

## Publications of Mariusz Bajger

- [1] D. Ben-Tovim, M. Bajger, V. D. Bui, and S. Qin. Network Graph Analysis of Hospital and Health Services Functional Structures. In B. Li, L. Yue, J. Jiang, W. Chen, X. Li, G. Long, F. Fang, and H. Yu, editors, *Proceedings of Advanced Data Mining and Applications, Part 1: 17th International Conference, ADMA 2021*, volume 13087 LNAI of *Lecture Notes in Computer Science*, pages 33–44, Sydney, Australia, 2022. Switzerland: Springer Science and Business Media Deutschland GmbH.
- [2] M. Howes, M. Bajger, G. N. Lee, F. Bucci, and S. Martelli. Texture enhanced Statistical Region Merging with application to automatic knee bones segmentation from CT. In J. Zhou, Salvado O., F. Sohel, P. Borges, and S. Wang, editors, *IEEE International Conference on Digital Image Computing: Techniques and Applications (DICTA)*, Gold Coast, Australia, 2021. Institute of Electrical and Electronics Engineers Inc., New York, USA.
- [3] M. Bajger, M. S. To, G. Lee, A. Wells, C. Chong, M. Agzarian, and S. Poonnoose. Lumbar Spine CT synthesis from MR images using CycleGAN: A preliminary study. In J. Zhou, Salvado O., F. Sohel, P. Borges, and S. Wang, editors, *IEEE International Conference on Digital Image Computing: Techniques and Applications (DICTA)*, Gold Coast, Australia, 2021. Institute of Electrical and Electronics Engineers Inc., New York, USA.
- [4] S. Sajeev, M. Bajger, G. N. Lee, C. Muramatsu, and H. Fujita. Mammographic mass identification in dense breasts using multi-scale analysis of structured micro-patterns. In H. Bosmans, N. Marshall, and C. Van Ongeval, editors, *15th International Workshop on Breast Imaging, IWBI 2020*, volume 11513 of *Proceedings of SPIE*, Washington, USA, 2020. SPIE.
- [5] M. Bajger, J. Brzdek, E. El-Hady, and E. Jablonska. On the continuous cancellative semigroups on a real interval and on a circle and some symmetry issues. *Symmetry*, 12(1974), 2020.
- [6] Shelda Sajeev, Mariusz Bajger, and Gobert Lee. Graph modeling for identifying breast tumor located in dense background of a mammogram. In Daoqiang Zhang, Luping Zhou, Biao Jie, and Mingxia Liu, editors, *Graph Learning in Medical Imaging*, pages 147–154, Cham, 2019. Springer International Publishing.
- [7] Ratna Saha, Mariusz Bajger, and Gobert Lee. SRM superpixel merging framework for precise segmentation of cervical nucleus. In *2019 Digital Image Computing, 2019 Digital Image Computing: Techniques and Applications, DICTA 2019*. Institute of Electrical and Electronics Engineers Inc., December 2019.
- [8] R. Saha, M. Bajger, and G. Lee. Prior guided segmentation and nuclei feature based abnormality detection in cervical cells. In *2019 IEEE 19th International Conference on Bioinformatics and Bioengineering (BIBE)*, pages 742–746, 2019.
- [9] N. Jegou, F. Desai, G. Lee, M. Bajger, O. Acosta, J. Leseur, R. De Crevoisier, and M. Caon. Organs-at-Risk Contouring on Head CT for RT Planning Using 3D Slicer–

- a preliminary study. In *2019 IEEE 19th International Conference on Bioinformatics and Bioengineering (BIBE)*, pages 503–506, 2019.
- [10] S. Shelda, M. Bajger, and G. N. Lee. Superpixel texture analysis for classification of breast masses in dense background. *IET Computer Vision*, 12(6):779–786, 2018.
- [11] S. Sajeev, M. Bajger, and G. N. Lee. Superpixel pattern graphs for identifying breast mass ROIs in dense background: a preliminary study. In Elizabeth A. Krupinski, editor, *Breast Imaging: 14th International Workshop (IWBI 2018)*, Atlanta, Georgia, United States, 2018. SPIE.
- [12] R. Saha, M. Bajger, and G. N. Lee. Segmentation of cervical nuclei using SLIC and pairwise regional contrast. In *40th Annual International Conference of the IEEE Engineering in Medicine and Biology Society (EMBC)*, pages 3422–3425, Honolulu, HI, USA, 2018. IEEE.
- [13] R. Saha, M. Bajger, and G. N. Lee. Circular shape prior in efficient graph based image segmentation to segment nucleus. In *IEEE International Conference on Digital Image Computing: Techniques and Applications (DICTA)*, Canberra, Australia, 2018. IEEE.
- [14] G. N. Lee, M. Bajger, and K. Clark. Deep learning and color variability in breast cancer histopathological images: a preliminary study. In Elizabeth A. Krupinski, editor, *14th International Workshop on Breast Imaging (IWBI 2018)*, Atlanta, Georgia, United States, 2018. SPIE.
- [15] G. N. Lee and M. Bajger. Machine Learning for Cancer Detection in Dense Breast. In *Breast Screen Australia Conference 2018*, Adelaide, South Australia, April 2018.
- [16] M. Bajger, G. N. Lee, and M. Caon. Paediatric Liver Segmentation for Low-Contrast CT Images. In Andrew Melbourne et al., editor, *Data Driven Treatment Response Assessment and Preterm, Perinatal, and Paediatric Image Analysis (PIPPI 2018, DATRA 2018)*, volume 11076 of *Lecture Notes in Computer Science*, pages 169–178, Granada, Spain, 2018. Springer-Nature.
- [17] S. Sajeev, M. Bajger, and G. N. Lee. Structured Micro-pattern based LBP Features for Classification of Masses in Dense Breasts. In *IEEE International Conference on Digital Image Computing: Techniques and Applications (DICTA)*, pages 62–69, Sydney, Australia, 2017. IEEE.
- [18] R. Saha, M. Bajger, and G. N. Lee. Circular shape constrained fuzzy clustering (CiscFC) for nucleus segmentation in Pap smear images. *Computers in Biology and Medicine*, 85:13–23, 2017.
- [19] J. Sedlar, M. Bajger, M. Caon, and G. N. Lee. Model-guided segmentation of liver in CT and PET-CT images of child patients based on statistical region merging. In *IEEE International Conference on Digital Image Computing: Techniques and Applications (DICTA)*, pages 156–163, Gold Coast, Australia, 2016. IEEE.

- [20] S. Sajeev, M. Bajger, and G. N. Lee. Improving Breast Mass Segmentation in Local Dense Background: an Entropy based Optimization of Statistical Region Merging Method. In *Breast Imaging: 13th International Workshop (IWDM)*, volume 9699 of *LNCS*, pages 635–644, Malmo, Sweden, 2016. Springer International Publishing.
- [21] R. Saha, M. Bajger, and G. N. Lee. Spatial Shape Constrained Fuzzy C-Means (FCM) Clustering for Nucleus Segmentation in Pap Smear Images. In *IEEE International Conference on Digital Image Computing: Techniques and Applications (DICTA)*, pages 320–327, Gold Coast, Australia, 2016. IEEE.
- [22] G. Lee, M. Bajger, M. Caon, G. Bibbo, and Ng. M. Superpixels for the Visible Human Project and human anatomical voxel model construction. In *Computer Assisted Radiology and Surgery: Proceedings of the 30th International Congress and Exhibition*, volume 11 of *Int J Comput Assist Radiol Surg*, pages 219–220, Heidelberg, Germany, 2016. Springer. Suppl 1.
- [23] S. Sajeev, M. Bajger, and G. N. Lee. Segmentation of breast masses in local dense background using Adaptive Clip Limit-CLAHE. In *Proceedings of DICTA 2015: IEEE International Conference on Digital Image Computing: Techniques and Applications*, pages 669–676, Adelaide, Australia, 2015. IEEE.
- [24] F. Ma, L. Yu, M. Bajger, and M. J. Bottema. Mammogram mass classification with temporal features and multiple kernel learning. In *Proceedings of DICTA 2015: IEEE International Conference on Digital Image Computing: Techniques and Applications*, pages 505–511, Adelaide, Australia, 2015.
- [25] F. Ma, L. Yu, M. Bajger, and M. J. Bottema. Incorporation of fuzzy spatial relation in temporal mammogram registration. *Fuzzy Sets and Systems*, 279:87–100, 2015.
- [26] G. N. Lee, M. Bajger, and M. Caon. FBIseg tool for the Visible Human Project. In *Computer Assisted Radiology and Surgery: Proceedings of the 28th International Congress and Exhibition*, volume 9 of *Int J Comput Assist Radiol Surg*, pages 40–41, Fukuoka, Japan, June 2014. Springer. Supplement 1.
- [27] G. N. Lee and M. Bajger. Statistical temporal changes for breast cancer detection: a preliminary study. In H. Fujita, T. Hara, and C. Muramatsu, editors, *Breast Imaging: 12th International Workshop IWDM 2014*, volume 8539 of *Lecture Notes in Computer Science*, pages 635–642. Springer, 2014.
- [28] G. N. Lee and M. Bajger. Application of statistical inference and medical images. In *Proceedings of the ANZIAM Conference*, Rotorua, New Zealand, February 2014.
- [29] M. Caon, J. Sedlar, M. Bajger, and G. N. Lee. Computer-assisted segmentation of CT images by statistical region merging for the production of voxel models of anatomy for CT dosimetry. *Australasian Physical and Engineering Sciences in Medicine*, 37:393–403, 2014.
- [30] G. N. Lee and M. Bajger. Statistical inference and medical image segmentation. In *Proceedings of the 49th ANZIAM Conference*, Newcastle, Australia, February 2013.

- [31] M. Bajger, G. N. Lee, and M. Caon. 3D segmentation for multi-organs in CT images. *Electronic Letters on Computer Vision and Image Analysis*, 12(2):13–27, 2013.
- [32] G. N. Lee, M. Bajger, and M. Caon. Multi-organ segmentation of CT images using statistical region merging. In C. Helmich, M. H. Hamza, and D. Simsik, editors, *Proceedings of the 9th IASTED International Conference on Biomedical Engineering BioMed 2012*, pages 199–206, Innsbruck, Austria, February 2012.
- [33] M. J. Bottema, M. Bajger, Ma F., and S. Williams. Mathematics in medical image analysis: a focus on mammography. In *Proceedings of the 6th SEAMS-GMU International Conference on Mathematics and Its Applications*, pages 51–64, 2012.
- [34] M. Bajger, Lee G. N., and M. Caon. Full-body CT segmentation using 3D extension of two graph-based methods: a feasibility study. In *Proceedings of 9th IASTED International Conference on Signal Processing, Pattern Recognition and Applications (SPPRA 2012)*, pages 43–50, Crete, Greece, June 2012.
- [35] W. Sidik, M. Bottema, and M. Bajger. A cross-species avian-human influenza epidemic model: transport related coinfection. In *Proceedings of ICIAM Conference*, Vancouver, Canada, July 18-22, 2011.
- [36] W. Sidik, M. Bottema, and M. Bajger. A cross-species avian-human influenza epidemic model: effects of some control strategies. In *Proceedings of ANZIAM Conference*, Adelaide, Australia, January 30 - February 3, 2011.
- [37] W. Sidik, M. Bottema, and M. Bajger. A cross-species avian-human influenza epidemic model: economic trade-off on the disease spread and controls. In *Proceedings of AICST Conference*, Jakarta, Indonesia, July 26-27, 2011.
- [38] G. Lee, M. Bajger, and Caon M. Canat: An algorithm for the automatic segmentation of anatomy of medical images. In *Proceedings of EPSM-ABEC*, Darwin, Australia, August 14-18, 2011.
- [39] W. Sidik, M. Bottema, and M. Bajger. A cross-species avian-human influenza epidemic model: disease spread. In *Proceedings of Australian Mathematical Society Conference*, Brisbane, Australia, September 27-30, 2010.
- [40] Fei Ma, Mariusz Bajger, Simon Williams, and Murk J. Bottema. Improved detection of cancer in screening mammograms by temporal comparison. In Joan Martí, Arnau Oliver, Jordi Freixenet, and Robert Marti, editors, *Digital Mammography (IWDM 2010)*, volume 6136 of *Lecture Notes in Computer Science*, pages 752–759. Springer, 2010.
- [41] M Bajger, F. Ma, Williams S., and M. J. Bottema. Mammographic mass detection with statistical region merging. In *Proceedings of DICTA 2010: Digital Image Computing: Techniques and Applications*, pages 27–32, Sydney, Australia, 2010.
- [42] F. Ma and M. J. Bottema. Automatic mass segmentation based on adaptive pyramid and sublevel set analysis. In *Proceedings of DICTA '09: Digital Image Computing: Techniques and Applications*, pages 236–241, Melbourne, Australia, Dec 1-3, 2009.

- [43] M. Bajger, F. Ma, and M. J. Bottema. Automatic tuning of mst segmentation of mammograms for registration and mass detection algorithms. In *Proceedings of DICTA '09: Digital Image Computing: Techniques and Applications*, pages 400–407, Melbourne, Australia, Dec 1-3, 2009.
- [44] H. Susukida, F. Ma, and M. Bajger. Automatic tuning of a graph-based image segmentation method for digital mammography applications. In *Proc. 5th IEEE International Symposium on Biomedical Imaging: From Nano to Macro (ISBI08)*, pages 89–92, Paris, France, May 14-17, 2008.
- [45] F. Ma, M. Bajger, and M. J. Bottema. Temporal analysis of mammograms based on graph matching. In *Proc. 9th International Workshop on Digital Mammography (IWDM08)*, volume 5116 of *LNCS*, pages 158–165, Tucson, AZ, USA, July 20-23, 2008. Springer.
- [46] F. Ma, M. Bajger, and M. J. Bottema. A graph matching based automatic regional registration method for sequential mammogram analysis. In M. L. Geiger and N. Karssemeijer, editors, *Proceedings of SPIE Medical Imaging 2008: Computer-Aided Diagnosis*, volume 6915, San Diego, USA, Feb 2008.
- [47] M. Bajger and A. R. Omondi. Low-error, high-speed approximation of the sigmoid function for large FPGA implementations. *Journal of Signal Processing Systems*, 52:137–151, 2008.
- [48] F. Ma, M. Bajger, J. P. Slavotinek, and M. J. Bottema. Two graph theory based image segmentation methods for identifying the pectoral muscle in mammograms. *Pattern Recognition*, 40:2592–2602, 2007.
- [49] F. Ma, M. Bajger, and M. J. Bottema. Robustness of two methods for segmenting salient features in screening mammograms. In M. J. Bottema, editor, *Proceedings of the 9th Conference on Digital Image Computing: Techniques and Applications*, pages 112–117, Adelaide, Australia, Dec 2007. IEEE.
- [50] N. Goel, M. Bajger, and M. Tomczak. Civilizations of the world, a new electronic time atlas concept. In L. Gomes Chova, D. Marti Belenguer, and L. Candel Torres, editors, *Proceedings of International Technology, Education and Development Conference*, Valencia, Spain, 2007.
- [51] A. R. Omondi, J. C. Rajapakse, and M. Bajger. FPGA neurocomputers. In A. R. Omondi and J. C. Rajapakse, editors, *FPGA Implementations of Neural Networks*, pages 1–43. Springer, 2006.
- [52] F. Ma, M. Bajger, J. P. Slavotinek, and M. J. Bottema. Validation of graph theoretic segmentation of the pectoral muscle. In S. M. Astley, C. Rose, M. Brady, and R. Zwiggelaar, editors, *Digital Mammography, IWDM 2006, 8th International Workshop*, LNCS, pages 642 – 649, Manchester, UK, June 2006. Springer.
- [53] M. Bajger and A. R. Omondi. Implementations of Square-Root and Exponential Functions for large FPGAs. In C. Jesshope and C. Egan, editors, *The Eleventh Asia-Pacific Computer Systems Architecture Conference*, volume 4186 of *LNCS*, pages 6–23, Shanghai, China, Sep 6-8, 2006.

- [54] F. Ma, M. Bajger, and M. J. Bottema. Extracting the pectoral muscle in screening mammograms using a graph pyramid. In B. C. Lovell and A. J. Maeder, editors, *APRS Workshop on Digital Image Computing*, Griffith University, Brisbane, Australia, 2005. The University of Queensland.
- [55] M. Bajger, F. Ma, and M. J. Bottema. Minimum spanning trees and active contours for identification of the pectoral muscle in screening mammograms. In B. C. Lovell, A. J. Maeder, T. Caelli, and S. Oursellin, editors, *Digital Image Computing Techniques and Applications*, pages 323–329, Cairns, Australia, 2005. IEEE Computer Society Conference Publishing Service.
- [56] M. Bajger. On the composite Pexider equation modulo a subgroup. *Publicationes Math. Debrecen*, 64(1-2):39–61, 2004. (3<sup>rd</sup> Prize in M. Kuczma’s annual competition for best paper on Functional Equations written by a Polish author in 2004, Silesian University, Katowice, Poland).
- [57] M. Tomczak and M. Bajger. Using digital course delivery to assist developing countries: an example from a science course. In *Proceedings of WebCT Asia-Pacific Conference*, Adelaide, Australia, April 9-11, 2001.
- [58] M. Bajger. On the structure of some flows on the unit circle. *Aequationes Mathematicae*, 55:106–122, 1998.
- [59] M. Bajger. On generalized Cauchy and Pexider functional equations over a field. *Glasnik Mat*, 33(53):239–249, 1998.
- [60] M. Bajger and M. C. Zdun. On rational flows of continuous functions. In *Proceedings of European Conference on Iteration Theory 1992*, pages 265–276, Batschuns, Austria, 1997. World Scientific.
- [61] M. Bajger. Iterative Pexider equation modulo a subset. *Aequationes Mathematicae*, 53:155–161, 1997.
- [62] M. Bajger. A generalized Pexider equation. *Acta Math. Hungarica*, 75:43–54, 1997.
- [63] M. Bajger. On a generalized Pexider equation connected with the iteration theory. *Publicationes Math. Debrecen*, 48:77–88, 1996.
- [64] M. Bajger. Increasing solution of the translation equation. *Opuscula Math.*, 15:33–37, 1995.
- [65] M. Bajger. Iterative Pexider equation. *Publicationes Math. Debrecen*, 44:67–77, 1994.