

# Yuichi Tanaka

Associate Professor  
Graduate School of BASE  
Tokyo University of Agriculture and Technology  
Koganei, Tokyo, 184-8588 Japan

Phone & Fax: +81 42 388 7150  
Email: [ytnk@cc.tuat.ac.jp](mailto:ytnk@cc.tuat.ac.jp)  
Website: <http://tanaka.msp-lab.org/>

## Academic Backgrounds

- B.E. Electrical Engineering, Keio University, Mar. 2003.
- M.E. Electrical Engineering, Keio University, Mar. 2005.
- Ph.D. Electrical Engineering, Keio University, Sep. 2007.
- Postdoctoral Visiting Scholar at Video Processing Group (led by Prof. T. Q. Nguyen) in the Department of Electronics and Computer Engineering, University of California, San Diego, 2006 & 2007–2008.

## Employment

- Research Assistant, COE (Center of Excellence) Program at Keio University: Apr. 2005–Mar. 2007.
- Research Assistant, Global COE Program at Keio University: Sep. 2007–Nov. 2008.
- Research Fellow, Japan Society for the Promotion of Science (JSPS): Apr. 2007–Nov. 2008.
- Assistant Professor, Graduate School of Engineering, Utsunomiya University: Dec. 2008–Mar. 2012.
- Associate Professor, Institute of Engineering, Tokyo University of Agriculture and Technology: Apr. 2012–present.
- Researcher, PRESTO Program, Japan Science and Technology Agency: Dec. 2016–present.

## Awards

1. IEEE Signal Processing Society Japan Best Paper Award, IEEE SPS Tokyo Joint Chapter, Nov. 2016 (for the paper “*M*-channel oversampled graph filter banks,” published in *IEEE Transactions on Signal Processing*, co-authored with A. Sakiyama).
2. Best Paper Award, *APSIPA ASC 2015*, 2015 (for the paper “Subspace-constrained multilinear discriminant analysis for ERP-based brain computer interface classification,” co-authored with H. Higashi, T. Rutkowski, and T. Tanaka).
3. Ando Incentive Prize for the Study of Electronics, 2015 (from the Foundation of Ando Laboratory).
4. Best Paper Award, *APSIPA ASC 2014*, 2014 (for the paper “Smoothing of spatial filter by graph Fourier transform for EEG signals,” co-authored with H. Higashi and T. Tanaka).
5. TELECOM System Technology Award, 2011 (from the Telecommunication Advancement Foundation).
6. Yasujiro Niwa Outstanding Paper Award, 2010 (from Tokyo Denki University).

## Professional Activities

- Technical society membership and editorial work (present)
  - Associate Editor, *IEEE Transactions on Signal Processing*, 2016–.
  - Member, APSIPA Image, Video, and Multimedia (IVM) Technical Committee, 2015–.
  - Member of IEEE, APSIPA and IEICE.
- Technical society membership and editorial work (past)
  - Associate Editor, *IEICE Transactions on Fundamentals*, 2013–2016.
  - Special Session Organizer (with Prof. Gene Cheung), Graph Signal Processing for Advanced Imaging Problems, in *APSIPA ASC 2016*, 2016.
  - Co-Guest Associate Editor, Special Section on Special Section on Recent Advances in Image Sampling and Reconstruction, *IEICE Transactions on Fundamentals*, 2015.
  - Co-Guest Associate Editor, Special Section on Signal Processing for Sensing and Diagnosis, *IEICE Transactions on Fundamentals*, 2014.
  - Special Session Organizer (with Prof. Masahiro Okuda), Recent Advances in High Fidelity Digital Imaging, in *APSIPA ASC 2012*, 2012.
- Reviewer experience
  - APSIPA Transactions on Signal and Information Processing.
  - IEEE
    - \* Trans. on Circuits and Systems I: Regular Papers.
    - \* Trans. on Circuits and Systems II: Express Briefs.
    - \* Trans. on Circuits and Systems for Video Technology.
    - \* Trans. on Image Processing.
    - \* Trans. on Multimedia.
    - \* Trans. on Neural Networks and Learning Systems.
    - \* Trans. on Signal and Information Processing over Networks.
    - \* Trans. on Signal Processing (Appreciated Reviewer, 2008).
    - \* Signal Processing Letters.
  - IEICE
    - \* Trans. on Fundamentals.
    - \* Trans. on Communications.
    - \* Trans. on Information and Systems.
  - Circuits, Systems and Signal Processing.
  - Computational Intelligence and Neuroscience.
  - Image and Vision Computing.
  - Information Fusion.
  - Journal of Visual Communication and Image Representation.
  - Neural Processing Letters.
  - Signal Processing.
  - Signal Processing: Image Communication.
  - Optical Review.
  - Many international conferences; including ICASSP, ICIP, GlobalSIP, and ISCAS.
- Invited Speaker
  - (TBD), at *SITA 2017*, Niigata, Japan, Nov. 2017.

- Graph Signal Processing: Signal and Information Processing over Networks, at *IEICE Society Conference 2017*, Tokyo, Japan, Sep. 2017.
- Graph Signal Processing: Recent Progress and Applications, at *ITC-CSCC 2017*, Busan, Korea, Jul. 2017.
- Graph wavelets and filter banks: Designs in graph spectral domain, at *Graph Signal Processing Workshop 2017*, Pittsburgh, PA, May 2017.
- Graph Signal Processing: Towards Sparse Representations of “Big” Spatio-Temporal Data, at *28th RAMP Symposium*, Niigata, Japan, Oct. 2016.
- Fundamentals of Graph Signal Processing, at *Acoustical Society Japan 2016 Autumn Meeting*, Toyama, Japan, Sep. 2016.
- Graph Signal Processing: Fundamentals and Applications, at *SCI'16*, Kyoto, Japan, May, 2016.
- Graph Signal Processing: Extracting information from signals on networks, at *7th International Conference on Knowledge and Systems Engineering*, Ho Chi Minh City, Vietnam, Oct. 2015.
- Graph Signal Processing: Complex and Large-Scale Information Processing, at *28th Workshop on Circuits and Systems*, Hyogo, Japan, Aug. 2015.
- Signal Processing on Graphs: Recent Results, Challenges and Applications, at *PCSJ/IMPS 2014*, Shizuoka, Japan, Nov. 2014 (with Prof. Antonio Ortega).
- Recent Advances on Signal Processing on Graphs, at *28th Signal Processing Symposium*, Yamaguchi, Japan, Nov. 2013.

## Publications (Reverse Chronological Order)

### Journal Articles

1. K. Yamamoto, M. Onuki, and **Y. Tanaka**, “Non-blind deconvolution of point cloud attributes in graph spectral domain,” *IEICE Transactions on Fundamentals of Electronics, Communications and Computer Sciences*, accepted.
2. D. B. H. Tay, **Y. Tanaka**, and A. Sakiyama, “Almost tight spectral graph wavelets with polynomial filters,” *IEEE Journal of Selected Topics in Signal Processing*, accepted.
3. T. Suzuki, S. Kyochi, **Y. Tanaka**, and M. Ikehara, “Multiplierless lifting-based fast X transforms derived from fast Hartley transform factorization,” *Multidimensional Systems and Signal Processing*, accepted.
4. A. Hamamoto, M. Onuki, and **Y. Tanaka**, “Higher order feasible building blocks for lattice structure of multi-dimensional linear phase biorthogonal filter banks,” *Multidimensional Systems and Signal Processing*, vol. 28, no. 2, pp. 637–655, 2017.
5. D. B. H. Tay, **Y. Tanaka**, and A. Sakiyama, “Critically sampled graph filter banks with polynomial filters from regular domain filter banks,” *Signal Processing*, vol. 131, pp. 66–72, 2017.
6. H. Higashi, T. Rutkowski, T. Tanaka, and **Y. Tanaka**, “Multilinear discriminant analysis with subspace constraints for single-trial classification of event-related potentials,” *IEEE Journal of Selected Topics in Signal Processing*, vol. 10, no. 7, pp. 1295–1305, 2016.
7. A. Sakiyama, K. Watanabe, and **Y. Tanaka**, “Spectral graph wavelets and filter banks with low approximation error,” *IEEE Transactions on Signal and Information Processing over Networks*, vol. 2, no. 3, pp. 230–245, 2016.
8. S. Yagyu, A. Sakiyama, and **Y. Tanaka**, “Deforming pyramid: Multiscale image representation using pixel deformation and filters for non-equispaced signals,” *IEICE Transactions on Fundamentals of Electronics, Communications and Computer Sciences*, vol. E99-A, no.9, pp. 1646–1654, 2016.
9. M. Onuki, S. Ono, M. Yamagishi, and **Y. Tanaka**, “Graph signal denoising via trilateral filter on graph spectral domain,” *IEEE Transactions on Signal and Information Processing over Networks*, vol. 2, no. 2, pp. 137–148, 2016.
10. D. B. H. Tay, **Y. Tanaka**, and A. Sakiyama, “Near orthogonal oversampled graph filter banks,” *IEEE Signal Processing Letters*, vol. 23, no. 2, pp. 277–281, 2015.

11. A. Sakiyama and **Y. Tanaka**, "Oversampled graph Laplacian matrix for graph filter banks," *IEEE Transactions on Signal Processing*, vol. 62, no. 24, pp. 6425–6437, 2014.
12. M. Onuki and **Y. Tanaka**, "Design of optimized prefilters for time-domain lapped transforms with various downsampling factors," *IEICE Transactions on Fundamentals of Electronics, Communications and Computer Sciences*, vol. E97-A, no. 9, pp. 1907–1917, 2014.
13. **Y. Tanaka** and A. Sakiyama, " $M$ -channel oversampled graph filter banks," *IEEE Trans. on Signal Processing*, vol. 62, no. 14, pp. 3578–3590, 2014.
14. S. Kyochi and **Y. Tanaka**, "General factorization of conjugate-symmetric Hadamard transforms," *IEEE Trans. on Signal Processing*, vol. 62, no. 13, pp. 3379–3392, 2014.
15. V. H. Le, K. Shinoda, M. Hasegawa, S. Kato, and **Y. Tanaka**, "Modified high-order edge-directed interpolation for distributed video coding based on selective data pruning," *IEEE Transactions on Image Electronics and Visual Computing*, vol. 2, no. 1, pp. 26–36, 2014.
16. **Y. Tanaka**, T. Yoshida, M. Hasegawa, S. Kato, and M. Ikehara, "Rate-dependent seam carving and its application to content-aware image coding," *APSIPA Trans. on Signal and Information Processing*, vol. 2, no. e1, 15 pages, 2013.
17. **Y. Tanaka**, M. Hasegawa, and S. Kato, "Flexible combination of time-domain lapped transforms with various downsampling factors," *IEICE Trans. on Fundamentals*, vol. E95-A, no. 11, pp. 2049–2058, 2012.
18. **Y. Tanaka**, M. Hasegawa, S. Kato, M. Ikehara, and T. Q. Nguyen, "Adaptive directional wavelet transform based on directional prefiltering," *IEEE Trans. on Image Processing*, vol. 19, no. 4, pp. 934–945, 2010.
19. **Y. Tanaka**, M. Ikehara, and T. Q. Nguyen, "Higher-order feasible building blocks for lattice structure of oversampled linear-phase perfect reconstruction filter banks," *Signal Processing*, vol. 89, no. 9, pp. 1694–1703, 2009.
20. S. Kyochi, S. Higaki, **Y. Tanaka**, and M. Ikehara, "A bottom-up design approach of critically sampled contourlet transform for efficient image representation," *IEICE Trans. on Fundamentals*, vol. E92-A, no. 3, pp. 762–771, 2009.
21. **Y. Tanaka**, M. Ikehara, and T. Q. Nguyen, "Multiresolution image representation using combined 2-D and 1-D directional filter banks," *IEEE Trans. on Image Processing*, vol. 18, no. 2, pp. 269–280, 2009.
22. **Y. Tanaka**, M. Ikehara, and T. Q. Nguyen, "A lattice structure of biorthogonal linear-phase filter banks with higher order feasible building blocks," *IEEE Trans. on Circuits and Systems I: Regular Papers*, vol. 55, no. 8, pp. 2322–2331, 2008.
23. S. Iwamura, T. Suzuki, **Y. Tanaka**, and M. Ikehara, "Design of  $M$ -channel perfect reconstruction filter banks with IIR-FIR hybrid building blocks," *IEICE Trans. on Fundamentals*, vol. E90-A, no. 8, pp. 1636–1643, 2007.

## Proceedings of International Conferences

1. T. Nishikawa and **Y. Tanaka**, "Colors in multimodal data: Dominant line extraction inspired by computer vision techniques," *IGARSS 2017*, Fort Worth, TX, Jul. 2017, to be presented.
2. **Y. Tanaka** and A. Sakiyama, "A 'polyphase' structure of two-channel spectral graph wavelets and filter banks," *ICASSP 2017*, New Orleans, LA, Mar. 2016.
3. A. Sakiyama, **Y. Tanaka**, T. Tanaka, and A. Ortega, "Accelerated sensor position selection using graph localization operator," *ICASSP 2017*, New Orleans, LA, Mar. 2016.
4. M. Onuki, **Y. Tanaka**, and M. Okuda, "Improved eigenvalue shrinkage using weighted Chebyshev polynomial approximation," *ICASSP 2017*, New Orleans, LA, Mar. 2016.
5. T. Ichita, S. Kyochi, T. Suzuki, and **Y. Tanaka**, "Directional discrete cosine transforms arising from discrete cosine and sine transforms for directional block-wise image representation," *ICASSP 2017*, New Orleans, LA, Mar. 2016.

6. **Y. Tanaka**, S. Yagyū, A. Sakiyama, and M. Onuki, “Mesh-based image retargeting with spectral graph filtering,” *APSIPA ASC 2016*, Jeju, Korea, Dec. 2016.
7. H. Higashi, T. Rutkowski, T. Tanaka, and **Y. Tanaka**, “Smoothing of xDAWN spatial filters for robust extraction of event-related potentials,” *APSIPA ASC 2016*, Jeju, Korea, Dec. 2016 (**Invited Paper**).
8. A. Sakiyama and **Y. Tanaka**, “Construction of undersampled graph filter banks via row subset selection,” *GlobalSIP 2016*, Washington, D.C., Dec. 2016 (**Invited Paper**).
9. M. Onuki and **Y. Tanaka**, “ $\ell_1$ -regularized optimization of undersampled prefilters for image coding,” *PCS 2016*, Nuremberg, Germany, Dec. 2016.
10. S. Yagyū, A. Sakiyama, and **Y. Tanaka**, “Pyramidal image representation with deformation: Reformulation of domain transform and filter designs,” *ICIP 2016*, Phoenix, AZ, Sep. 2016.
11. K. Yamamoto, M. Onuki, and **Y. Tanaka**, “Deblurring of point cloud attributes in graph spectral domain,” *ICIP 2016*, Phoenix, AZ, Sep. 2016 (**Invited Paper**).
12. T. Tanaka, T. Uehara, and **Y. Tanaka**, “Dimensionality reduction of sample covariance matrices by graph Fourier transform for motor imagery brain-machine interface,” *SSP 2016*, Palma de Mallorca, Spain, Jun. 2016.
13. **Y. Tanaka**, “Design of graph spectral filters and graph signal restoration,” *Graph Signal Processing Workshop 2016*, Philadelphia, PA, May 2016.
14. A. Sakiyama, **Y. Tanaka**, T. Tanaka, and A. Ortega, “Efficient sensor position selection using graph signal sampling theory,” *Graph Signal Processing Workshop 2016*, Philadelphia, PA, May 2016.
15. K. Watanabe, A. Sakiyama, and **Y. Tanaka**, “Spectral graph filter banks with low approximation error,” *Graph Signal Processing Workshop 2016*, Philadelphia, PA, May 2016.
16. M. Onuki, S. Ono, K. Shirai, and **Y. Tanaka**, “Image colorization based on ADMM with fast singular value thresholding by Chebyshev polynomial approximation,” *ICASSP 2016*, Shanghai, China, Mar. 2016.
17. A. Sakiyama, **Y. Tanaka**, T. Tanaka, and A. Ortega, “Efficient sensor position selection using graph signal sampling theory,” *ICASSP 2016*, Shanghai, China, Mar. 2016.
18. H. Higashi, T. Rutkowski, T. Tanaka, and **Y. Tanaka**, “Subspace-constrained multilinear discriminant analysis for ERP-based brain computer interface classification,” *APSIPA ASC 2015*, Hong Kong, Dec. 2015 (**Invited Paper, Best Paper Award**).
19. K. Suwabe, M. Onuki, Y. Iizuka and **Y. Tanaka**, “Globalized BM3D using fast eigenvalue filtering,” *GlobalSIP 2015*, Orlando, FL, Dec. 2015, to be presented.
20. S. Yagyū, A. Sakiyama and **Y. Tanaka**, “Edge preserving multiscale image decomposition with customized domain transform filters,” *GlobalSIP 2015*, Orlando, FL, Dec. 2015, to be presented.
21. R. Morita, K. Shirai, and **Y. Tanaka**, “Performance analysis of retargeting pyramid and its applications,” *ICIP 2015*, Quebec City, Canada, Sep. 2015, to be presented.
22. M. Onuki, S. Ono, K. Shirai, and **Y. Tanaka**, “Non-local/local filters using fast eigenvalue filtering for image denoising,” *ICIP 2015*, Quebec City, Canada, Sep. 2015, to be presented.
23. A. Sakiyama and **Y. Tanaka**, “Oversampled bipartite graphs with controlled redundancy,” *EUSIPCO 2015*, Nice, France, Sep. 2015, to be presented (**Invited Paper**).
24. A. Sakiyama and **Y. Tanaka**, “Critically sampled graph wavelets converted from linear-phase biorthogonal wavelets,” *ICASSP 2015*, Brisbane, Australia, Apr. 2015.
25. H. Higashi, T. Tanaka, and **Y. Tanaka**, “Smoothing of spatial filter by graph Fourier transform for EEG signals,” *APSIPA ASC 2014*, Siem Reap, Cambodia, Dec. 2014 (**Invited Paper, Best Paper Award**).
26. E. Hosogai and **Y. Tanaka**, “Iterative edge-directed image upscaling with high directionality,” *APSIPA ASC 2014*, Siem Reap, Cambodia, Dec. 2014.

27. Y. Iizuka and **Y. Tanaka**, "Depth map denoising using collaborative graph wavelet shrinkage on connected image patches," *ICIP 2014*, Paris, France, Oct. 2014.
28. M. Onuki and **Y. Tanaka**, "Trilateral filter on graph spectral domain," *ICIP 2014*, Paris, France, Oct. 2014.
29. A. Sakiyama and **Y. Tanaka**, "Edge-aware image graph expansion methods for oversampled graph Laplacian matrix," *ICIP 2014*, Paris, France, Oct. 2014.
30. A. Hamamoto, M. Onuki, and **Y. Tanaka**, "Multidimensional linear-phase perfect reconstruction filter banks with higher order feasible building blocks," *ICIP 2014*, Paris, France, Oct. 2014.
31. A. Sakiyama and **Y. Tanaka**, "Oversampled graph Laplacian matrix for graph signals," *EUSIPCO 2014*, Lisbon, Portugal, Sep. 2014.
32. **Y. Tanaka** and A. Sakiyama, "*M*-channel oversampled perfect reconstruction filter banks for graph signals," *ICASSP 2014*, Florence, Italy, May 2014.
33. R. Morita, K. Shirai, and **Y. Tanaka**, "Retargeting pyramid using direct decimation," *ICASSP 2014*, Florence, Italy, May 2014.
34. S. Kyochi, T. Suzuki, and **Y. Tanaka**, "A two-dimensional non-separable implementation of dyadic-valued cosine-sine modulated filter banks for low computational complexity," *APSIPA Annual Summit and Conference 2013*, Kaohsiung, Taiwan, Oct. 2013 (**Invited Paper**).
35. K. Yamato, M. Hasegawa, K. Shinoda, S. Kato, and **Y. Tanaka**, "Image restoration using similar region search and digital watermark," *APSIPA Annual Summit and Conference 2013*, Kaohsiung, Taiwan, Oct. 2013 (**Invited Paper**).
36. M. Onuki and **Y. Tanaka**, "Design of optimized prefilters for time-domain lapped transforms with various downsampling factors," *ICIP 2013*, Melbourne, Australia, Sep. 2013.
37. H. V. Le, K. Shinoda, M. Hasegawa, S. Kato, and **Y. Tanaka**, "Selective data pruning based distributed video coding with modified high-order edge-directed interpolation," *ICIP 2013*, Melbourne, Australia, Sep. 2013.
38. **Y. Tanaka** and K. Shirai, "Scalable image representation using improved retargeting pyramid," *ICASSP 2013*, Vancouver, Canada, May 2013.
39. Y. Miyashita, M. Hasegawa, S. Kato, and **Y. Tanaka**, "Improved adaptive color embedding and recovery using DC level shifting," *ICASSP 2013*, Vancouver, Canada, May 2013.
40. T. Suzuki, S. Kyochi, **Y. Tanaka**, M. Ikehara, and H. Aso, "Multiplierless lifting based FFT via fast Hartley transform," *ICASSP 2013*, Vancouver, Canada, May 2013.
41. **Y. Tanaka** and K. Shirai, "Directional image decomposition using retargeting pyramid," *APSIPA ASC 2012*, Hollywood, CA, Dec. 2012 (**Invited Paper**).
42. Y. Miyashita, **Y. Tanaka**, M. Hasegawa, and S. Kato, "Adaptive color-to-gray mapping using directional transform," *ICIP 2012*, Orlando, FL, Sep. 2012.
43. T. Yoshida, **Y. Tanaka**, M. Hasegawa, S. Kato, and M. Ikehara, "Wavelet-based content-aware image coding with rate-dependent seam carving," *ICIP 2012*, Orlando, FL, Sep. 2012.
44. S. Kyochi, **Y. Tanaka**, and M. Ikehara, "On factorizations of conjugate symmetric Hadamard transform and its relationship with DCT," *ICASSP 2012*, Kyoto, Japan, Mar. 2012.
45. T. Suzuki, **Y. Tanaka**, M. Ikehara, H. Aso, "Multiplierless fast algorithm for DCT via fast Hartley transform," *ICASSP 2012*, Kyoto, Japan, Mar. 2012.
46. M. Hoshi, A. Yoshinari, **Y. Tanaka**, M. Hasegawa, and S. Kato, "Variable block size-based MCFI with fixed block size motion estimation," *45th Annual Asilomar Conference on Signals, Systems and Computers*, Pacific Grove, CA, Nov. 2011.
47. K. Takahashi, M. Hasegawa, **Y. Tanaka**, and S. Kato, "A structural similarity assessment for generating hybrid images," *45th Annual Asilomar Conference on Signals, Systems and Computers*, Pacific Grove, CA, Nov. 2011.

48. T. T. Phan, **Y. Tanaka**, M. Hasegawa, and S. Kato, "Mixed-resolution Wyner-Ziv video coding based on selective data pruning," *MMSP 2011*, Hangzhou, China, Oct. 2011.
49. **Y. Tanaka**, M. Hasegawa, and S. Kato, "Generalized selective data pruning for video sequence," *ICIP 2011*, Brussels, Belgium, Sep. 2011.
50. T. Miyachi, K. Takahashi, M. Hasegawa, **Y. Tanaka**, and S. Kato, "A Study on memorability and shoulder-surfing robustness of graphical password using DWT-based image blending," *SOUPS 2011*, Pittsburgh, PA, Jul. 2011.
51. M. Hasegawa, D. Someya, **Y. Tanaka**, and S. Kato, "A study on user authentication based on arm movements using acceleration sensor," *SOUPS 2011*, Pittsburgh, PA, Jul. 2011.
52. D. Azuma, **Y. Tanaka**, M. Hasegawa, and S. Kato, "SSIM based image quality assessment applicable to resized images," *ITC-CSCC 2011*, Gyeongju, Korea, Jun. 2011.
53. **Y. Tanaka**, M. Hasegawa, and S. Kato, "Seam carving with rate-dependent seam path information," *ICASSP 2011*, Prague, Czech Republic, May 2011.
54. **Y. Tanaka**, M. Hasegawa, and S. Kato, "Flexible combination of time-domain lapped transforms with various downsampling factors," *APSIPA ASC 2010*, Singapore, Dec. 2010 (Invited Paper).
55. H. Igarashi, **Y. Tanaka**, M. Hasegawa, and S. Kato, "VQ based data hiding method for still images by tree-structured links," *PCS 2010*, Nagoya, Japan, Dec. 2010.
56. T. Miyachi, K. Takahashi, M. Hasegawa, **Y. Tanaka**, and S. Kato, "A Study on memorability and shoulder-surfing robustness of graphical password using DWT-based image blending," *PCS 2010*, Nagoya, Japan, Dec. 2010.
57. **Y. Tanaka**, M. Hasegawa, and S. Kato, "Improved image concentration for artifact-free image dilution and its application to image coding," *ICIP 2010*, Hong Kong, Sept. 2010.
58. M. Hasegawa, D. Someya, **Y. Tanaka**, and S. Kato, "A study on user authentication based on arm movements," *ITC-CSCC 2010*, Pattaya, Thailand, Jul. 2010.
59. **Y. Tanaka**, M. Hasegawa, S. Kato, T. Suzuki, and M. Ikehara, "Direction scalability of adaptive directional wavelet transform: An approach using block-lifting based DCT and SPIHT," *ISCAS 2010*, Paris, France, May 2010 (Invited Paper).
60. **Y. Tanaka**, M. Hasegawa, and S. Kato, "Image coding using concentration and dilution based on seam carving with hierarchical search," *ICASSP 2010*, Dallas, TX, Mar. 2010.
61. **Y. Tanaka**, M. Hasegawa, and S. Kato, "Image concentration and dilution for video coding," *IIEEJ Image Electronics and Visual Computing Workshop 2010*, Nice, France, Mar. 2010.
62. M. Hasegawa, T. Miyachi, **Y. Tanaka**, and S. Kato, "A graphical password using discrete wavelet transform and its evaluation," *IIEEJ Image Electronics and Visual Computing Workshop 2010*, Nice, France, Mar. 2010.
63. N. Tanano, **Y. Tanaka**, M. Hasegawa, and S. Kato, "Depth order estimation from single still image using frequency characteristics of local regions," *IIEEJ Image Electronics and Visual Computing Workshop 2010*, Nice, France, Mar. 2010.
64. **Y. Tanaka**, M. Hasegawa, and S. Kato, "Texture image retrieval using adaptive directional wavelet transform," *ISPACS 2009*, Kanazawa, Japan, Dec. 2009 (Invited Paper).
65. M. Hasegawa, **Y. Tanaka**, and S. Kato, "A study on an image synthesis method for graphical passwords," *ISPACS 2009*, Kanazawa, Japan, Dec. 2009 (Invited Paper).
66. **Y. Tanaka**, M. Hasegawa, S. Kato, M. Ikehara, and T. Q. Nguyen, "Adaptive directional wavelet transform using pre-directional filtering," *ICIP 2009*, Cairo, Egypt, Nov. 2009.
67. **Y. Tanaka**, M. Ikehara, and T. Q. Nguyen, "An adaptive extension of combined 2D and 1D-directional filter banks," *ISCAS 2009*, Taipei, Taiwan, May 2009.

68. **Y. Tanaka**, M. Hasegawa, and S. Kato, "Highpass-filtering based adaptive directional wavelet transform," *PCS 2009*, Chicago, IL, May 2009.
69. **Y. Tanaka**, M. Ikehara, and T. Q. Nguyen, "A new combination of 1D and 2D filter banks for effective multiresolution image representation," *ICIP 2008*, San Diego, CA, Oct. 2008.
70. S. Higaki, S. Kyochi, **Y. Tanaka**, and M. Ikehara, "A novel design of critically sampled contourlet transform and its application to image coding," *ICIP 2008*, San Diego, CA, Oct. 2008.
71. **Y. Tanaka**, M. Ikehara, and T. Q. Nguyen, "Oversampled linear-phase perfect reconstruction filter banks with higher-order feasible building blocks: structure and parameterization," *ISCAS 2008*, Seattle, WA, May 2008.
72. J. Aoyama, **Y. Tanaka**, and M. Ikehara, "A non-expansive convolution in image coding with smooth extension matrices for NLPPUFBs," *2007 International Workshop on Smart Info-Media Systems in Bangkok*, Bangkok, Thailand, Nov. 2007.
73. T. Yoshida, **Y. Tanaka**, and M. Ikehara, "A generalized lapped transform with unequal length filters based on first-order linear-phase filter banks," *41st Asilomar Conference on Signals, Systems and Computers*, Pacific Grove, CA, Nov. 2007.
74. **Y. Tanaka**, M. Ikehara, and T. Q. Nguyen, "A lattice structure of biorthogonal linear-phase filter banks with higher-order feasible building blocks," *EUSIPCO 2007*, Poznan, Poland, Sept. 2007.
75. **Y. Tanaka**, M. Ikehara, and T. Q. Nguyen, "A simplified lattice structure of first-order linear-phase filter banks," *EUSIPCO 2007*, Poznan, Poland, Sept. 2007.
76. S. Kyochi, **Y. Tanaka**, and M. Ikehara, "A novel image coding scheme by using two-channel complex-valued filter banks," *EUSIPCO 2007*, Poznan, Poland, Sept. 2007.
77. **Y. Tanaka**, M. Ikehara, and T. Q. Nguyen, "Unequal length first-order linear-phase filter banks for efficient image coding," *ICIP 2007*, San Antonio, TX, Sept. 2007.
78. S. Iwamura, **Y. Tanaka**, and M. Ikehara, "An efficient lifting structure of biorthogonal filter banks for lossless image coding," *ICIP 2007*, San Antonio, TX, Sept. 2007.
79. T. Suzuki, **Y. Tanaka**, and M. Ikehara, "Lifting-based paraunitary filterbanks for lossy/lossless image coding," *EUSIPCO 2006*, Florence, Italy, Sept. 2006.
80. S. Iwamura, T. Suzuki, **Y. Tanaka**, and M. Ikehara, "Design of M-channel perfect reconstruction filterbanks with IIR-FIR hybrid building blocks," *EUSIPCO 2006*, Florence, Italy, Sept., 2006.
81. S. Kyochi, **Y. Tanaka**, and M. Ikehara, "Theory and design of two-channel complex linear-phase pseudo-orthogonal filterbanks," *ICASSP 2006*, Toulouse, France, May, 2006.
82. **Y. Tanaka**, A. Ochi, and M. Ikehara, "A non-expansive convolution for nonlinear-phase paraunitary filter banks and its application to image coding," *39th Asilomar Conference on Signals, Systems and Computers*, Pacific Grove, CA, Oct., 2005.
83. **Y. Tanaka**, A. Ochi, and M. Ikehara, "Design of unequal-length linear-phase filter banks without redundancy," *EUSIPCO 2005*, Antalya, Turkey, Sept., 2005.