Hyunjin Park Ph.D.

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School of Electronic Electrical Eng, Sungkyunkwan University, Suwon, Korea

Education and Training

03/1993- 02/1997	Electrical Engineering, Seoul National University, Seoul, South Korea	B.S.
03/1997- 08/1998	South Korean Military Service, Army, Private, Kwangju, South Korea	
09/1998- 04/2000	Biomedical Engineering, University of Michigan, Ann Arbor, MI	M.S.
09/1999- 12/2000	Electrical Engineering, University of Michigan, Ann Arbor, MI	M.S.
09/2000- 08/2003	Biomedical Engineering, University of Michigan, Ann Arbor, MI Title: Adaptive Registration and Atlas based Segmentation Co-advisors: Charles R. Meyer and Jeffrey A. Fessler	Ph.D.
06/2003- 05/2004	Radiology, University of Michigan Medical School, Ann Arbor, MI Field: Image Processing in Medical Imagery Mentor: Charles R. Meyer	Postdoctoral Fellow

Academic Appointments

06/2004- 08/2007	Research Investigator, Department of Radiology, University of Michigan, Ann Arbor, MI
09/2007 – 02/2009	Assistant Professor (research), Department of Radiology, University of Michigan, Ann Arbor, MI
03/2009 - 08/2012	Assistant Professor, Department of Biomedical Engineering, Gachon University, Korea
09/2012 – 02/2013	Assistant Professor, School of Electronic Electrical Engineering, Sungkyunkwan University, Korea
03/2013 -	Associate Professor, School of Electronic Electrical Engineering, Sungkyunkwan University, Korea
09/2015 -	Associate Professor, Department of Biomedical Engineering, Sungkyunkwan University, Korea

Research Interests

1. Image processing methods for medical imagery. Explore novel processing techniques, primarily image registration and segmentation.

2. Medical image analysis for histological sections. Develop image processing methods to register histology sections with anatomical scans to verify truth with invivo scans.

3. Medical image analysis for cancer management. Develop computer aided methods to provide automatic and quantifiable means to follow up tumor volume change.

4. Application of computer vision algorithm to medical imagery

Editorial board/peer-review service

09/2011-Current	Editorial board for Journal of Biomedical Graphics and Computing
01/2012-Current	Editorial board for American Journal of Alzheimer's Disease
07/2012-Current	Editorial board for Advances in Computed Tomography
01/2013-Current	Editorial board for Biomedical Engineering Letters
06/2013-Current	Editorial board for Open Journal of Radiology
12/2002-Current	Reviewer for IEEE Transactions on medical imaging
03/2006-Current	Reviewer for Medical Image Computing and Computer Aided Intervention (MICCAI)
08/2006-Current	Reviewer for IEEE Transactions on Image Processing
11/2009-Current	Reviewer for Medical Physics
10/2010-Current	Reviewer for Journal of Digital Imaging
03/2009-Current	Reviewer for Journal of Biomedical Engineering Research (KOREAN)

Teaching

01/2007-04/2007	**Instructor to a graduate level image processing course**, course number EECS556, in Dept. of Electrical Engineering, Univ. of Michigan, Ann Arbor, MI.
05/2003-01/2009	Mentor to 5 graduate students from Dept. of Biomedical Engineering, UM (R. Narayanan, M. Zhou, and Y. Jin) and Dept. of Electrical Engineering (T. Yeo and R. Bhagalia), UM(Univ. of Michigan, Ann Arbor, MI).
09/2004-01/2009	Mentor to a postdoctoral fellow (B. Ma), Dept. of Radiology, UM
11/2005	RSNA, Categorical Course in Diagnostic Radiology Physics: Multidimensional Image Processing, Analysis, and Display - Introduction to Multidimensional Medical Imaging, Title: Automatic Registration Methods, C. Meyer, H. Park, B. Kim, and P. Bland, p.89-96, 2005.
03/2009- current	Various undergraduate courses in image (signal) processing and probability

Bibliography

Peer-Reviewed Journals and Publications (n = 46)
JCR indexed (n = 39), main author papers in JCR (n = 27), LNCS (n = 5), scopus (n = 2)

1. B. Park, M. Kim, J. Seo, J.-M. Lee, and H. Park, "Connectivity analysis and feature classification in attention deficit hyperactivity disorder sub-types: A task functional magnetic resonance imaging study", Brain Topography, accepted Nov 2015.

2. B. Park and H. Park, "Connectivity differences between adult male and female patients with attention deficit hyperactivity disorder according to resting-state fMRI", Neural Regeneration Research, accepted Nov 2015.

3. B. Park, J. Seo, J. Yi, and H. Park, "Structural and functional brain connectivity of people with obesity and prediction of body mass index using connectivity", PLoS ONE 10(11): e0141376, doi:10.1371/journal.pone.0141376, Nov 2015.

4. O.-H. Kwon, H. Park, S. W. Seo, D. L. Na, and J.-M. Lee, "A Framework to Analyze Cerebral Mean Diffusivity Using Surface Guided Diffusion Mapping in Diffusion Tensor Imaging", Frontiers in Neuroscience, http://dx.doi.org/10.3389/fnins.2015.00236, Jul 2015.

5. S.-J. Choi, J.-H. Kim, J. Seo, H.-S. Kim, J.-M. Lee, and H. Park, "Parametric Response Mapping of Dynamic CT for Predicting Intrahepatic Recurrence of Hepatocellular Carcinoma after Conventional Transcatheter Arterial Chemoembolization", European Radiology, vol. 26, no. 1, p.225-234, 2016.

6. S.-J. Son, J.-H. Kim, J. Seo, J.-M. Lee, and H. Park, "Connectivity Analysis of Normal and Mild Cognitive Impairment Patients based on FDG and PiB-PET Images", Neuroscience Research, vol. 98, p. 50-58, 2015.

7. S. H. Lee, M. Kim, and H. Park, "Planning for selective amygdalohippocampectomy involving less neuronal fiber damage based on brain connectivity using tractography", Neural Regeneration Research, vol. 10, no. 7, p. 1107-1112, 2015.

8. D. Park*, B.-K. Jung*, H. Park*, H. Lee, G. Lee, J. Park, U. Shin, J. H. Won, Y. J. Jo, J. W. Chang, S. W. Lee, D. S. Yoon, C.-W. Kim, and J. Seo, "Sound Packing DNA: packing open circular DNA with low-intensity ultrasound", Scientific Reports, vol. 5, article 9846, doi: 10.1038/srep09846, 2015 (* equal contribution).

9. D. Park, B.-K. Jung, Y. Lee, J.-Y. Jang, M.-K. Kim, J.-K. Lee, H. Park, J. Seo, and C.-W. Kim, "Evaluation of in vivo antitumor effects of ANT2 shRNA delivered using PEI and ultrasound with microbubbles ", Gene Therapy, vol. 22, no. 4, p.325-332, 2015.

10. S.H. Lee, J. Seo, J.-M. Lee, and H. Park, "Differences in early and late mild cognitive impairment tractography using diffusion tensor MRI", NeuroReport, vol. 25, no.17, p. 1393-1398, 2014.

11. J. Seo, S.-Y. Hwang, J.-M. Lee, and H. Park, "Spatially varying regularization of deconvolution in 3D microscopy", Journal of Microscopy, vol. 255, no. 2, p.94-103, 2014.

12. H. Park, J. Yang, J. Seo, Y. Choi, K. Lee, and J.-M. Lee, "Improved explanation of human intelligence using cortical features with second order moments and regression", Computers in Biology and Medicine, vol. 47, p. 139-146.

13. S.-J. Choi, J.-H. Kim, J. Seo, H.-S. Kim, J.-M. Lee, and H. Park, "Parametric response mapping of dynamic CT as an imaging biomarker to distinguish viability of hepatocellular carcinoma treated with transcatheter arterial chemoembolization", Abdominal Imaging, vol. 39, no. 3, p.518-525, 2014.

14. S.H. Lee and H. Park, "Parametric response mapping of longitudinal PET scans and their use in detecting changes in Alzheimer's diseases", Biomedical Engineering Letters, vol. 4, no. 1, p. 73-79, 2014. (scopus)

15. S.-J. Choi, H.-S. Kim, and H. Park, "Differentiation of Solid Pancreatic Tumors by Using Dynamic Contrast-Enhanced MRI", Journal of the Korean Physical Society, vol. 64, no. 2, p. 313-321, 2014.

16. D. Park, H. Park, J. Seo, and S. Lee, "Sonophoresis in transdermal drug deliverys", Ultrasonics, vol. 54, p. 56-65, 2014.

17. J. Park, D. Park, U. Shin, S. Moon, C. Kim, H. Kim, <u>H. Park</u>, K. Choi, B. Jung, J. Oh, and J. Seo, "Synthesis of Laboratory Ultrasound Contrast Agents", Molecules, vol. 18, 13078-13095, 2013.

18. <u>H. Park</u>, J. Yang, J. Seo, and J.-M. Lee, "Dimensionality reduced cortical features and their use in predicting longitudinal changes in Alzheimer's disease", Neuroscience Letters, vol. 550, p. 17-22, 2013.

19. J. Yang, U. Yoon, H. Yun, K. Im, Y. Y. Choi, K.-H. Lee, <u>H. Park</u>, M. G. Hough, and J.-M. Lee, "Prediction for Human Intelligence using Morphometric Characteristics of Cortical Surface: Partial Least Square Analysis", Neuroscience, vol. 246, p. 351-361, 2013.

20. J. Cha, H. J. Jo, H. J. Kim, S. W. Seo, H.-S. Kim, U. Yoon, <u>H. Park</u>, D. L. Na, and J.-M. Lee, "Functional alteration patterns of default mode network: comparisons of normal aging, amnestic mild cognitive impairment and Alzheimer's disease", European Journal of Neuroscience, vol. 37, p. 1916-1924, 2013.

21. S.-J. Choi, H.-S. Kim, J. H. Kim, H.-Y. Choi, and <u>H. Park</u>, "Use of Arterial to Equilibrium Enhancement Washout to Predict Viability in Liver Cancers Treated with Transcatheter Arterial Chemoembolization", Journal of the Korean Physical Society, vol.62, p.1204-1210, 2013.

22. D. Park, J. Park, H. Kim, C. H. Kim, T.-Y. Han, <u>H. Park</u>, and J. Seo, "A high-precision angular control system for HIFU calibration", Ultrasonics, vol. 53, 45-52, 2013.

23. <u>H. Park</u>, J. Yang, J. Seo, and J.-M. Lee, "Dimensionality reduced cortical features and their use in the classification of Alzheimer's disease and mild cognitive impairment", Neuroscience Letters, vol. 529, 123-127, 2012.

24. <u>H. Park</u> and C. Meyer, "Value of a probabilistic atlas in medical image segmentation regarding non-rigid registration of abdominal CT scans", Journal of the Korean Physical Society, vol. 61, p.1156-1162, 2012.

25. <u>H. Park</u>, "Comparison of Distance Measures for Manifold Learning: Application to Alzheimer's Brain Scans", Journal of the Korean Physical Society, vol. 61, p. 1148-1155, 2012.

26. <u>H. Park</u>, J. S. Park, J.-K. Seong, D. L. Na, and J.-M. Lee, "Cortical surface registration using spherical thin-plate spline with sulcal lines and mean curvature as features", Journal of Neuroscience Methods, vol. 206, p.46-53, 2012.

27. <u>H. Park</u>, "ISOMAP induced manifold embedding and its application to Alzheimer's disease and mild cognitive impairment", Neuroscience Letters, vol. 513, p.140-144, 2012.

28. D. Park, H. Ryu, H. S. Kim, Y.-S. Kim, K.-S. Choi, <u>H. Park</u>, and J. Seo, "Sonophoresis using ultrasound contrast agents for transdermal drug delivery: An in vivo experimental study", Ultrasound in Medicine and Biology, vol. 38, p.642-650, 2012.

29. <u>H. Park,</u> D. Wood, H. Hussain, C. Meyer, R. Shah, T. Johnson, T. Chenevert, and M. Piert, "Introducing Parametric PET/MR Fusion Imaging of Primary Prostate Cancer", Journal of Nuclear Medicine, vol. 53, p.546-551, 2012.

30. <u>H. Park</u>, "Manifold embedding induced by multidimensional scaling and its application to Alzheimer's disease and mild cognitive impairment", Journal of the Korean Physical Society, vol. 59, No. 6, p. 3414-3421, 2011.

31. S. Sarkar, T. D. Johnson, B Ma, <u>H. Park</u>, P. H. Bland, T. L. Chenevert, A.F. Schott, B.D. Ross, and C. R. Meyer, "Evaluation of an automatic registration-based algorithm for direct measurement

of volume change in tumors", International Journal of Radiation Oncology Biology Physics, vol. 83, p.1038-1046, 2012.

32. R. Garcia-Parra, D. Wood, R. B. Shah, J. Siddiqui, H. Hussain, <u>H. Park</u>, T. Desmond, C. Meyer, and M. Piert, "Investigation on tumor hypoxia in resectable primary prostate cancer as demonstrated by (18)F-FAZA PET/CT utilizing multimodality fusion techniques" European Journal of Nuclear Medicine and Molecular Imaging, vol. 10, p. 1816-1823, 2011.

33. <u>H. Park</u> and J. Seo, "Application of Multidimensional Scaling to Quantify Shape in Alzheimer's Disease and Its Correlation with Mini Mental State Examination: A Feasibility Study ", Journal of Neuroscience Methods, vol. 194(2), p.380-385, 2011.

34. <u>H. Park</u>, A. Hero III, P. Bland, M. Kessler, J. Seo, and C. Meyer, "Construction of abdominal probabilistic atlases and their value in segmentation of normal organs in abdominal CT scans", IEICE Trans. On Information and Systems, vol. E93-D, p.2291-2301, 2010.

35. <u>H. Park</u>, C. Meyer, D. Wood, A. Khan, R. Shah, H. Hussain, J. Siddiqui, J. Seo, T. Chenevert, and M. Piert, "Validation of automatic target volume definition as demonstrated for 11C-Choline PET/CT of human prostate cancer using multi-modality fusion techniques", Academic Radiology, vol. 17, p.614-623, 2010.

36. D. Park, J. Yoon, J. Park, B. Jung, <u>H. Park</u>, and J. Seo, "Transdermal drug delivery aided by an ultrasound contrast agent: An in vitro experimental study", Open Biomedical Engineering Journal, vol.4, p. 56-62, 2010. (scopus)

37. M. Piert, <u>H. Park</u>, A. Khan, J. Siddiqui, H. Hussain, T. Chenevert, D. Wood, T. Johnson, R. Shah, and C. Meyer, "Detection of Aggressive Primary Prostate Cancer with 11C-Choline PET/CT Using Multimodality Fusion Techniques", Journal of Nuclear Medicine, vol. 50, p. 1585-1593, 2009.

38. <u>H. Park</u>, M. Piert, A. Khan, R. Shah, H. Hussain, J. Siddiqui, T. Chenevert, and C. Meyer, "Registration methodology for histological sections and in vivo imaging of human prostate", Academic Radiology, p.1027-1039, vol. 15, 2008.

39. B. Ma, R. Narayanan, <u>H. Park</u>, A. O. Hero III, P. H. Bland, C. R. Meyer, "Comparing Pairwise and Simultaneous Joint Registrations of Decorrelating Interval Exams using Entropic Graphs", Lecture notes in computer sciences, p.270-282, vol. 4584, in IPMI, 2007. (LNCS)

40. <u>H. Park</u>, P. H. Bland, A. O. Hero III, and C. R. Meyer, "Least biased target selection in probabilistic atlas construction", Lecture notes in computer sciences, vol. 3750, p. 419-426, in MICCAI, 2005. (LNCS)

41. R. Narayanan, J. A. Fessler, <u>H. Park</u>, and C. R. Meyer, "Diffeomorphic Nonlinear Transformations: A local parametric approach for image registration", Lecture notes in computer sciences, vol. 3565, p. 174-185, in IPMI, 2005. (LNCS)

42. <u>H. Park</u>, C R. Meyer, and B. Kim, "Improved Motion Correction in fMRI by Joint Mapping of Slices into an Anatomical Volume", Lecture notes in computer sciences, vol. 3217, p. 745-751, in MICCAI, 2004. (LNCS)

43. <u>H. Park</u>, P. H. Bland, K. K. Brock, and. C. R. Meyer, "Adaptive registration using local information measures", Medical Image Analysis, vol. 8, p. 465-473, 2004.

44. <u>H. Park</u> and C. R. Meyer, "Grid refinement in adaptive non-rigid registration", Lecture notes in computer sciences, vol. 2879, p. 796-803, in MICCAI, 2003. (LNCS)

45. C. R. Meyer, <u>H. Park</u>, and P. H. Bland, "Method for Quantifying Volumetric Lesion Change in Interval Liver CT Examination", IEEE Transactions on medical imaging, vol. 22, p. 776-781, 2003.

46. <u>H. Park</u>, P. H. Bland, and C. R. Meyer, "Construction of an Abdominal Probabilistic Atlas and its application in Segmentation", IEEE Transactions on medical imaging, vol. 22, p. 483-492, 2003. Cited 302 as of December 2015.

Korean Journals (학진등재지)
1. 손성진, <u>박현진</u>, "정상 노화군과 경도인지장애 환자군의 18F-FDG-PET 과 11C-PIB-PET 영상을 이용한 뇌 연결망 분석", 의공학회지, vol. 35, no. 3, 68-74, 2014.
2. <u>박현진</u>, 지영준, 서종범, "새로운 학부 의공학 교육과정의 일환으로 의공학 실험과목의 제안", 의공학회지, vol. 32, p.289-294, 2011.
3. <u>박현진</u>, "개선된 학부 의공학 소프트웨어 교육과정을 위한 새로운 과목의 제안", 의공학회지, vol. 32, p.279-284, 2011.
4. <u>박현진</u>, 윤의중, 서종범, "다차원 척도법(MDS)을 사용한 새로운 형태 정량화 기법", 의공학회지, vol.31, p.128-134, 2010.

Conference Proceedings

1. <u>H. Park</u> and C. R. Meyer, "Information Theory for Locally Adaptive Registrations", First SIAM Conference on Imaging Science (SIAG/IS) (IS02), March 2002.
2. <u>H. Park</u>, P. H. Bland, and C. R. Meyer, "Methods for quantifying lesion change from interval liver examinations", International Workshop on growth and motion in 3d medical image, June 2002.
3. <u>H. Park</u> and C. R. Meyer, "Effects of voxel dimension, anisotropy and data set orientation on data set distribution", International Workshop on growth and motion in 3d medical image, June 2002.
4. <u>H. Park</u>, R. Bhagalia, C. R. Meyer, and B. Kim, "Improved Motion Correction by Joint Mapping of Slices to an Anatomical Volume Demonstrated by Simulated fMRI Time Series", International Society of Magnetic Resonance in Medicine (ISMRM), May 2005.
5. B. Ma, R. Narayanan, <u>H. Park</u>, A. Hero III, P. H. Bland, C. R. Meyer, "Joint registration of multiple images using entropic graphs", SPIE Medical Imaging, February 2007.
6. R. Narayanan, J. A. Fessler, B. Ma, <u>H. Park</u>, C. R. Meyer, " Local mismatch location and spatial scale detection in image registration", SPIE Medical Imaging, February 2007.
7. <u>H. Park</u>, S. Kwee, G. P. Thibault, R. Stack, I. A. Sesterhenn, K. Potter, and C. R. Meyer, "Registration methods for histological slides and ex vivo MRI of prostate", IEEE Nuclear Science Symposium and Medical Image Conference, October 2007.
8. S. Sarkar, R. Narayanan, <u>H. Park</u>, B. Ma, P. H. Bland, and C. R. Meyer, "Quantitative growth measurement of lesions in hepatic interval CT exams", SPIE Medical Imaging, February 2008.
9. M. Piert, <u>H. Park</u>, J. Siddiqui, A. Khan, C. Meyer, R. Shah, and D. Wood, " Lack of tumor hypoxia in primary prostate cancer as demonstrated by 18F-FAZA PET/CT and immunohistochemistry", Society of Nuclear Medicine (SNM) 2008..
10. M. Piert, <u>H. Park</u>, A. Khan, C. Meyer, R. Shah, and D. Wood, "Performance of multi-modality molecular imaging of prostate cancer", Society of Nuclear Medicine (SNM) 2008..

11. M. Piert, <u>H. Park</u>, R. Shah, A. Khan, and C. Meyer, "Registration methodology for PET-CT, MRI and histology for the human prostate", Society of Nuclear Medicine (SNM) 2008..
12. M. R. Piert, <u>H. Park</u>, A. Khan, H. Hussain, C. Meyer, R. Shah, and D. Wood; "Molecular Imaging of Primary Prostate Cancer Identifies High-Risk Disease", European Association of Nuclear Medicine (EANM) 2008.
13. <u>H. Park,</u> M. Piert, B. Ma, and C. Meyer, "Registration methodology of histology with in vivo 3T MRI for human prostate", ISMRM 2009.
14. <u>H. Park</u> and C. Meyer, "Value of probabilistic atlas for segmentation related to different degrees of freedom in non-rigid registration", Worldcomp 2012, IPCV 2012.
15. S. H. Lee, J. H. Kim, S. J. Son, and <u>H. Park</u>, "PET image analysis using Parametric Response Map for Mild Cognitive Impairment", Worldcomp 2013, IPCV 2013.
16. S. H. Lee, J. H. Kim, S. J. Son, and <u>H. Park</u>, "Longitudinal PET Image Analysis of Alzheimer's Disease Using Parametric Response Map", IEEE MIC 2013.
17. J. H. Kim, S. H. Lee, S. J. Sohn, S. J. Choi, and <u>H. Park</u>, "Application of Parametric Response Map to Distinguish Between Viable and Non-Viable Hepatocellular Carcinoma of Dynamic CT", IEEE MIC 2013.