Short bio

Yoshinobu Sato, Ph.D
Professor
Imaging-based Computational Biomedicine Laboratory
Division of Information Science
Nara Institute of Science and Technology (NAIST), Japan

Yoshinobu Sato received his B.S., M.S. and Ph.D degrees in Information and Computer Sciences from Osaka University, Japan in 1982, 1984, 1988, respectively. From 1988 to 1992, he worked at the NTT Human Interface Laboratories. In 1992, he joined Osaka University Medical School. From 1996 to 1997, he was a Visiting Research Fellow at the Surgical Planning Laboratory, Harvard Medical School and Brigham and Women's Hospital. In 1999, he became an Associate Professor at Osaka University Graduate School of Medicine. From 2014, he is a Professor at Nara Institute of Science and Technology (NAIST). His research interests include medical image analysis, computer assisted surgery, and computational anatomy. Dr. Sato is an Editorial Board member of Medical Image Analysis journal and International Journal of Computer Assisted Radiology and Surgery (IJCARS) journal. He was Program Chair of the 16th International Conference on Medical Image Computing and Computer Assisted Intervention (MICCAI 2013).

Curriculum Vitae

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Education

1) Ph.D., Information and Computer Sciences, Osaka University, Japan, 1988 (1984-1988)
2) M.S., Information and Computer Sciences, Osaka University, Japan, 1984 (1982-1984)
3) B.S., Information and Computer Sciences, Osaka University, Japan, 1982 (1978-1982)

Employment

1) April 2014 – present, Professor, Nara Institute of Science and Technology
2) April 1999 – March 2014, Associate Professor, Division of Image Analysis, Graduate School of Medicine, Osaka University
3) February 1996 - December 1996, Research Fellow, the Surgical Planning Laboratory at Harvard Medical School and Brigham and Women's Hospital, MA, USA.
4) April 1992 - March 1999, Assistant Professor, the Division of Functional Diagnostic Imaging, Osaka University Medical School, Osaka, Japan
5) April 1988 - March 1992, Research Engineer, NTT Human Interface Laboratories, Kanagawa, Japan

Research Interests

1) Medical Image Analysis
2) Computer Assisted Surgery
3) Computational Anatomy

Academic Society/Conference Activities

Journal

1) Guest Editor of Special Issue on JAMIT 2015 and 2016, International Journal of Computer Assisted Radiology and Surgery, May 2017
2) Guest Editor of Special Issue on MICCAI 2013, Medical Image Analysis, December 2014
3) Editorial Board Member, Medical Image Analysis, March 2008 –present
4) Editorial Board Member, International Journal of Computer Assisted Radiology and Surgery, April 2006 –present
5) Guest Editor of Special Issue on MICCAI 2002, Academic Radiology, December 2003

Conference/Workshop

1) General Chair of "38th JAMIT (The Japanese Association of Medical Imaging Technology) Annual Meeting" (Nara, Japan, July 24-25, 2019)
2) General Chair of "27th Annual Congress of JSCAS (Japan Society of Computer Aided Surgery)" (Nara, Japan, November 9-11, 2018)
3) Co-Organizer of "4th MICCAI Workshop on Clinical Image-based Procedures: Translational Research in Medical Imaging (CLIP 2015)" (Munich, Germany, October 5, 2015)
4) Co-Organizer of "3rd MICCAI Workshop on Clinical Image-based Procedures: Translational Research in Medical Imaging (CLIP 2014)" (Boston, MA, September 14, 2014)
5) Program Chair of "16th International Conference on Medical Image Computing and Computer Assisted Intervention (MICCAI 2013)" (Nagoya, Japan, September 22-16, 2013)
6) Program Chair of "International Forum on Medical Imaging in Asia (IFMIA 2011)" (Naha, Japan, January 18-19, 2011)
7) General Co-Chair of "International Forum on Medical Imaging in Asia (IFMIA 2009)" (Taipei, Taiwan, January 19-21, 2009)
8) Organizer of "JSPS-SNSF Joint Seminar on Computer-Aided Surgery" (Osaka, Japan, September 22 – 24, 2007)
9) Tutorial Chair of "Fifth International Conference on Medical Image Computing and Computer Assisted Intervention (MICCAI 2002)" (Tokyo, Japan, September, 25-28, 2002).
10) Program Committee Member, Area Chair: MICCAI (2003, 2007-2010, 2012, 2014, 2015), ICPR (2002, 2014), International Workshop on Biomedical Image Registration (1999, 2003)

Academic Society

1) Fellow: Institute of Electronics, Information and Communication Engineers of Japan (IEICE), 2015– present
2) Board Member: Japan Society of Computer Aided Surgery (JSCAS), 2015– present
3) Board Member: Japanese Society of Medical Imaging Technology (JAMIT), 2012– present
4) Board Member: Japanese Society for Medical and Biological Engineering (JAMBE), 2017– 2019
5) Executive Committee Member at Large: International Society for Computer Assisted Orthopaedic Surgery (CAOS-International), 2005 – 2006
6) Member: MICCAI, IEEE, CAOS-International, ISCAS, Japan Radiological Society (JRS)

Grants

1) MEXT Grant-in-Aid for Scientific Research (A) 19H01176, Principal Investigator, 34,800k JPY (2019-2023)
2) MEXT Grant-in-Aid for Scientific Research on Innovative Areas, 70243219, Principal Investigator, 79,100k JPY (2014-2019)
3) MEXT Grant-in-Aid for challenging Exploratory Research, 26560259, Principal Investigator, 2,800k JPY (2014-2016)
4) MEXT Grant-in-Aid for Scientific Research (A) 25242051, Principal Investigator, 36,010k JPY (2013-2017)
5) MEXT Grant-in-Aid for Scientific Research on Innovative Areas, 21103003, Principal Investigator, 114,790k JPY (2009-2014)
6) MEXT Grant-in-Aid for Scientific Research (B) 21300068, Principal Investigator, 18,330k JPY (2009-2011)
7) JSPS Grant-in-Aid for Scientific Research (B) 18300059, Principal Investigator, 15,400k JPY (2006 - 2009)
8) JSPS Grant-in-Aid for Scientific Research (B) 15300059, Principal Investigator, 14,600k JPY (2003 - 2006)
9) JSPS Grant-in-Aid for Scientific Research (B) (2) 12558033, Principal Investigator, 6,700k JPY (2000 - 2003)
10) JSPS Grant-in-Aid for Scientific Research (C) (2) 11680389, Principal Investigator, 3,400k JPY (1999 - 2002)

Awards

1) **Best Paper Award**, International Forum on Medical Imaging in Asia (IFMIA) 2019, Sakamoto M, Hiasa Y, Otake Y, Takao M, Suzuki Y, Sugano N, Sato Y, Automated Segmentation of Hip and Thigh Muscles in Metal Artifact Contaminated CT using CNN, International Forum on Medical Imaging in Asia (IFMIA) 2019, Singapore, Jan. 2019.
2) **Best Technical Paper Award**, The International Society for Computer Assisted Orthopaedic Surgery: Jodeiri A, Otake Y, Zoroofi RA, Hiasa Y, Takao M, Uemura K, Sugano N, Sato Y, Estimation of Pelvic Sagittal Inclination from Anteroposterior Radiograph Using Convolutional Neural Networks: Proof-of-Concept Study. Proc. 18th Annual Meeting of CAOS-International, Beijing, China, June 2018.
3) **Best Paper Award**, 5th MICCAI Workshop on Computational Methods and Clinical Applications in Musculoskeletal Imaging (MICCAI-MSKI 2017): Otake Y, Miyamoto K, Ollivier A, Yokota F, Fukuda N, O'Donnell LJ, Westin CF, Takao M, Sugano N, Chung BS, Park JS. Reconstruction of 3D Muscle Fiber Structure Using High Resolution Cryosectioned Volume. In International Workshop and Challenge on Computational Methods and Clinical Applications in Musculoskeletal Imaging 2017 Sep 10 (pp. 85-94). Springer, Cham.
4) **Best Technical Poster Award**, The International Society for Computer Assisted Orthopaedic Surgery: Yamazaki T, Tomita T, Sato Y, Yoshikawa H, Sugamoto K, Robust 3D kinematic analysis of total knee arthroplasty using statistical motion model. Proc. 17th Annual Meeting of CAOS-International, Aachen, Germany, June 2017.
5) **Best Oral Presentation Award**: The International Forum on Medical Imaging in Asia (IFMIA) 2017: Zahnd G, Galbrun D, Qorchi S, Saito K, Sérusclat A, Moulin P, Nagatsuka K, Orkisz M, Otake Y, Sato Y. Pattern Analysis of the Kinematics in Ultrasound Videos of the Common Carotid Artery–Application to Cardiovascular Risk Evaluation. In International Forum on Medical Imaging in Asia (IFMIA 2017) 2017 Jan 19.
6) **Best Technical Paper Award**, The International Society for Computer Assisted Orthopaedic Surgery: Yokota F, Takaya M, Okada T, Takao M, Sugano N, Tada Y, Tomiyama N, Sato Y, Automated muscle segmentation from 3D CT data of the hip using hierarchical multi-atlas method. Proc. 12th Annual Meeting of CAOS-International, Seoul, Korea, June 2012.
7) **Medical Image Analysis – MICCAI'06 Second Best Paper Prize**: Nakamoto M, Hirayama H, Sato Y, Konishi K, Kakeji Y, Hashizume M, and Tamura S: Recovery of respiratory motion and deformation of the liver using laparoscopic freehand 3D ultrasound system, Medical Image Analysis, 11(5): 429-442, 2007. (Awarded to

Nakamoto M)

8) **Best Paper Award** from Japan Society of Computer Aided Surgery (JSCAS), in 2007 and 2014
9) **Best Paper Award** from Japanese Society of Medical Imaging Technology (JAMIT) in 1994 and 1999

PhD student supervision

1) Yuta Hiasa, Graduate School of Information Science, Nara institute of Science and Technology, 2019.
2) Futoshi Yokota, Graduate School of Engineering, Kobe University, 2015.
3) Itaru Otomaru, Graduate School of Engineering, Kobe University, 2012.
4) Toshiyuki Okada, Graduate School of Information Science and Technology, Osaka University, 2010.
5) Yoshiyuki Kagiyama, Graduate School of Science and Technology, Kobe University, 2007.
6) Jun Masumoto, Graduate School of Engineering Science, Osaka University, 2003.
7) Masahiko Nakamoto, Graduate School of Engineering Science, Osaka University, 2002.
8) Jian Chen, Graduate School of Engineering Science, Osaka University, 2000.
9) Masamitsu Moriyama, Graduate School of Engineering Science, Osaka University, 1998.
10) Reza A Zoroofi, Graduate School of Medicine, Osaka University, 1998.
11) Yoshikazu Nakajima, Graduate School of Engineering Science, Osaka University, 1997.

External PhD thesis referee

1) Vimal Chandran, Department of Informatics, Institute for Surgical Technology and Biomechanics, University of Bern, Switzerland, Comprehensive and effective machine learning based computational modelling of the human proximal femur, 2017.
2) Ye Li, Graduate School of Global Information and Telecommunication Studies, Waseda University, Tokyo, Research on Recognition and Early-recognition of Suture Surgery's Steps Based on Video Image Analyses of Surgeons' Hand Actions, 2017.
3) Rong Xu, Graduate School of Global Information and Telecommunication Studies, Waseda University, Tokyo, Research on Medical Image Processing Technologies for Fetal Surgical Navigation, 2014
4) Olena Tankyevych, Department of Informatics, University Paris-Est, ESIEE Paris,

Filtering of thin objects: Applications to vascular image analysis, 2010.

5) Zhang Jing, Department of Mechanical Engineering, National University of Singapore, Model-based segmentation and registration of multimodal medical images, 2009.

Publications: Yoshinobu Sato

Google Scholar

https://scholar.google.co.jp/citations?user=FxzEZcwAAAAJ&hl=en&oi=ao

Book Chapters

1. Hanaoka S, Kamiya N, **Sato Y**, et al, Understanding Medical Images Based on Computational Anatomy Models, In Kobatake H and Masutani Y (eds.) Computational Anatomy Based on Whole Body Imaging, 151-284, 2017
2. Ukimura O, Nakamoto M, **Sato Y**, Hashizume M, Miki T, Desai M, Aron M and Gill IS, Augmented Reality for Image-Guided Surgery in Urology, In Dasgupta P, Fitzpatrick JM, Kirby R, Gill IS (Eds.) "New Technologies in Urology", New Techniques in Surgery Series, Volume 7, Part IV, 215-222, 2010.
3. **Sato Y**: Hessian-based multiscale enhancement, description, and quantification of second-order 3D local structures from medical volume data, In Suri J, Wilson D, and Laxminarayan S (eds.) Handbook of Medical Image Analysis, Vol. II, Segmentation Models Part B, Kluwer Academic Publishers, New York, USA, 531-589, 2005.
4. **Sato Y**, Moriyama M, Ueguchi T, Hanayama M, Naito H, Tamura S: Techniques for the accurate recovery of time varying 3D shapes in medical imaging, In Leondes CT (ed.) Computational Methods in Biophysics, Biomaterials, Biotechnology and Medical Systems, Vol. 4, Diagnostic Methods, Kluwer Academic Publishers, Norwell, Massachusetts, USA, 247-265, 2002.

Journal Papers

1. Masumoto N, Suzuki Y, Cui S, Wakazaki M, Sato M, Kumaishi K, Shibata A, Furuta KM, Ichihashi Y, Shirasu K, Toyooka K, **Sato Y**, Yoshida S. Three-dimensional reconstructions of haustoria in two parasitic plant species in the Orobanchaceae. Plant Physiology. 2021 Jan 25.
2. Yamazaki Y, Kanaji S, Matsuda T, Oshikiri T, Nakamura T, Suzuki S, Hiasa Y, Otake Y, **Sato Y**, Kakeji Y. Automated surgical instrument detection from laparoscopic gastrectomy video images using an open source convolutional neural network platform. Journal of the American College of Surgeons. 2020 May 1;230(5):725-32.
3. Tani T, Takao M, Uemura K, Otake Y, Hamada H, Ando W, **Sato Y**, Sugano N. Posterior pelvic tilt from supine to standing in patients with symptomatic developmental dysplasia of the hip. Journal of Orthopaedic Research®. 2020 Mar;38(3):578-87.

4. Sakamoto M, Hiasa Y, Otake Y, Takao M, Suzuki Y, Sugano N, **Sato Y**. Bayesian segmentation of hip and thigh muscles in metal artifact-contaminated CT using convolutional neural network-enhanced normalized metal artifact reduction. Journal of Signal Processing Systems. 2020 Mar;92(3):335-44.
5. Jodeiri A, Zoroofi RA, Hiasa Y, Takao M, Sugano N, **Sato Y**, Otake Y. Fully automatic estimation of pelvic sagittal inclination from anterior-posterior radiography image using deep learning framework. Computer methods and programs in biomedicine. 2020 Feb 1;184:105282.
6. Ogawa T, Takao M, Otake Y, Yokota F, Hamada H, Sakai T, **Sato Y**, Sugano N. Validation study of the CT-based cross-sectional evaluation of muscular atrophy and fatty degeneration around the pelvis and the femur. Journal of Orthopaedic Science. 2020 Jan 1;25(1):139-44.
7. Soufi M, Otake Y, Hori M, Moriguchi K, Imai Y, Sawai Y, Ota T, Tomiyama N, **Sato Y**. Liver shape analysis using partial least squares regression-based statistical shape model: application for understanding and staging of liver fibrosis. International journal of computer assisted radiology and surgery. 2019 Dec;14(12):2083-93.
8. Hiasa Y, Otake Y, Takao M, Ogawa T, Sugano N, **Sato Y**. Automated muscle segmentation from clinical ct using bayesian u-net for personalized musculoskeletal modeling. IEEE transactions on medical imaging. 2019 Sep 10;39(4):1030-40.
9. Cerrolaza JJ, Picazo ML, Humbert L, **Sato Y**, Rueckert D, Ballester MÁ, Linguraru MG. Computational anatomy for multi-organ analysis in medical imaging: A review. Medical image analysis. 2019 Aug 1;56:44-67.
10. Abe S, Otake Y, Tennma Y, Hiasa Y, Oka K, Tanaka H, Shigi A, Miyamura S, **Sato Y**, Murase T. Analysis of forearm rotational motion using biplane fluoroscopic intensity-based 2D–3D matching. Journal of biomechanics. 2019 May 24;89:128-33.
11. Abdolali F, Zoroofi RA, Otake Y, **Sato Y**. A novel image-based retrieval system for characterization of maxillofacial lesions in cone beam CT images. International journal of computer assisted radiology and surgery. 2019 May 1;14(5):785-96.
12. Uemura K, Takao M, Otake Y, Koyama K, Yokota F, Hamada H, Sakai T, **Sato Y**, Sugano N. Reproducibility of pelvic sagittal inclination while acquiring radiographs in supine and standing postures. Journal of Orthopaedic Surgery. 2019 Feb 4;27(1):2309499019828515.
13. Whitmarsh T, Otake Y, Uemura K, Takao M, Sugano N, **Sato Y**. A cross-sectional study on the age-related cortical and trabecular bone changes at the femoral head in elderly female hip fracture patients. *Scientific reports*. 22;9(1):305. 2019.
14. Hiasa Y, Otake Y, Tanaka R, Sanada S, **Sato Y**, Recovery of 3D rib motion from dynamic chest radiography and CT data using local contrast normalization and articular motion

model, *Medical Image Analysis*. 51:144-56. 2019.

15. Zahnd G, Saito K, Nagatsuka K, Otake Y, **Sato Y**, Dynamic Block Matching to assess the longitudinal component of the dense motion field of the carotid artery wall in B-mode ultrasound sequences - Association with coronary artery disease, Medical Physics, 45(11):5041–5053, 2018
16. Yokota F, Otake Y, Takao M, Ogawa T, Okada T, Sugano N, **Sato Y**. Automated muscle segmentation from CT images of the hip and thigh using a hierarchical multi-atlas method. International journal of computer assisted radiology and surgery., 13(7),977–986, July 2018
17. Uemura K, Takao M, Otake Y, Hamada H, Sakai T, **Sato Y**, Sugano N, "The distribution of bone mineral density in the femoral heads of unstable intertrochanteric fractures," Journal of Orthopaedic Surgery. 31;26(2):2309499018778325. 2018.
18. Shoji S, Hashimoto A, Nakamura T, Hiraiwa S, Sato H, **Sato Y**, Tajiri T, Miyajima A, "Novel application of three-dimensional shear wave elastography in the detection of clinically significant prostate cancer," Biomedical Reports, 1;8(4):373-7, 2018.
19. Takao M, Otake Y, Fukuda N, **Sato Y**, Armand M, Sugano N. The Posterior Capsular Ligamentous Complex Contributes to Hip Joint Stability in Distraction. *The Journal of arthroplasty*. 33(3):919-924, 2018.
20. Uemura K, Takao M, Otake Y, Koyama K, Yokota F, Hamada H, Sakai T, **Sato Y**, Sugano N. Can Anatomic Measurements of Stem Anteversion Angle Be Considered as the Functional Anteversion Angle?. *The Journal of arthroplasty*. 33(2):595-600, 2018.
21. Harada H, Kanaji S, Nishi M, Otake Y, Hasegawa H, Yamamoto M, Matsuda Y, Yamashita K, Matsuda T, Oshikiri T, Sumi Y, Nakamura T, Suzuki S, **Sato Y**, Kakeji Y. The learning effect of using stereoscopic vision in the early phase of laparoscopic surgical training for novices. *Surgical endoscopy*. 32(2):582-8, 2018.
22. Oura K, Otake Y, Shigi A, Yokota F, Murase T, **Sato Y**. Prediction of forearm bone shape based on partial least squares regression from partial shape. *The International Journal of Medical Robotics and Computer Assisted Surgery*. 13(3), 2017.
23. Uemura K, Takao M, Otake Y, Koyama K, Yokota F, Hamada H, Sakai T, **Sato Y**, Sugano N. Change in pelvic sagittal inclination from supine to standing position before hip arthroplasty. *The Journal of arthroplasty*. 32(8):2568-73, 2017.
24. Nishi M, Kanaji S, Otake Y, Harada H, Yamamoto M, Oshikiri T, Nakamura T, Suzuki S, Suzuki Y, Hiasa Y, **Sato Y**. Quantitative comparison of operative skill using 2-and 3-dimensional monitors during laparoscopic phantom tasks. *Surgery*. 161(5):1334-40, 2017.
25. Fukuda N, Otake Y, Takao M, Yokota F, Ogawa T, Uemura K, Nakaya R, Tamura K,

Grupp RB, Farvardin A, Armand M, Sugano N, **Sato Y**. Estimation of attachment regions of hip muscles in CT image using muscle attachment probabilistic atlas constructed from measurements in eight cadavers. *International journal of computer assisted radiology and surgery*. 12(5):733-42, 2017.

26. Shoji S, Hiraiwa S, Ogawa T, Kawakami M, Nakano M, Hashida K, **Sato Y**, Hasebe T, Uchida T, Tajiri T. Accuracy of real‐time magnetic resonance imaging‐transrectal ultrasound fusion image‐guided transperineal target biopsy with needle tracking with a mechanical position‐encoded stepper in detecting significant prostate cancer in biopsy‐naïve men. *International Journal of Urology*. 24(4):288-94, 2017.
27. Abdolali F, Zoroofi RA, Abdolali M, Yokota F, Otake Y, **Sato Y**. Automatic segmentation of mandibular canal in cone beam CT images using conditional statistical shape model and fast marching. *International journal of computer assisted radiology and surgery*. 12(4):581-93, 2017.
28. Kagiyama Y, Otomaru I, Takao M, Sugano N, Nakamoto M, Yokota F, Tomiyama N, Tada Y, **Sato Y**. CT-based automated planning of acetabular cup for total hip arthroplasty (THA) based on hybrid use of two statistical atlases. *International journal of computer assisted radiology and surgery* (Accepted for publication) 11(12):2253-71, 2016.
29. Tabrizi PR, Zoroofi RA, Yokota F, Nishii T, **Sato Y**. Shape-based acetabular cartilage segmentation: application to CT and MRI datasets. *International journal of computer assisted radiology and surgery*, 11(7):1247-65, 2016.
30. Abdolali F, Zoroofi RA, Otake Y, **Sato Y**. Automatic segmentation of maxillofacial cysts in cone beam CT images. *Computers in biology and medicine*, 72:108-19, 2016.
31. Okada T, Linguraru MG, Hori M, Summers RM, Tomiyama N, **Sato Y**. Abdominal multi-organ segmentation from CT images using conditional shape–location and unsupervised intensity priors. *Medical image analysis*, 26(1), 1-18, 2015.
32. Schumann S, **Sato Y**, Nakanishi Y, Yokota F, Takao M, Sugano N, Zheng G (2015). Cup Implant Planning Based on 2D/3D Radiographic Pelvis Reconstruction-First Clinical Results. *IEEE Transactions on Biomedical Engineering*, 62(11), 2665 – 2673, 2015.
33. Matsugasumi T, Baco ., Palmer S, Aron M, **Sato Y**, Fukuda N, Suel E, Bernhard J-C, Nakagawa H, Azhar RA, Gill IS, Ukimura O. Prostate cancer volume estimation by combining magnetic resonance imaging and targeted biopsy-proven cancer core-length: Correlation with cancer volume. *The Journal of urology*. 194(4) 957-965, 2015
34. Tabrizi PR, Zoroofi RA, Yokota F, Tamura S, Nishii T, **Sato Y**. Acetabular cartilage segmentation in CT arthrography based on a bone-normalized probabilistic atlas. *International journal of computer assisted radiology and surgery*, 10(4), 433-446, 2015
35. Yamazaki T, Futai K, Tomita T, **Sato Y**, Yoshikawa H, Tamura S, Sugamoto K. 3D

kinematics of mobile-bearing total knee arthroplasty using X-ray fluoroscopy. *International journal of computer assisted radiology and surgery*, 10(4), 487-495, 2015.

36. Hori M, Okada T, Higashiura K, **Sato Y**, Chen YW, Kim T, Onishi H, Eguchi H, Nagano H, Umeshima K, Wakasa K, Tomiyama N. Quantitative Imaging: Quantification of Liver Shape on CT Using the Statistical Shape Model to Evaluate Hepatic Fibrosis. *Academic radiology*, 22(3), 303-309, 2015.
37. Deng J, Han XH, Chen YW, Xu G, **Sato Y**, Hori M, Tomiyama N. Sparse and Low-Rank Matrix Decomposition for Local Morphological Analysis to Diagnose Cirrhosis. *IEICE TRANSACTIONS on Information and Systems*, 97(12), 3210-3221, 2014
38. Foruzan, AH, Chen, YW, Hori M, **Sato Y,** Tomiyama, N. Capturing large shape variations of liver using population-based statistical shape models. *International journal of computer assisted radiology and surgery*, 9(6), 967-977, 2014.
39. Mofrad FB, Zoroofi RA, Tehrani-Fard AA, Akhlaghpoor S, **Sato Y**. Classification of Normal and Diseased Liver Shapes based on Spherical Harmonics Coefficients. *Journal of medical systems*, 38(5), 1-9, 2014.
40. Morooka KI, Nakamoto M, **Sato Y**, A survey on statistical modeling and machine learning approaches to computer assisted medical intervention: Intraoperative anatomy modeling and optimization of interventional procedures. *IEICE TRANSACTIONS on Information and Systems*, 96(4), 784-797, 2013.
41. Otomaru I, Nakamoto M, Kagiyama Y, Takao M, Sugano N, Tomiyama N, Tada Y, **Sato Y**, Automated preoperative planning of femoral stem in total hip arthroplasty from 3D CT data: Atlas-based approach and comparative study, *Medical Image Analysis*, 16(2), 415-26, 2012.
42. Foruzan AH, Zoroofi RA, **Sato Y**, Hori M, A Hessian-based filter for vascular segmentation of noisy hepatic CT scans. *International Journal of Computer Assisted Radiology and Surgery*, 7(2), 199-205, 2012.
43. Mofrad FB, Zoroofi RA, Tehrani-Fard, Akhlaghpoor A, Hori M Chen Y-W, **Sato Y**: Statistical construction of a Japanese male liver phantom for internal radionuclide dosimetry, *Radiation Protection Dosimetry*, 141(2), 140-148, 2010.
44. Furuzan, AH, Zoroofi RA, Hori M, **Sato Y**, A knowledge-based technique for liver segmentation in CT data, *Computerized Medical Imaging and Graphics,* 33(8): 567-587, 2009.
45. Khanmohammadi M, Zoroofi RA, Nishii T, Tanaka H, **Sato Y,** A Hybrid Technique for Thickness-Map Visualization of the Hip Cartilages in MRI, *IEICE Transactions on Information and Systems*, E92-D(11):2253-2263, 2009.
46. Koyama T, Sugano N, Nishii T, Miki H, Takao M, **Sato Y**, Yoshikawa H, Tamura S:

MRI-based surgical simulation of transtrochanteric rotational osteotomy for femoral head osteonecrosis, *Journal of Orthopaedic Research*, 27(4):447-451, 2009.

47. Okada T, Iwasaki Y, Koyama T, Sugano N, Chen YW, Yonenobu K, **Sato Y**: Computer-assisted preoperative planning of proximal femur fracture using 3-D CT data, *IEEE Transactions on Biomedical Engineering*, 56(3):749-759, 2009.
48. Kurazume R, Nakamura K, Okada T, **Sato Y**, Sugano N, Koyama T, Iwashita Y, Hasegawa T: 3D reconstruction of a femoral shape using a parametric model and two 2D fluoroscopic images, *Computer Vision and Image Understanding*, 113(2);202-211, 2009..
49. Okada T, Shimada R, Hori M, Nakamoto M, Chen YW, Nakamaura H, **Sato Y**: Automated segmentation of the liver from 3D CT images using probabilistic atlas and multi-level statistical shape model, *Academic Radiology*, 15(11):1390-1403, 2008.
50. Akazawa K, Tamaki, Y, Taguchi T, Tanji Y, Miyoshi Y, Kim SJ, Shimazu K, Ueda S, Yanagisawa T, Okishiro N, Imazato M, Yasuyuki K, **Sato Y**, Tamura S, Noguchi S, Potential of Reduction in Total Tumor Volume Measured with 3D-MRI as a Prognostic Factor for Locally-Advanced Breast Cancer Patients Treated with Primary Chemotherapy, *The Breast Journal*, 14(6):523-531, 2008.
51. Otomaru I, Nakamoto M, Takao M, Sugano N, Kagiyama Y, Yoshikawa H, Tada Y, **Sato Y**, Automated preoperative planning of femoral component for total hip arthroplasty (THA) from CT images, *Journal of Biomechanical Science and Engineering*, 3(4): 478-489, 2008.
52. Nakamoto M, Nakada K, **Sato Y**, Konishi K, Hashizume M, Tamura S: Intraoperative magnetic tracker calibration using a magneto-optic hybrid tracker for 3D ultrasound-based navigation in laparoscopic surgery, *IEEE Transactions on Medical Imaging* , 27(2):255-270, 2008.
53. Miki H, Yamanashi W, Nishii T, **Sato Y**, Yoshikawa H, and Sugano N: Anatomic hip range of motion after implantation during total hip arthroplasty as measured by a navigation system, *The Journal of Arthroplasty*, 22(7): 946-952, 2007.
54. Nakamoto M, Hirayama H, **Sato Y**, Konishi K, Kakeji Y, Hashizume M, and Tamura S: Recovery of respiratory motion and deformation of the liver using laparoscopic freehand 3D ultrasound system, *Medical Image Analysis*, 11(5): 429-442, 2007. **[Medical Image Analysis – MICCAI'06 Second Best Paper Prize]**
55. Iwashita Y, Kurazume R, Konishi K, Nakamoto M. Aburaya N, **Sato Y**, Hashizume M, Hasegawa T: Fast model-image registration using a two-dimensional distance map for surgical navigation system, *Advanced Robotics*, 21(7): 751-770, 2007.
56. Konishi K, Nakamoto M, Kakeji Y, Tanoue K, Kawanaka H, Yamaguchi S, Ieiri S, **Sato Y**, Maehara Y, Tamura S, and Hashizume M: A real-time navigation system for laparoscopic

surgery based on three-dimensional ultrasound using magneto-optic hybrid tracking configuration, *International Journal of Computer Assisted Radiology and Surgery*, 2(1): 1-10, 2007.

57. Sugano N, Nishii T, Miki H, Yoshikawa H, **Sato Y**, and Tamura S: Mid-term results of cementless total hip replacement using a ceramic-on-ceramic bearing with and without computer navigation, *Journal of Bone and Joint Surgery – British*, 89-B(4): 455-460, 2007.
58. Cheng Y, **Sato Y**, Tanaka H, Nishii T, Sugano N, Nakamura H, Yoshikawa H, Wang S, and Tamura S: Accurate thickness measurement of two adjacent sheet structures in CT images, *IEICE Transactions on Information and Systems*, E90-D(1): 271-282, 2007.
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Refereed Conference Papers (Selected)

1. Sakamoto M, Hiasa Y, Otake Y, Takao M, Suzuki Y, Sugano N, **Sato Y**, Automated Segmentation of Hip and Thigh Muscles in Metal Artifact Contaminated CT using CNN, International Forum on Medical Imaging in Asia 2019（IFMIA), Jan. 2019 **[Best paper award]**
2. Hiasa Y, Otake Y, Takao M, Matsuoka T, Takashima K, Carass A, Prince J, Sugano N, **Sato Y**, Cross-modality image synthesis from unpaired data using CycleGAN: Effects of gradient consistency loss and training data size, SASHIMI 2018 (Simulation and Synthesis in Medical Imaging): A MICCAI 2018 Workshop, Sep. 2018
3. Otake Y, Takao M, Fukuda N, Takagi S, Yamamura N, Sugano N, **Sato Y,** Registration-Based Patient-Specific Musculoskeletal Modeling Using High Fidelity Cadaveric Template Model, Medical Image Computing and Computer Assisted

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8. Yamazaki T, Tomita T, **Sato Y**, Yoshikawa H, Sugamoto K, Robust 3D kinematic analysis of total knee arthroplasty using statistical motion model. Proc. 17th Annual Meeting of CAOS-International, Aachen, Germany, June 2017 **[Best Technical Poster Award]**
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Invited Talks (Selected)

1. **Sato Y**, Otake Y, Hiasa Y Takao M, Sugano N, Deep learning in musculoskeletal image analysis: Big data analysis and cross-modality adaptation, 2020 Annual CITI Symposium, Shanghai Jiao Tong University, Online, December 14, 2020.
2. **Sato Y**, Otake Y, Hiasa Y Takao M, Sugano N, Suetsugu S, Deep learning in medical imaging and its perspective to cell imaging, Next Generation Live Imaging to Decipher Cellular Function, The 42nd Annual Meeting of the Molecular Biology Society of Japan, Fukuoka Convention Center, Japan, December 5, 2019.
3. **Sato Y**, Otake Y, Hiasa Y Takao M, Sugano N, Musculoskeletal Medical Imaging with Deep Learning: Towards personalized musculoskeletal modeling, The First Purple Mountain International Health Conference, Southeast University, China, June 25, 2019.
4. **Sato Y**, Otake Y, Takao M, Sugano N, Multidisciplinary computational anatomy modeling of musculoskeletal structures and total hip arthroplasty from medical images, Computational Methods and Clinical Applications for Spine Imaging, The Fifth MICCAI MSKI Workshop & Challenge, Granada, Spain, September 16, 2018.
5. **Sato Y**, Statistical Modelling in CAOS, Panel Discussion 2 Biomechanics and Personalised morpho-functional Modelling in CAOS, CAOS-International 2017, Aachen, Germany, June 16, 2017.
6. **Sato Y**, Statistical shape modeling for CT-based automated THA planning, Advanced

Educational Workshop, Statistical modelling and data mining, CAOS-International 2017, Aachen, Germany, June 14, 2017.

7. **Sato Y**, Multidisciplinary Computational Anatomy for Medical Image Analysis: From Shape to Function and Pathology, Third International Conference on Innovation in Medicine and Healthcare (InMed-15), Kyoto, Japan, September 11, 2015.
8. **Sato Y**, Past, Present, and Future of In silico Human, International Symposium on Musculoskeletal Simulation, Osaka, Japan, August 29, 2015.
9. **Sato Y**, Computational Anatomy Modeling of Abdominal Organs and Musculoskeletal Structures, Symposium on Statistical Shape Models & Applications, Delémont, Switzerland, June 11-13, 2014,
10. **Sato Y**, Computational anatomy: Towards complete medical image understanding and clinical decision support from 3D medical images, 35th Annual International Conference of the IEEE Engineering in Medicine and Biology Society (EMBC 2013), Osaka, Japan, July 3-7, 2013.
11. **Sato Y**, Computational Anatomy: Towards complete medical image understanding, International Forum of Medical Imaging in Asia 2012, Daejeon, Korea, November 16-17, 2012.
12. **Sato Y**, Combining statistical atlases and simulations for automated preoperative planning for total hip arthroplasty (THA), Educational Workshop "Statistical Shape Modeling and 2D-3D Reconstruction", 10th Annual Meeting of the International Society of Computer Assisted Surgery (CAOS-International), Paris, France, June 17, 2010.
13. **Sato Y**, Atlas-based computer assisted surgery, MICCAI Tutorial on Medical Robotics and Computer Assisted Intervention, London, UK, September 20, 2009.
14. **Sato Y**, Atlas-based automated preoperative planning for total hip arthroplasty (THA), Educational Workshop "Statistical Shape Modeling", 9th Annual Meeting of the International Society of Computer Assisted Surgery (CAOS-International), Boston, MA, USA, June 16, 2009.
15. **Sato Y,** Atlas-based computer assisted surgery, France-Japan Research Workshop on Medical and Surgical Robotics, Tokyo, Japan, May 10-11, 2009.
16. **Sato Y**, Atlas-based computer assisted surgery, Winter School on Medical Robotics and Computer Integrated Interventional System, Baltimore, MD, USA, January 12-16, 2009.
17. **Sato Y**, Intraoperative recovery of organ motion and deformation for endoscopic surgical navigation, 4th Workshop on Augmented environments for Medical Imaging including Augmented Reality in Computer-aided Surgery (AMI-ARCS 2008), New York City, NY, USA, September 10, 2008.
18. **Sato Y**, Computational modeling of organ structures for CAD, Computer Assisted

Radiology and Surgery: 22nd International Symposium and Exhibition (CARS2008), Barcelona, Spain, June 28, 2008.

19. **Sato Y**, Atlas-based segmentation and automated surgical planning, Asian Conference on Computer Aided Surgery (ACCAS 2007), Singapore, December 1, 2007.
20. **Sato Y**, Atlas-based patient modeling and automated surgical planning, Joint JSPS-SNSF Seminar on Computer-Aided Surgery, Osaka, Japan, September 22-24, 2007.
21. **Sato Y**, Medical image analysis for computer assisted surgery, Computer Assisted Radiology and Surgery: 20th International Symposium and Exhibition (CARS2006), Osaka, Japan, June 30, 2006.

Invited Talks: Yoshinobu Sato

1. **Sato Y**, Otake Y, Hiasa Y Takao M, Sugano N, Deep learning in musculoskeletal image analysis: Big data analysis and cross-modality adaptation, 2020 Annual CITI Symposium, Shanghai Jiao Tong University, Online, December 14, 2020.
2. **Sato Y**, Otake Y, Hiasa Y Takao M, Sugano N, Suetsugu S, Deep learning in medical imaging and its perspective to cell imaging, Next Generation Live Imaging to Decipher Cellular Function, The 42nd Annual Meeting of the Molecular Biology Society of Japan, Fukuoka Convention Center, Japan, December 5, 2019.
3. **Sato Y**, Otake Y, Hiasa Y Takao M, Sugano N, Musculoskeletal Medical Imaging with Deep Learning: Towards personalized musculoskeletal modeling, The First Purple Mountain International Health Conference, Southeast University, China, June 25, 2019.
4. **Sato Y**, Otake Y, Takao M, Sugano N, Multidisciplinary computational anatomy modeling of musculoskeletal structures and total hip arthroplasty from medical images, Computational Methods and Clinical Applications for Spine Imaging, The Fifth MICCAI MSKI Workshop & Challenge, Granada, Spain, September 16, 2018.
5. **Sato Y**, Statistical Modelling in CAOS, Panel Discussion 2 Biomechanics and Personalised morpho-functional Modelling in CAOS, CAOS-International 2017, Aachen, Germany, June 16, 2017.
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17. **Sato Y**, Intraoperative recovery of organ motion and deformation for endoscopic surgical navigation, 4th Workshop on Augmented environments for Medical Imaging including Augmented Reality in Computer-aided Surgery (AMI-ARCS 2008), New York City, NY, USA, September 10, 2008.
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