using augmented reality, *Korea Patent*

Number 10-1629134, 06/02/2016

- [9] **Hong J**, Jeon S, Lee S, Navigation system for vascular intervention and method to visualize virtual X-ray image thereof, *Korea Patent Pending* 10-2016-0054755, 05/03/2016
- [8] **Hong J**, Choi H, Camera parameter computation method, *Korea Patent Number* 10-1596868, 02/17/2016
- [7] Jeon I, Hong H, **Hong J**, Choi H, Jung K, A gyro stick, *Korea Patent Pending* 10-2015-0129842, 09/14/2015
- [6] Choi H, Jo H, **Hong J**, Park Y, Apparatus and method for guiding resection operating, *Korea Patent Pending* 10-2015-0100849, 07/16/2015
- [5] **Hong J**, Choi H, Method for operating surgical navigation system and surgical navigation system, *Korea Patent Number* 10-1536115, 07/07/2015
- [4] **Hong J**, Park J, High accuracy image matching apparatus and high accuracy image matching method using a skin marker and a feature point in a body, *Korea Patent Number* 10-1492940, 02/06/2015
- [3] **Hong J**, Kim J, Jeon S, Hybrid navigation system and method to track position thereof, *Korea Patent Number* 10-1491922, 02/03/2015
- [2] Jeon I, Aashay K, **Hong J**, Choi H, Jung K, Tool location tracking apparatus, *Korea Patent Pending* 10-2014-0108599, 08/20/2014
- [1] **Hong J**, Cheon B, Surgery robot, *Korea Patent Number* 10-1401138, 05/22/2014

International Patent

- [8] **Hong J**, Jeon S, Lee S, Navigation system for vascular intervention and method for generating virtual x-ray image, *US Patent Pending* 15/499,116, 04/27/2017
- [7] **Hong J**, Jeon I, Jung K, Choi H, Hong H, A medical gyro stick, *PCT Patent Pending* KR2016-010065, 09/08/2016
- [6] **Hong J**, Park J, High accuracy image matching apparatus and high accuracy image matching method using a skin marker and a feature point in a body, *US Patent Number* US 9,342,887 B2, 05/17/2016
- [5] Jeon I, Aashay K, **Hong J**, Choi H, Jung K, Tool location tracking apparatus, *PCT Patent Pending* KR2015/008682, 08/20/2015
- [4] **Hong J**, Cheon B, Surgery robot, *US Patent Pending* 14/427,599, 03/11/2015
- [3] **Hong J**, Choi H, Method for operating surgical navigation system and surgical navigation system, *PCT Patent Pending* KR2014/007909, 08/26/2014
- [2] **Hong J**, Cheon B, Surgery Robot, *PCT Patent Pending* KR2013/005476, 06/21/2013
- [1] **Hong J**, Park J, High accuracy image matching apparatus and high accuracy image matching method using a skin marker and a feature point in a body, *PCT Patent Pending* KR2013/003647, 04/26/2013

8. Research Fundings

- Computer-aided Practice for Dental Implant, Principal Investigator (PI), Korea Government (SMBA), 2016~2020
- Bone Deformation and Fracture Reduction Device, PI, Korea Government (MOTIE), 2016-2019
- Micro-robot for chronic total occlusion treatment, Co-PI, Korea Government (MOTIE), 2015-2018
- Image Processing and Augmented Reality for Arthroscopy, PI, Korea Government, PI, Korean Government (MOHW), 2013-2018
- DGIST Convergence Science for Rehabilitation of Aged People, Co-PI, Institute (DGIST), 2011-2019
- Surgical Robot and Navigation System for ENT and Neurological Surgery, PI, Korea Government (MOTIE), 2011-2015
- Multi-modal Image Registration, PI, Samsung (SAIT), 2011
- Development of Intuitive 3D Surgical Navigation, PI, Japan Government (KAKEN/Wakate-A), 2008-2010
- Needle Insertion Robot for Central Vein Catheterization, PI, Japan Government (KAKEN/Houga), Japan, 2008-2009
- US-guided Needle Insertion Robot for Moving Organ, PI, Japan Government (KAKEN/Kiban-C), Japan, 2005-2007

9. Awards and Honors

- Best Poster
Song J, Jeon S, Lee S, Hong J, Markerless Augmented Reality-based Navigation for Precise Electrode Positioning, 2016 The Sector Union Conference of Society for Computational Design and Engineering
- DGIST Contribution Award, 2013
- Best Video Presentation
Choi H, Hong J, Augmented Reality Navigation System for Ear Surgery, Augmented Reality & Surgical Guidance Workshop in The Hamlyn Symposium on Medical Robotics, 2013
- Best Paper Award
Park J, Hong J, High accuracy target registration method using ultrasonography, The 4th SPENALO International Symposium on marine and Medical Robotics (SIS), 2012
- Best Paper Award
Tomikawa M, Hong J, Akahoshi T, Tsutsumi N, Ohuchida K, Ieiri S, Ohdaira T, Hashizume M, Usefulness of a real-time virtual reality navigation system using and open magnetic resonance imaging: tumor ablation therapy for 50 liver cancers, International Society of Computer Aided Surgery (ISCAS) in Computer Assisted Radiology and Surgery (CARS), 2011
- Best Paper Award
Hong J, Lim H, Yi B-J, Lee SH, Jeong JH, Matsumoto N, Oka M, Komune S, Hashizume M, Phantom Experiment of An Ear Surgery Robot for Automatic Mastoidectomy, Proceeding of the 5th International Conference on the Advanced Mechatronics(ICAM), 2010
- Presentation Paper Award, Tomikawa M, Konishi K, Akahoshi T, Hong J, Ieiri S, Tanoue K, Maehara Y, Hashizume M, Image-guided Laparoscopic Surgery and its Equipments in Open MRI Therapeutic Room, J. JSCAS 11(3):352-353, 2009
- Best Paper Award
Hong J, Matsumoto N, Ouchida R, Komune S, Hashizume M, Image-guided Otologic Surgery based

on Patient Motion Compensation and Intraoperative Virtual CT, ACCAS2007, 2007

- Best Engineering Paper Award
Hong J, Dohi T, Hashizume M, Konishi K, Hata N, Tomographic Image Driven Needle Insertion Robot Adaptive to Organ Motion and Deformation, J. JSCAS 5(4):443-448, 2007
- Presentation Paper Award, S.Nishimura, K.Hamata, T.Yasunaga, J.Hong, H.Nakashima, K. Konishi, M.Hashizume, K.Tanoue, Contrast Enhancement of Sentinel Lymph Node using Interventional-MR, J. JSCAS 8(3):204-205, 2006
- Presentation Paper Award, E.Aoki, K.Shimizu, G.Ali, J.Hong, E.Kobayashi, N.Hata, R.Nakamura, T.Maruyama, Y.Muragaki, H.Iseki, I. Sakuma, Development and Evaluation of the Integrated system of different platforms for Neurosurgery(translated), J. JSCAS 7(3):359-360, 2005
- Japan Government (JSPS) Postdoctoral Fellowship for Foreign Researchers 2004
- Japan Government (Monbukagakusho) Scholarship 2001

10. Invited Talks (selected)

- Augmented Reality and Surgical Navigation, Invited talk, ICBME 2016, Singapore, Dec. 2016.
- Surgical Navigation for Microrobot, Invited talk, IROS 2016 Workshop on Microrobots for next generation biomedical applications, Daejeon, Oct. 2016
- Augmented Reality in Medicine, Plenary talk, Annual Fall Conference of Korea CDE Society, Busan, Aug. 2016
- Robotics Challenge of South Korea, Invited talk, UK Robotics Week, IET International Robotics Showcase 2016, London, Jul. 2016
- Principle and Issues of Surgical Navigation, Distinguished lecture, Hamlyn Medical Center, London, Feb. 2016
- Principle and Applications of Image-guided Surgery, Invited talk, ACCAS2015, Singapore, Oct, 2015
- Possibility and Technical Issues of Surgical Navigation, Invited talk, Joint Annual Conference of KSMR, KSGE, and K-NOTES. Seoul, Sep. 2015
- Surgical Navigation and Surgical Robot, Invited talk, ELSA 2015, Daegu, Sep, 2015
- Application of Surgical Navigation, Invited talk, ISSIS 2015, Seoul, Jun, 2015
- Principle and Application of Surgical Navigation, Surgical Grand Round, Severance Hospital, Yonsei University, Seoul, 2014
- Surgical Imaging and Robot, Samsung Advanced Institute of Technology (SAIT) Forum, Suwon, May, 2011
- Surgical Image and Robot for Minimally Invasive Surgery, International Symposium for Industrial, Academic and Research Institutions Collaboration, Kyungpook National University, Daegu, Jun, 2010

11. International Activity and Service (selected)

- Co-chair, Technical Committee on Surgical Robotics of IEEE/RAS, 2016-present
- Co-organizer, IROS 2016 workshop (ISCAS/ASCAS/IROS jointed) on Intelligent Instruments and Software for Future Medical Workspace, 2016

- Board member of international affairs, Asian Society of Computer Aided Surgery, 2015-present
- Associate Editor, IEEE Robotics and Automation Letters, 2015-present
- Financial chair, Korea Society of Medical Robotics, 2014-present
- International network chair, Korea Society of Medical Robotics, 2011-2013
- Organizing committee, Frontier of Computer Vision (FCV) 2012 Conference, 2012
- General Secretary, 3rd Annual Conference of Korea Society of Medical Robotics, 2011
- Program co-chair, 7th Asian Conference on Computer Aided Surgery (ACCAS), 2011
- Program committee, Computer Assisted Radiology and Surgery (CARS), 2010-present
- International program committee, 6th International Conference on Ubiquitous Robots and Ambient Intelligence (URAI), 2009
- Selection committee, International Conference on Intelligent Robots and Systems (IROS) 2009, 2009
- Program co-chair, 5th Asian Conference on Computer Aided Surgery (ACCAS), 2009
- Regular reviewer, Journal of Japan Society of Computer-Aided Surgery (JSCAS), 2008-2010