

M. Emre Celebi

Professor and Chair

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Education

- 2003–2006 **Ph.D. in Computer Science and Engineering**, University of Texas, Arlington, TX
Dissertation Title: *Development of Algorithms for Dermoscopy Image Analysis*
- 2002–2003 **M.Sc. in Computer Science and Engineering**, University of Texas, Arlington, TX
Thesis Title: *Content Based Image Retrieval Incorporating Models of Human Perception*
- 1998–2002 **B.Sc. in Computer Engineering**, Middle East Technical University, Ankara, Turkey

Appointments

- 9/16–Present **Professor and Chair**, Department of Computer Science and Engineering, University of Central Arkansas, Conway, AR
- 8/11–5/16 **Associate Professor**, Department of Computer Science, Louisiana State University, Shreveport, LA
- 8/07–8/11 **Assistant Professor**, Department of Computer Science, Louisiana State University, Shreveport, LA
- 1/07–5/07 **Visiting Assistant Professor**, Department of Computer Science and Engineering, University of Bridgeport, Bridgeport, CT
- 8/06–1/07 **Post-Doctoral Fellow**, Department of Electrical and Computer Engineering, University of Missouri, Rolla, MO
- 8/02–8/06 **Teaching Associate**, Department of Computer Science and Engineering, University of Texas, Arlington, TX

Research Interests

Artificial Intelligence, Machine Learning, Computer Vision

Grants (PI: \$650,245, Co-PI: \$45,795)

- Title: Data Analytics that are Robust and Trusted (DART): From Smart Curation to Socially Aware Decision Making
Sponsor: National Science Foundation (NSF)
Program: EPSCoR Research Infrastructure
Role: Thrust Colead
Dates: 7/20 – 6/25
Amount: \$24,000,000
- Title: Acquisition of a High-Performance Computing System for University of Central Arkansas
Sponsor: National Science Foundation (NSF)
Program: Major Research Instrumentation
Role: Principal Investigator
Dates: 10/17 – 09/20
Amount: \$105,084

- Title: Novel Enhancements to the k -Means Clustering Algorithm
 Sponsor: National Science Foundation (NSF)
 Program: Robust Intelligence
 Role: Principal Investigator
 Dates: 07/11 – 07/14
 Amount: \$155,895
- Title: Acquisition of High Performance Computational Infrastructure for Image Analysis, Visualization, and Game Development
 Sponsor: National Science Foundation (NSF)
 Program: Major Research Instrumentation
 Role: Principal Investigator
 Dates: 05/10 – 04/12
 Amount: \$154,901
- Title: Fast, Accurate, and Robust Methods for Lesion Border Detection in Dermoscopy Images
 Sponsor: National Natural Science Foundation of China (NSFC)
 Program: Research Fellowship for International Young Scientists
 Role: Principal Investigator
 Dates: 01/11 – 12/11
 Amount: 200,000 CNY
- Title: Enhancing Computer Science Education Using CGI Technology
 Sponsor: Louisiana Board of Regents
 Program: Traditional Enhancement
 Role: Principal Investigator
 Dates: 06/09 – 06/10
 Amount: \$90,300
- Title: Advanced 3D Computer-Based Modeling and Prototyping Enhancement
 Sponsor: Louisiana Board of Regents
 Program: Traditional Enhancement
 Role: Co-Principal Investigator
 Dates: 06/09 – 06/10
 Amount: \$45,795
- Title: Development of Image Analysis Techniques for the Early Diagnosis of Melanoma
 Sponsor: Louisiana Board of Regents
 Program: Research Competitiveness
 Role: Principal Investigator
 Dates: 06/08 – 06/11
 Amount: \$110,619

Publications (Total: 193 – Books: 10, Journals: 104, Conference Proceedings: 75, Unpublished: 4)

Books

- [1] M. Kawulok, J. Kawulok, B. Smolka, and M. E. Celebi, eds., *Super-Resolution for Remote Sensing*. Springer, 2024. ISBN: 9783031681059.
- [2] M. E. Celebi, M. S. Salekin, H. Kim, and S. Albarqouni, eds., *Medical Image Computing and Computer Assisted Intervention – MICCAI 2023 Workshops*. Springer, 2023. ISBN: 9783031474002.
- [3] M. Kawulok, M. E. Celebi, and B. Smolka, eds., *Advances in Face Detection and Facial Image Analysis*. Springer, 2016. ISBN: 9783319259567.
- [4] M. E. Celebi and K. Aydin, eds., *Unsupervised Learning Algorithms*. Springer, 2015. ISBN: 9783319242095.

- [5] M. E. Celebi, M. Lecca, and B. Smolka, eds., *Color Image and Video Enhancement*. Springer, 2015. ISBN: 9783319093628.
- [6] M. E. Celebi, T. Mendonça, and J. S. Marques, eds., *Dermoscopy Image Analysis*. CRC Press, 2015. ISBN: 9781482253269.
- [7] M. E. Celebi, ed., *Partitional Clustering Algorithms*. Springer, 2014. ISBN: 9783319092584.
- [8] M. E. Celebi and B. Smolka, eds., *Advances in Low-Level Color Image Processing*. Springer, 2014. ISBN: 9789400775831.
- [9] J. Scharcanski and M. E. Celebi, eds., *Computer Vision Techniques for the Diagnosis of Skin Cancer*. Springer, 2013. ISBN: 9783642396076.
- [10] M. E. Celebi and G. Schaefer, eds., *Color Medical Image Analysis*. Springer, 2012. ISBN: 9789400753884.

Journal Articles/Book Chapters

- [1] H. Bounds, M. E. Celebi, and J. Maxwell, “Color Quantization Using an Accelerated Jancey k -Means Clustering Algorithm,” *Journal of Electronic Imaging*, vol. 33, no. 5, p. 053052, 2024.
- [2] Y. Zhu, A. Bouridane, M. E. Celebi, D. Konar, P. Angelov, Q. Ni, and R. Jiang, “Quantum Face Recognition with Multi-Gate Quantum Convolutional Neural Network,” *IEEE Transactions on Artificial Intelligence*, vol. 5, no. 12, pp. 6330–6341, 2024.
- [3] M. L. Pérez-Delgado and M. E. Celebi, “A Comparative Study of Color Quantization Methods Using Various Image Quality Assessment Indices,” *Multimedia Systems*, vol. 30, p. 40, 2024.
- [4] A. A. Shah, A. S. A. Shaker, S. Jabbar, Q. Abbas, T. S. Al-Balawi, and M. E. Celebi, “An Ensemble-Based Deep Learning Model for Detection of Mutation Causing Cutaneous Melanoma,” *Scientific Reports*, vol. 13, p. 22251, 2023.
- [5] Z. Mirikharaji, K. Abhishek, A. Bissoto, C. Barata, S. Avila, E. Valle, M. E. Celebi, and G. Hamarneh, “A Survey on Deep Learning for Skin Lesion Segmentation,” *Medical Image Analysis*, vol. 88, p. 102863, 2023.
- [6] M. E. Celebi and M. L. Pérez-Delgado, “CQ100: A High-Quality Image Dataset for Color Quantization Research,” *Journal of Electronic Imaging*, vol. 32, no. 3, p. 033019, 2023.
- [7] M. E. Celebi, “Forty Years of Color Quantization: A Modern, Algorithmic Survey,” *Artificial Intelligence Review*, vol. 56, no. 12, pp. 13953–14034, 2023.
- [8] M. E. Celebi, C. Barata, A. Halpern, P. Tschandl, M. Combalia, and Y. Liu, “Guest Editorial: Skin Image Analysis in the Age of Deep Learning,” *IEEE Journal of Biomedical and Health Informatics*, vol. 27, no. 1, pp. 143–144, 2023.
- [9] L. Bi, M. E. Celebi, H. Iyatomi, P. Fernandez-Penas, and J. Kim, “Image Analysis in Advanced Skin Imaging Technology,” *Computer Methods and Programs in Biomedicine*, vol. 238, p. 107599, 2023.
- [10] A. D. Abernathy and M. E. Celebi, “The Incremental Online k -Means Clustering Algorithm and Its Application to Color Quantization,” *Expert Systems with Applications*, vol. 207, p. 117927, 2022.
- [11] R. Daneshjou, C. Barata, B. Betz-Stablein, M. E. Celebi, N. Codella, M. Combalia, P. Guitera, D. Gutman, A. Halpern, B. Helba, H. Kittler, K. Kose, K. Liopyris, J. Malvey, H. S. Seog, H. P. Soyer, E. R. Tkaczyk, P. Tschandl, and V. Rotemberg, “Evaluation of Image-Based AI Artificial Intelligence Reports in Dermatology: CLEAR Derm Consensus Guidelines from the International

- Skin Imaging Collaboration Artificial Intelligence Working Group,” *JAMA Dermatology*, vol. 158, no. 1, pp. 90–96, 2022.
- [12] R. Jiang, P. Chazot, N. Pavese, D. Crookes, A. Bouridane, and M. E. Celebi, “Private Facial Prediagnosis as an Edge Service for Parkinson’s DBS Treatment Valuation,” *IEEE Journal of Biomedical and Health Informatics*, vol. 26, no. 6, pp. 2703–2713, 2022.
- [13] S. Wang, Z. Dong, Z. Zhang, Y. Huo, M. E. Celebi, and C. Shan, “Guest Editorial: Emerging Challenges for Deep Learning,” *IEEE Journal of Biomedical and Health Informatics*, vol. 26, no. 11, pp. 5287–5288, 2022.
- [14] S. Wang, M. E. Celebi, Y. D. Zhang, X. Yu, S. Lu, X. Yao, Q. Zhou, M. Martinez-Garcia, Y. Tian, J. M. Gorriz, and I. Tyukin, “Advances in Data Preprocessing for Biomedical Data Fusion: An Overview of the Methods, Challenges, and Prospects,” *Information Fusion*, vol. 76, pp. 376–421, 2021.
- [15] R. Rastghalam, H. Danyali, M. S. Helfroush, M. E. Celebi, and M. Mokhtari, “Skin Melanoma Detection in Microscopic Images Using HMM-Based Asymmetric Analysis and Expectation Maximization,” *IEEE Journal of Biomedical and Health Informatics*, vol. 25, no. 9, pp. 3486–3497, 2021.
- [16] P. Shamsolmoali, S. Garcia, H. Zhou, and M. E. Celebi, “Advances in Domain Adaptation for Computer Vision,” *Image and Vision Computing*, vol. 114, p. 104268, 2021.
- [17] P. Shamsolmoali, M. Zareapoor, E. Granger, H. Zhou, R. Wang, M. E. Celebi, and J. Yang, “Image Synthesis with Adversarial Networks: A Comprehensive Survey and Case Studies,” *Information Fusion*, vol. 72, pp. 126–146, 2021.
- [18] C. Barata, M. E. Celebi, and J. S. Marques, “Explainable Skin Lesion Diagnosis Using Taxonomies,” *Pattern Recognition*, vol. 110, p. 107413, 2021.
- [19] P. Shamsolmoali, M. E. Celebi, and R. Wang, “Deep Learning Approaches for Real-Time Image Super-Resolution,” *Neural Computing and Applications*, vol. 32, pp. 14519–14520, 2020.
- [20] P. Shamsolmoali, M. E. Celebi, and R. Wang, “Advances in Deep Learning for Real-Time Image and Video Reconstruction and Processing,” *Journal of Real-Time Image Processing*, vol. 17, no. 6, pp. 1883–1884, 2020.
- [21] S. Zhang, H. Zhou, D. Xu, M. E. Celebi, and T. Bouwmans, “Introduction to the Special Issue on Multimodal Machine Learning for Human Behavior Analysis,” *ACM Transactions on Multimedia Computing, Communications, and Applications*, vol. 16, no. 1s, 2020. Article 19.
- [22] A. R. Sadri, M. E. Celebi, N. Rahnavard, and S. E. Viswanath, “Sparse Wavelet Networks,” *IEEE Signal Processing Letters*, vol. 27, pp. 111–115, 2020.
- [23] S. Thompson, M. E. Celebi, and K. H. Buck, “Fast Color Quantization Using MacQueen’s k -Means Algorithm,” *Journal of Real-Time Image Processing*, vol. 17, no. 5, pp. 1609–1624, 2020.
- [24] C. Curiel-Lewandrowski, R. A. Novoa, E. Berry, M. E. Celebi, N. Codella, F. Giuste, D. Gutman, A. Halpern, S. Leachman, Y. Liu, Y. Liu, O. Reiter, and P. Tschandl, “Artificial Intelligence Approach in Melanoma,” in *Melanoma* (D. E. Fisher and B. C. Bastian, eds.), pp. 599–628, Springer, 2019.
- [25] Z. Jiang, P. Chazot, M. E. Celebi, D. Crookes, and R. Jiang, “Social Behavioral Phenotyping of *Drosophila* with a 2D-3D Hybrid CNN Framework,” *IEEE Access*, vol. 7, pp. 67972–67982, 2019.

- [26] M. E. Celebi, N. Codella, A. Halpern, and D. Shen, "Guest Editorial: Skin Lesion Image Analysis for Melanoma Detection," *IEEE Journal of Biomedical and Health Informatics*, vol. 23, no. 2, pp. 479–480, 2019.
- [27] M. E. Celebi, N. Codella, and A. Halpern, "Dermoscopy Image Analysis: Overview and Future Directions," *IEEE Journal of Biomedical and Health Informatics*, vol. 23, no. 2, pp. 474–478, 2019.
- [28] C. Barata, M. E. Celebi, and J. S. Marques, "A Survey of Feature Extraction in Dermoscopy Image Analysis of Skin Cancer," *IEEE Journal of Biomedical and Health Informatics*, vol. 23, no. 3, pp. 1096–1109, 2019.
- [29] M. Zareapoor, M. E. Celebi, and J. Yang, "Diverse Adversarial Network for Image Super-Resolution," *Signal Processing: Image Communication*, vol. 74, pp. 191–200, 2019.
- [30] Q. Abbas and M. E. Celebi, "Dermodeep - A Classification of Melanoma-Nevus Skin Lesions Using Multi-Feature Fusion of Visual Features and Deep Neural Network," *Multimedia Tools and Applications*, vol. 78, no. 16, pp. 23559–23580, 2019.
- [31] E. Ardizzone and M. E. Celebi, "Image and Video Analysis, Detection and Recognition," *Journal of Electronic Imaging*, vol. 27, no. 5, p. 051201, 2018.
- [32] M. A. Marchetti, N. C. F. Codella, S. W. Dusza, D. A. Gutman, B. Helba, A. Kalloo, N. Mishra, C. Carrera, M. E. Celebi, J. L. DeFazio, N. Jaimes, A. A. Marghoob, E. Quigley, A. Scope, O. Yelamos, and A. C. Halpern, "Results of the 2016 International Skin Imaging Collaboration International Symposium on Biomedical Imaging Challenge: Comparison of the Accuracy of Computer Algorithms to Dermatologists for the Diagnosis of Melanoma from Dermoscopic Images," *Journal of the American Academy of Dermatology*, vol. 78, no. 2, pp. 270–277, 2018.
- [33] A. Katapadi, M. E. Celebi, S. Trotter, and M. Gurcan, "Evolving Strategies for the Development and Evaluation of a Computerized Melanoma Image Analysis System," *Computer Methods in Biomechanics and Biomedical Engineering: Imaging and Visualization*, vol. 6, no. 4, pp. 465–472, 2018.
- [34] C. Barata, M. E. Celebi, and J. S. Marques, "Development of a Clinically Oriented System for Melanoma Diagnosis," *Pattern Recognition*, vol. 69, pp. 270–285, 2017.
- [35] A. R. Sadri, S. Azarianpour, M. Zekri, M. E. Celebi, and S. Sadri, "WN Based Approach to Melanoma Diagnosis from Dermoscopy Images," *IET Image Processing*, vol. 11, no. 7, pp. 475–482, 2017.
- [36] R. Kaur, R. LeAnder, N. K. Mishra, J. R. Hagerty, R. Kasmi, R. J. Stanley, M. E. Celebi, and W. V. Stoecker, "Thresholding Methods for Lesion Segmentation of Basal Cell Carcinoma in Dermoscopy Images," *Skin Research and Technology*, vol. 23, no. 3, pp. 416–428, 2017.
- [37] O. Lézoray, C. Meurie, and M. E. Celebi, "Superpixels for Image Processing and Computer Vision," *Journal of Electronic Imaging*, vol. 26, no. 6, p. 061601, 2017.
- [38] R. Jiang, A. Bouridane, D. Crookes, M. E. Celebi, and H. L. Wei, "Privacy-Protected Facial Biometric Verification via Fuzzy Forest Learning," *IEEE Transactions on Fuzzy Systems*, vol. 24, no. 4, pp. 779–790, 2016.
- [39] R. Jiang, S. Al-Maadeed, A. Bouridane, D. Crookes, M. E. Celebi, and Q. Meng, "Face Recognition in Scrambled Domain via Saliency-Aware Ensembles of Many Kernels," *IEEE Transactions on Information Forensics and Security*, vol. 11, no. 8, pp. 1807–1817, 2016.

- [40] C. Barata, M. E. Celebi, J. S. Marques, and J. Rozeira, “Clinically Inspired Analysis of Dermoscopy Images Using a Generative Model,” *Computer Vision and Image Understanding*, vol. 151, pp. 124–137, 2016.
- [41] M. E. Celebi, Q. Wen, and S. Hwang, “An Effective Real-Time Color Quantization Method Based on Divisive Hierarchical Clustering,” *Journal of Real-Time Image Processing*, vol. 10, no. 2, pp. 329–344, 2015.
- [42] M. E. Celebi, B. Smolka, and G. Schaefer, “Special Issue on Real-Time Color Image Processing,” *Journal of Real-Time Image Processing*, vol. 10, no. 2, pp. 189–191, 2015.
- [43] C. Barata, M. E. Celebi, and J. S. Marques, “Improving Dermoscopy Image Classification Using Color Constancy,” *IEEE Journal of Biomedical and Health Informatics*, vol. 19, no. 3, pp. 1146–1152, 2015.
- [44] K. Shimizu, H. Iyatomi, M. E. Celebi, K. A. Norton, and M. Tanaka, “Four-Class Classification of Skin Lesions with Task Decomposition Strategy,” *IEEE Transactions on Biomedical Engineering*, vol. 62, no. 1, pp. 274–283, 2015.
- [45] M. E. Celebi, Q. Wen, H. Iyatomi, K. Shimizu, H. Zhou, and G. Schaefer, “A State-of-the-Art Survey on Lesion Border Detection in Dermoscopy Images,” in *Dermoscopy Image Analysis* (M. E. Celebi, T. Mendonça, and J. S. Marques, eds.), pp. 97–129, CRC Press, 2015.
- [46] C. Barata, M. E. Celebi, and J. S. Marques, “Towards a Robust Analysis of Dermoscopy Images Acquired under Different Conditions,” in *Dermoscopy Image Analysis* (M. E. Celebi, T. Mendonça, and J. S. Marques, eds.), pp. 1–22, CRC Press, 2015.
- [47] M. E. Celebi and H. A. Kingravi, “Linear, Deterministic, and Order-Invariant Initialization Methods for the k -Means Clustering Algorithm,” in *Partitional Clustering Algorithms* (M. E. Celebi, ed.), pp. 79–98, Springer, 2014.
- [48] M. E. Celebi, S. Hwang, and Q. Wen, “Color Quantization Using the Adaptive Distributing Units Algorithm,” *Imaging Science Journal*, vol. 62, no. 2, pp. 80–91, 2014.
- [49] M. E. Celebi and A. Zornberg, “Automated Quantification of Clinically Significant Colors in Dermoscopy Images and Its Application to Skin Lesion Classification,” *IEEE Systems Journal*, vol. 8, no. 3, pp. 980–984, 2014.
- [50] K. Shimizu, H. Iyatomi, K. A. Norton, and M. E. Celebi, “Extension of Automated Melanoma Screening for Non-Melanocytic Skin Lesions,” *International Journal of Computer Applications in Technology*, vol. 50, no. 1–2, pp. 122–130, 2014.
- [51] G. Schaefer, B. Krawczyk, M. E. Celebi, and H. Iyatomi, “An Ensemble Classification Approach for Melanoma Diagnosis,” *Memetic Computing*, vol. 6, no. 4, pp. 233–240, 2014.
- [52] M. E. Celebi, Q. Wen, S. Hwang, H. Iyatomi, and G. Schaefer, “Lesion Border Detection in Dermoscopy Images Using Ensembles of Thresholding Methods,” *Skin Research and Technology*, vol. 19, no. 1, pp. e252–e258, 2013.
- [53] M. E. Celebi, H. Kingravi, and P. A. Vela, “A Comparative Study of Efficient Initialization Methods for the k -Means Clustering Algorithm,” *Expert Systems with Applications*, vol. 40, no. 1, pp. 200–210, 2013.
- [54] Q. Abbas, I. F. Garcia, M. E. Celebi, W. Ahmad, and Q. Mushtaq, “A Perceptually Oriented Method for Contrast Enhancement and Segmentation of Dermoscopy Images,” *Skin Research and Technology*, vol. 19, no. 1, pp. e490–e497, 2013.

- [55] Q. Abbas, M. E. Celebi, C. Serrano, I. F. Garcia, and G. Ma, "Pattern Classification of Dermoscopy Images: A Perceptually Uniform Model," *Pattern Recognition*, vol. 46, no. 1, pp. 86–97, 2013.
- [56] Q. Abbas, M. E. Celebi, and I. F. Garcia, "Breast Mass Segmentation Using Region-Based and Edge-Based Methods in a 4-Stage Multiscale System," *Biomedical Signal Processing and Control*, vol. 8, no. 2, pp. 204–214, 2013.
- [57] Q. Abbas, I. F. Garcia, M. E. Celebi, W. Ahmad, and Q. Mushtaq, "Unified Approach for Lesion Border Detection Based on Mixture Modeling and Local Entropy Thresholding," *Skin Research and Technology*, vol. 19, no. 3, pp. 314–319, 2013.
- [58] Q. Abbas, I. F. Garcia, M. E. Celebi, and W. Ahmad, "A Feature-Preserving Hair Removal Algorithm for Dermoscopy Images," *Skin Research and Technology*, vol. 19, no. 1, pp. e27–e36, 2013.
- [59] Q. Abbas, M. E. Celebi, I. F. Garcia, and W. Ahmad, "Melanoma Recognition Framework Based on Expert Definition of ABCD for Dermoscopic Images," *Skin Research and Technology*, vol. 19, no. 1, pp. e93–e102, 2013.
- [60] Q. Abbas, M. T. A. Khan, A. Farooq, and M. E. Celebi, "Segmentation of Lungs in HRCT Scan Images Using Particle Swarm Optimization," *International Journal of Innovative Computing, Information and Control*, vol. 9, no. 5, pp. 2155–2165, 2013.
- [61] H. Zhou, X. Li, G. Schaefer, M. E. Celebi, and P. Miller, "Mean Shift Based Gradient Vector Flow for Image Segmentation," *Computer Vision and Image Understanding*, vol. 117, no. 9, pp. 1004–1016, 2013.
- [62] M. E. Celebi, H. Kingravi, and F. Celiker, "Comments on 'On Approximating Euclidean Metrics by Weighted t-Cost Distances in Arbitrary Dimension'," *Pattern Recognition Letters*, vol. 33, no. 10, pp. 1422–1425, 2012.
- [63] M. E. Celebi and H. Kingravi, "Deterministic Initialization of the k -Means Algorithm Using Hierarchical Clustering," *International Journal of Pattern Recognition and Artificial Intelligence*, vol. 26, no. 7, p. 1250018, 2012.
- [64] M. E. Celebi, Q. Wen, S. Hwang, and G. Schaefer, "Color Quantization of Dermoscopy Images Using the k -Means Clustering Algorithm," in *Color Medical Image Analysis* (M. E. Celebi and G. Schaefer, eds.), pp. 87–107, Springer, 2012.
- [65] Q. Abbas, M. E. Celebi, and I. F. Garcia, "Computer-Aided Pattern Classification System for Dermoscopy Images," *Skin Research and Technology*, vol. 18, no. 3, pp. 278–289, 2012.
- [66] Q. Abbas, M. E. Celebi, and I. F. Garcia, "A Novel Perceptually-Oriented Approach for Skin Tumor Segmentation," *International Journal of Innovative Computing, Information and Control*, vol. 8, no. 3, pp. 1837–1848, 2012.
- [67] Q. Abbas, M. E. Celebi, and I. F. Garcia, "Skin Tumor Area Extraction Using an Improved Dynamic Programming Approach," *Skin Research and Technology*, vol. 18, no. 2, pp. 133–142, 2012.
- [68] K. A. Norton, H. Iyatomi, M. E. Celebi, S. Ishizaki, M. Sawada, R. Suzaki, K. Kobayashi, M. Tanaka, and K. Ogawa, "Three-Phase General Border Detection Method for Dermoscopy Images Using Non-Uniform Illumination Correction," *Skin Research and Technology*, vol. 18, no. 3, pp. 290–300, 2012.
- [69] M. E. Celebi, F. Celiker, and H. Kingravi, "On Euclidean Norm Approximations," *Pattern Recognition*, vol. 44, no. 2, pp. 278–283, 2011.

- [70] M. E. Celebi, "Improving the Performance of k -Means for Color Quantization," *Image and Vision Computing*, vol. 29, no. 4, pp. 260–271, 2011.
- [71] M. E. Celebi, W. V. Stoecker, and R. H. Moss, "Advances in Skin Cancer Image Analysis," *Computerized Medical Imaging and Graphics*, vol. 35, no. 2, pp. 83–84, 2011.
- [72] Q. Wen and M. E. Celebi, "Hard versus Fuzzy c -Means Clustering for Color Quantization," *EURASIP Journal on Advances in Signal Processing*, vol. 2011, no. 1, pp. 118–129, 2011.
- [73] Q. Abbas, M. E. Celebi, I. F. Garcia, and M. Rashid, "Lesion Border Detection in Dermoscopy Images Using Dynamic Programming," *Skin Research and Technology*, vol. 17, no. 1, pp. 91–100, 2011.
- [74] Q. Abbas, M. E. Celebi, and I. F. Garcia, "Hair Removal Methods: A Comparative Study for Dermoscopy Images," *Biomedical Signal Processing and Control*, vol. 6, no. 4, pp. 395–404, 2011.
- [75] R. Garnavi, M. Aldeen, and M. E. Celebi, "Weighted Performance Index for Objective Evaluation of Border Detection Methods in Dermoscopy Images," *Skin Research and Technology*, vol. 17, no. 1, pp. 35–44, 2011.
- [76] R. Garnavi, M. Aldeen, M. E. Celebi, G. Varigos, and S. Finch, "Border Detection in Dermoscopy Images Using Hybrid Thresholding on Optimized Color Channels," *Computerized Medical Imaging and Graphics*, vol. 35, no. 2, pp. 105–115, 2011.
- [77] H. Iyatomi, M. E. Celebi, G. Schaefer, and M. Tanaka, "Automated Color Calibration Method for Dermoscopy Images," *Computerized Medical Imaging and Graphics*, vol. 35, no. 2, pp. 89–98, 2011.
- [78] G. Schaefer, M. I. Rajab, M. E. Celebi, and H. Iyatomi, "Colour and Contrast Enhancement for Improved Skin Lesion Segmentation," *Computerized Medical Imaging and Graphics*, vol. 35, no. 2, pp. 99–104, 2011.
- [79] G. Schaefer, H. Zhou, M. E. Celebi, and A. E. Hassanien, "Rough Colour Quantisation," *International Journal of Hybrid Intelligent Systems*, vol. 8, no. 1, pp. 25–30, 2011.
- [80] H. Wang, R. H. Moss, X. Chen, R. J. Stanley, W. V. Stoecker, M. E. Celebi, J. M. Malters, J. M. Grichnik, A. A. Marghoob, H. S. Rabinovitz, S. W. Menzies, and T. M. Szalapski, "Modified Watershed Technique and Post-Processing for Segmentation of Skin Lesions in Dermoscopy Images," *Computerized Medical Imaging and Graphics*, vol. 35, no. 2, pp. 116–120, 2011.
- [81] H. Zhou, G. Schaefer, M. E. Celebi, F. Lin, and T. Liu, "Gradient Vector Flow with Mean Shift for Skin Lesion Segmentation," *Computerized Medical Imaging and Graphics*, vol. 35, no. 2, pp. 121–127, 2011.
- [82] M. E. Celebi, H. Kingravi, and F. Celiker, "Fast Color Space Transformations Using Minimax Approximations," *IET Image Processing*, vol. 4, no. 2, pp. 70–79, 2010.
- [83] H. Wang, X. Chen, R. H. Moss, R. J. Stanley, W. V. Stoecker, M. E. Celebi, T. M. Szalapski, J. M. Malters, J. M. Grichnik, A. A. Marghoob, H. S. Rabinovitz, and S. W. Menzies, "Segmentation of Skin Lesions in Dermoscopy Images Using a Watershed Technique," *Skin Research and Technology*, vol. 16, no. 3, pp. 378–384, 2010.
- [84] B. Shrestha, J. Bishop, K. Kam, X. Chen, R. H. Moss, W. V. Stoecker, S. Umbaugh, R. J. Stanley, M. E. Celebi, A. A. Marghoob, G. Argenziano, and H. P. Soyer, "Detection of Atypical Texture Features in Early Malignant Melanoma," *Skin Research and Technology*, vol. 16, no. 1, pp. 60–65, 2010.

- [85] M. E. Celebi, "Real-Time Implementation of Order-Statistics Based Directional Filters," *IET Image Processing*, vol. 3, no. 1, pp. 1–9, 2009.
- [86] M. E. Celebi, H. Iyatomi, G. Schaefer, and W. V. Stoecker, "Lesion Border Detection in Dermoscopy Images," *Computerized Medical Imaging and Graphics*, vol. 33, no. 2, pp. 148–153, 2009.
- [87] M. E. Celebi, H. Iyatomi, G. Schaefer, and W. V. Stoecker, "Approximate Lesion Localization in Dermoscopy Images," *Skin Research and Technology*, vol. 15, no. 3, pp. 314–322, 2009.
- [88] M. E. Celebi, H. Kingravi, R. Lukac, and F. Celiker, "Cost-Effective Implementation of Order-Statistics Based Vector Filters Using Minimax Approximations," *Journal of the Optical Society of America A*, vol. 26, no. 6, pp. 1518–1524, 2009.
- [89] M. E. Celebi, "Distance Measures for Reduced Ordering Based Vector Filters," *IET Image Processing*, vol. 3, no. 5, pp. 249–260, 2009.
- [90] M. E. Celebi, G. Schaefer, H. Iyatomi, W. V. Stoecker, J. M. Malters, and J. M. Grichnik, "An Improved Objective Evaluation Measure for Border Detection in Dermoscopy Images," *Skin Research and Technology*, vol. 15, no. 4, pp. 444–450, 2009.
- [91] M. E. Celebi, "Fast Color Quantization Using Weighted Sort-Means Clustering," *Journal of the Optical Society of America A*, vol. 26, no. 11, pp. 2434–2443, 2009.
- [92] W. V. Stoecker, K. Gupta, B. Shrestha, M. Wronkiewicz, R. Chowdhury, R. J. Stanley, J. Xu, R. H. Moss, M. E. Celebi, H. S. Rabinovitz, M. Oliviero, J. M. Malters, and I. Kolm, "Detection of Basal Cell Carcinoma Using Color and Histogram Measures of Semitranslucent Areas," *Skin Research and Technology*, vol. 15, no. 3, pp. 283–287, 2009.
- [93] J. Xu, K. Gupta, W. V. Stoecker, Y. Krishnamurthy, H. S. Rabinovitz, A. Bangert, D. Calcara, M. Oliviero, J. M. Malters, R. Drugge, R. J. Stanley, R. H. Moss, and M. E. Celebi, "Analysis of Globule Types in Malignant Melanoma," *Archives of Dermatology*, vol. 145, no. 11, pp. 1245–1251, 2009.
- [94] H. Zhou, G. Schaefer, A. Sadka, and M. E. Celebi, "Anisotropic Mean Shift Based Fuzzy c -Means Segmentation of Dermoscopy Images," *IEEE Journal of Selected Topics in Signal Processing*, vol. 3, no. 1, pp. 26–34, 2009.
- [95] K. K. Agarwal, A. Agarwal, and M. E. Celebi, "Python Puts a Squeeze on Java for CS0 and Beyond," *The Journal of Computing Sciences in Colleges*, vol. 23, no. 6, pp. 49–57, 2008.
- [96] M. E. Celebi and A. Aslandogan, "Robust Switching Vector Median Filter for Impulsive Noise Removal," *Journal of Electronic Imaging*, vol. 17, no. 4, p. 043006, 2008.
- [97] M. E. Celebi, H. Iyatomi, W. V. Stoecker, R. H. Moss, H. S. Rabinovitz, G. Argenziano, and H. P. Soyer, "Automatic Detection of Blue-White Veil and Related Structures in Dermoscopy Images," *Computerized Medical Imaging and Graphics*, vol. 32, no. 8, pp. 670–677, 2008.
- [98] M. E. Celebi, H. Kingravi, H. Iyatomi, A. Aslandogan, W. V. Stoecker, and R. H. Moss, "Border Detection in Dermoscopy Images Using Statistical Region Merging," *Skin Research and Technology*, vol. 14, no. 3, pp. 347–353, 2008.
- [99] H. Iyatomi, H. Oka, M. E. Celebi, K. Ogawa, G. Argenziano, H. Soyer, H. Koga, T. Saida, K. Ohara, and M. Tanaka, "Computer-Based Classification of Dermoscopy Images of Melanocytic Lesions on Acral Volar Skin," *Journal of Investigative Dermatology*, vol. 128, no. 8, pp. 2049–2054, 2008.

- [100] H. Iyatomi, H. Oka, M. E. Celebi, M. Hashimoto, M. Hagiwara, M. Tanaka, and K. Ogawa, “An Improved Internet-Based Melanoma Screening System with Dermatologist-like Tumor Area Extraction Algorithm,” *Computerized Medical Imaging and Graphics*, vol. 32, no. 7, pp. 566–579, 2008.
- [101] M. E. Celebi, A. Aslandogan, and W. V. Stoecker, “Unsupervised Border Detection in Dermoscopy Images,” *Skin Research and Technology*, vol. 13, no. 4, pp. 454–462, 2007.
- [102] M. E. Celebi, H. Kingravi, B. Uddin, H. Iyatomi, A. Aslandogan, W. V. Stoecker, and R. H. Moss, “A Methodological Approach to the Classification of Dermoscopy Images,” *Computerized Medical Imaging and Graphics*, vol. 31, no. 6, pp. 362–373, 2007.
- [103] M. E. Celebi, H. Kingravi, and A. Aslandogan, “Nonlinear Vector Filtering for Impulsive Noise Removal from Color Images,” *Journal of Electronic Imaging*, vol. 16, no. 3, p. 033008, 2007.
- [104] M. E. Celebi, H. Kingravi, and B. Uddin, “Fast Switching Filter for Impulsive Noise Removal from Color Images,” *Journal of Imaging Science and Technology*, vol. 51, no. 2, pp. 155–165, 2007.

Conference Proceedings Papers

- [1] S. J. Mousavirad, G. Schaefer, M. E. Celebi, H. Fang, and X. Liu, “Colour Quantisation Using Human Mental Search and Local Refinement,” in *Proceedings of the 2020 IEEE International Conference on Systems, Man, and Cybernetics (SMC 2020)*, October 11–14 2020.
- [2] C. Barata, J. S. Marques, and M. E. Celebi, “Deep Attention Model for the Hierarchical Diagnosis of Skin Lesions,” in *Proceedings of the 30th IEEE/CVF Conference on Computer Vision and Pattern Recognition Workshops*, pp. 2757–2765, 2019.
- [3] G. Valenzuela, M. E. Celebi, and G. Schaefer, “Color Quantization Using Coreset Sampling,” in *Proceedings of the 2018 IEEE International Conference on Systems, Man, and Cybernetics (SMC 2018)*, pp. 2096–2101, October 7–10 2018.
- [4] N. C. F. Codella, D. Gutman, M. E. Celebi, B. Helba, M. A. Marchetti, S. W. Dusza, A. Kalloo, K. Liopyris, N. Mishra, H. Kittler, and A. Halpern, “Skin Lesion Analysis Toward Melanoma Detection: A Challenge at the 2017 International Symposium on Biomedical Imaging (ISBI), Hosted by the International Skin Imaging Collaboration (ISIC),” in *Proceedings of the 2018 IEEE International Symposium on Biomedical Imaging (ISBI 2018)*, pp. 168–172, April 4–7 2018.
- [5] C. Barata, M. A. T. Figueiredo, M. E. Celebi, and J. S. Marques, “Local Features Applied to Dermoscopy Images: Bag-of-Features versus Sparse Coding,” in *Proceedings of the 8th Iberian Conference on Pattern Recognition and Image Analysis (IbPRIA 2017)*, pp. 528–536, June 20–23 2017.
- [6] G. Schaefer, P. Agarwal, and M. E. Celebi, “Effective Colour Reduction Using Grey Wolf Optimisation,” in *Proceedings of the VI ECCOMAS Thematic Conference on Computational Vision and Medical Image Processing*, pp. 170–178, October 18–20 2017.
- [7] T. Yoshida, M. E. Celebi, G. Schaefer, and H. Iyatomi, “Simple and Effective Pre-Processing for Automated Melanoma Discrimination Based on Cytological Findings,” in *Proceedings of the 2016 IEEE International Conference on Big Data*, pp. 3439–3442, December 5–8 2016.
- [8] K. Ohki, M. E. Celebi, G. Schaefer, and H. Iyatomi, “Building of Readable Decision Trees for Automated Melanoma Discrimination,” in *Proceedings of the 11th International Symposium on Visual Computing (ISVC 2015)*, vol. 2, pp. 712–721, December 14–16 2015.

- [9] C. Barata, M. E. Celebi, and J. S. Marques, “Color Detection in Dermoscopy Images Based on Scarce Annotations,” in *Proceedings of the 7th Iberian Conference on Pattern Recognition and Image Analysis (IbPRIA 2015)*, pp. 309–316, June 17–19 2015.
- [10] C. Barata, M. E. Celebi, and J. S. Marques, “A Clinically Oriented System for Melanoma Diagnosis Using a Color Representation,” in *Proceedings of the 37th Annual International Conference of the IEEE Engineering in Medicine and Biology Society (EMBC 2015)*, pp. 7462–7465, August 25–29 2015.
- [11] C. Barata, M. E. Celebi, and J. S. Marques, “Melanoma Detection Algorithm Based on Feature Fusion,” in *Proceedings of the 37th Annual International Conference of the IEEE Engineering in Medicine and Biology Society (EMBC 2015)*, pp. 2653–2656, August 25–29 2015.
- [12] P. E. Rauber, R. R. O. da Silva, S. Feringa, M. E. Celebi, A. X. Falcao, and A. C. Telea, “Interactive Image Feature Selection Aided by Dimensionality Reduction,” in *Proceedings of the 6th International EuroVis Workshop on Visual Analytics (EuroVA 2015)*, June 12–13 2015.
- [13] G. Schaefer, B. Krawczyk, M. E. Celebi, H. Iyatomi, and A. E. Hassanien, “Melanoma Classification Based on Ensemble Classification of Dermoscopy Image Features,” in *Proceedings of the 2nd International Conference Advanced Machine Learning Technologies and Applications (AMTLA 2014)*, pp. 291–298, November 28–30 2014.
- [14] C. Barata, M. A. T. Figueiredo, M. E. Celebi, and J. S. Marques, “Color Identification in Dermoscopy Images Using Gaussian Mixture Models,” in *Proceedings of the IEEE International Conference on Acoustics, Speech, and Signal Processing (ICASSP 2014)*, pp. 3611–3615, May 4–9 2014.
- [15] C. Barata, M. E. Celebi, and J. S. Marques, “Improving Dermoscopy Image Analysis Using Color Constancy,” in *Proceedings of the IEEE International Conference on Image Processing (ICIP 2014)*, pp. 3527–3531, October 27–30 2014.
- [16] C. Gingles and M. E. Celebi, “Histogram-Based Method for Effective Initialization of the k -Means Clustering Algorithm,” in *Proceedings of the 27th International Florida Artificial Intelligence Research Society Conference (FLAIRS 2014)*, pp. 333–338, May 21–23 2014.
- [17] Q. Abbas, I. F. Garcia, A. Sarmiento, and M. E. Celebi, “An Improved Segmentation Method for Non-Melanoma Skin Lesions Using Active Contour Model,” in *Proceedings of the 11th International Conference on Image Analysis and Recognition (ICIAR 2014)*, vol. 2, pp. 193–200, October 22–24 2014.
- [18] M. E. Celebi and Q. Wen, “Variance-Cut: A Fast Color Quantization Method Based on Hierarchical Clustering,” in *Proceedings of the 10th International Conference on Electronics, Computer and Computation (ICECCO 2013)*, pp. 103–106, November 7–9 2013. [Best Track Paper Award].
- [19] D. Edmundson, G. Schaefer, and M. E. Celebi, “Similarity-Based Browsing of Image Search Results,” in *Proceedings of the IEEE International Symposium on Multimedia (ISM 2013)*, pp. 502–503, December 9–11 2013.
- [20] G. Schaefer, B. Krawczyk, M. E. Celebi, and H. Iyatomi, “Melanoma Classification Using Dermoscopy Imaging and Ensemble Learning,” in *Proceedings of the 2nd IAPR Asian Conference on Pattern Recognition (ACPR 2013)*, pp. 386–390, November 5–8 2013.
- [21] C. Barata, M. E. Celebi, and J. S. Marques, “Towards an Automatic Bag-of-Features Model for the Classification of Dermoscopy Images: The Influence of Segmentation,” in *Proceedings of the 8th International Symposium on Image and Signal Processing and Analysis (ISPA 2013)*, pp. 274–279, September 4–6 2013.

- [22] S. Hwang and M. E. Celebi, "Automatic Method of Gender Dependent Age-Group Classification," in *Proceedings of the International Conference on Image Processing, Computer Vision, and Pattern Recognition (IPCV 2013)*, pp. 668–674, July 22–25 2013.
- [23] S. Merendino and M. E. Celebi, "A Simulated Annealing Clustering Algorithm Based on Center Perturbation Using Gaussian Mutation," in *Proceedings of the 26th International Florida Artificial Intelligence Research Society Conference (FLAIRS 2013)*, pp. 456–461, May 22–26 2013.
- [24] A. Fausett and M. E. Celebi, "An Accelerated Nearest Neighbor Search Method for the k -Means Clustering Algorithm," in *Proceedings of the 26th International Florida Artificial Intelligence Research Society Conference (FLAIRS 2013)*, pp. 426–431, May 22–26 2013.
- [25] M. E. Celebi, "A Simple and Efficient Algorithm for Connected Component Labeling in Color Images," in *Proceedings of the SPIE Electronic Imaging Conference*, vol. 8295, pp. 82951H–1–6, January 22–26 2012.
- [26] M. E. Celebi, Q. Wen, G. Schaefer, and H. Zhou, "Batch Neural Gas with Deterministic Initialization for Color Quantization," in *Proceedings of the International Conference on Computer Vision and Graphics (ICCVG 2012)*, pp. 48–54, September 24–26 2012.
- [27] J. Vicory and M. E. Celebi, "An Adaptive and Deterministic Method for Initializing the Lloyd-Max Algorithm," in *Proceedings of the SPIE Electronic Imaging Conference*, vol. 8295, pp. 82951I–1–7, January 22–26 2012.
- [28] J. Baarsch and M. E. Celebi, "Investigation of Internal Validity Measures for k -Means Clustering," in *Proceedings of the 2012 IAENG International Conference on Data Mining and Applications (ICDMA 2012)*, pp. 471–476, March 14–16 2012.
- [29] B. Uddin, M. E. Celebi, H. Kingravi, and G. Schaefer, "Accurate Genomic Signal Recovery using Compressed Sensing," in *Proceedings of the 21st International Conference on Pattern Recognition (ICPR 2012)*, pp. 3144–3147, November 11–15 2012.
- [30] D. Edmundson, G. Schaefer, and M. E. Celebi, "Robust Texture Retrieval of Compressed Images," in *Proceedings of the IEEE International Conference on Image Processing (ICIP 2012)*, pp. 2421–2424, September 30–October 3 2012.
- [31] S. Marshall and M. E. Celebi, "Comparison of Conventional and Bisecting k -Means Algorithms on Color Quantization," in *Proceedings of the 14th IASTED International Conference on Signal and Image Processing (SIP 2012)*, August 20–22 2012.
- [32] K. Shimizu, H. Iyatomi, K. A. Norton, and M. E. Celebi, "Extension of Automated Melanoma Screening for Non-Melanocytic Skin Lesions," in *Proceedings of the 19th International Conference on Mechatronics and Machine Vision in Practice (M2VIP 2012)*, pp. 16–19, November 28–30 2012.
- [33] M. E. Celebi, Q. Wen, and J. Chen, "Color Quantization Using c -Means Clustering Algorithms," in *Proceedings of the IEEE International Conference on Image Processing (ICIP 2011)*, pp. 1729–1732, September 11–14 2011.
- [34] Q. Wen, M. E. Celebi, and G. Schaefer, "A Comparative Study of k -Means and Fuzzy c -Means for Color Reduction," in *Proceedings of the International Conference on Image Processing, Computer Vision, and Pattern Recognition (IPCV 2011)*, pp. 479–483, July 18–21 2011.
- [35] M. E. Celebi, "Alternative Distance/Similarity Measures for Reduced Ordering Based Nonlinear Vector Filters," in *Proceedings of the IEEE International Conference on Acoustics, Speech, and Signal Processing (ICASSP 2010)*, pp. 1266–1269, March 14–19 2010.

- [36] M. E. Celebi and G. Schaefer, "Neural Gas Clustering For Color Reduction," in *Proceedings of the International Conference on Image Processing, Computer Vision, and Pattern Recognition (IPCV 2010)*, pp. 429–432, July 12–15 2010.
- [37] M. E. Celebi, G. Schaefer, and H. Zhou, "A New Family of Order-Statistics Based Switching Vector Filters," in *Proceedings of the IEEE International Conference on Image Processing (ICIP 2010)*, pp. 97–100, September 26–29 2010.
- [38] M. E. Celebi, H. Kingravi, and F. Celiker, "Accelerating Color Space Transformations Using Numerical Approximations," in *Proceedings of the IEEE International Conference on Image Processing (ICIP 2010)*, pp. 1349–1352, September 26–29 2010.
- [39] M. E. Celebi, S. Hwang, H. Iyatomi, and G. Schaefer, "Robust Border Detection in Dermoscopy Images Using Threshold Fusion," in *Proceedings of the IEEE International Conference on Image Processing (ICIP 2010)*, pp. 2541–2544, September 26–29 2010.
- [40] H. Iyatomi, M. E. Celebi, G. Schaefer, and M. Tanaka, "Automated Color Normalization for Dermoscopy Images," in *Proceedings of the IEEE International Conference on Image Processing (ICIP 2010)*, pp. 4357–4360, September 26–29 2010.
- [41] H. Iyatomi, K. A. Norton, M. E. Celebi, G. Schaefer, M. Tanaka, and K. Ogawa, "Classification of Melanocytic Skin Lesions from Non-Melanocytic Lesions," in *Proceedings of the 32nd Annual International Conference of the IEEE Engineering in Medicine and Biology Society (EMBC 2010)*, pp. 5407–5410, August 31–September 4 2010.
- [42] K. A. Norton, H. Iyatomi, M. E. Celebi, G. Schaefer, M. Tanaka, and K. Ogawa, "Development of a Novel Border Detection Method for Melanocytic and Non-Melanocytic Dermoscopy Images," in *Proceedings of the 32nd Annual International Conference of the IEEE Engineering in Medicine and Biology Society (EMBC 2010)*, pp. 5403–5406, August 31–September 4 2010.
- [43] H. Zhou, G. Schaefer, M. E. Celebi, H. Iyatomi, T. Liu, and F. Lin, "Skin Lesion Segmentation Using an Improved Snake Model," in *Proceedings of the 32nd Annual International Conference of the IEEE Engineering in Medicine and Biology Society (EMBC 2010)*, pp. 1974–1977, August 31–September 4 2010.
- [44] H. Zhou, G. Schaefer, Y. Yuan, and M. E. Celebi, "Can Mean Shift Trackers Perform Better?," in *Proceedings of the 6th International Conference on Signal-Image Technology and Internet-Based Systems (SITIS 2010)*, pp. 98–101, December 15–18 2010.
- [45] S. Hwang and M. E. Celebi, "Multilevel Wireless Capsule Endoscopy Video Segmentation," in *Proceedings of the SPIE Medical Imaging Conference*, vol. 7623, pp. 76234D–1–9, February 13–18 2010.
- [46] S. Hwang and M. E. Celebi, "Polyp Detection in Wireless Capsule Endoscopy Videos Based on Image Segmentation and Geometric Feature," in *Proceedings of the IEEE International Conference on Acoustics, Speech, and Signal Processing (ICASSP 2010)*, pp. 678–681, March 14–19 2010.
- [47] S. Hwang and M. E. Celebi, "Texture Segmentation of Dermoscopy Images Using Gabor Filters and g -means Clustering," in *Proceedings of the International Conference on Image Processing, Computer Vision, and Pattern Recognition (IPCV 2010)*, pp. 882–886, July 12–15 2010.
- [48] A. Pal, G. Schaefer, and M. E. Celebi, "Robust Codebook-Based Video Background Subtraction," in *Proceedings of the IEEE International Conference on Acoustics, Speech, and Signal Processing (ICASSP 2010)*, pp. 1146–1149, March 14–19 2010.

- [49] M. E. Celebi, H. Iyatomi, G. Schaefer, and W. V. Stoecker, "Localization of Lesions in Dermoscopy Images Using Ensembles of Thresholding Methods," in *Proceedings of the 3rd Pacific-Rim Symposium on Image and Video Technology (PSIVT 2009)*, vol. 5414 of *Lecture Notes on Computer Science*, pp. 1094–1103, January 13–16 2009.
- [50] M. E. Celebi, "An Effective Color Quantization Method Based on the Competitive Learning Paradigm," in *Proceedings of the International Conference on Image Processing, Computer Vision, and Pattern Recognition (ICCV 2009)*, vol. 2, pp. 876–880, July 13–16 2009.
- [51] M. E. Celebi, "Effective Initialization of k -Means for Color Quantization," in *Proceedings of the IEEE International Conference on Image Processing (ICIP 2009)*, pp. 1649–1652, November 7–10 2009.
- [52] M. E. Celebi, H. Iyatomi, and G. Schaefer, "Contrast Enhancement in Dermoscopy Images by Maximizing a Histogram Bimodality Measure," in *Proceedings of the IEEE International Conference on Image Processing (ICIP 2009)*, pp. 2601–2604, November 7–10 2009.
- [53] M. E. Celebi, "Fast Implementation of Vector Directional Filters," in *Proceedings of the IEEE International Conference on Image Processing (ICIP 2009)*, pp. 1665–1668, November 7–10 2009.
- [54] H. Iyatomi, T. Kasamatsu, J. Hashimoto, M. E. Celebi, G. Schaefer, and K. Ogawa, "Perioperative Cardiac Risk Prediction," in *Proceedings of the 9th International Conference on Information Technology and Applications in Biomedicine (ITAB 2009)*, pp. 1–4, November 5–7 2009.
- [55] G. Schaefer, M. I. Rajab, M. E. Celebi, and H. Iyatomi, "Skin Lesion Extraction in Dermoscopic Images Based on Colour Enhancement and Iterative Segmentation," in *Proceedings of the IEEE International Conference on Image Processing (ICIP 2009)*, pp. 3361–3364, November 7–10 2009.
- [56] G. Schaefer, M. I. Rajab, M. E. Celebi, and H. Iyatomi, "Skin Lesion Segmentation Using Cooperative Neural Network Edge Detection and Colour Normalisation," in *Proceedings of the 9th International Conference on Information Technology and Applications in Biomedicine (ITAB 2009)*, pp. 1–4, November 5–7 2009.
- [57] H. Zhou, G. Schaefer, M. E. Celebi, and M. Fei, "Bayesian Image Segmentation with Mean Shift," in *Proceedings of the IEEE International Conference on Image Processing (ICIP 2009)*, pp. 2405–2408, November 7–10 2009.
- [58] R. Garnavi, M. Aldeen, M. E. Celebi, A. Bhuiyan, C. Dolianitis, and G. Varigos, "Skin Lesion Segmentation Using Color Channel Optimization and Clustering-Based Histogram Thresholding," in *Proceedings of the International Conference on Machine Vision, Image Processing, and Pattern Analysis (MVIIPA 2009)*, pp. 549–557, December 25–27 2009.
- [59] M. E. Celebi, G. Schaefer, and H. Iyatomi, "Objective Evaluation of Methods for Border Detection in Dermoscopy Images," in *Proceedings of the 30th Annual International Conference of the IEEE Engineering in Medicine and Biology Society (EMBC 2008)*, pp. 3056–3059, August 20–25 2008.
- [60] H. Iyatomi, M. E. Celebi, H. Oka, and M. Tanaka, "An Internet-Based Melanoma Screening System with Acral Volar Lesion Support," in *Proceedings of the 30th Annual International Conference of the IEEE Engineering in Medicine and Biology Society (EMBC 2008)*, pp. 5156–5159, August 20–25 2008.
- [61] J. Lee and M. E. Celebi, "STRG-QL: Spatio-Temporal Region Graph Query Language for Video Databases," in *Proceedings of the SPIE Electronic Imaging Conference*, vol. 6820, pp. 68200P–1–12, January 18–22 2008.

- [62] H. Zhou, G. Schaefer, A. Sadka, and M. E. Celebi, "Anisotropic Mean Shift Based Fuzzy c -Means Segmentation of Skin Lesions," in *Proceedings of the 5th International Conference on Soft Computing as Transdisciplinary Science and Technology (CSTST 2008)*, pp. 438–443, October 27–31 2008.
- [63] M. E. Celebi, H. Kingravi, J. Lee, A. Aslandogan, W. V. Stoecker, and R. H. Moss, "Fast and Accurate Border Detection in Dermoscopy Images Using Statistical Region Merging," in *Proceedings of the SPIE Medical Imaging Conference*, vol. 6512 of *SPIE*, pp. 65123V–1–10, February 17–22 2007.
- [64] H. Iyatomi, H. Oka, M. E. Celebi, M. Tanaka, and K. Ogawa, "Parameterization of Dermoscopic Findings for the Internet-Based Melanoma Screening System," in *Proceedings of the IEEE Symposium on Computational Intelligence in Image and Signal Processing (CIISP 2007)*, pp. 189–193, April 1–5 2007.
- [65] H. Kingravi, M. E. Celebi, and P. Rajauria, "Unsupervised Learning of Manifolds via Linear Approximations," in *Proceedings of the 18th International Conference on Database and Expert Systems Applications (DEXA 2007)*, pp. 54–58, September 3–7 2007.
- [66] S. Shah, P. Rajauria, J. Lee, and M. E. Celebi, "Classification of Bleeding Images in Wireless Capsule Endoscopy Using HSI Color Space and Region Segmentation," in *Proceedings of the New England American Society for Engineering Education Conference*, April 20–21 2007.
- [67] M. E. Celebi, H. Kingravi, and A. Aslandogan, "Detection of Blue-White Veil Areas in Dermoscopy Images Using Machine Learning Techniques," in *Proceedings of the SPIE Medical Imaging Conference*, vol. 6144, pp. 1861–1868, February 11–16 2006.
- [68] M. E. Celebi and A. Aslandogan, "Human Perception-Driven, Similarity-Based Access to Image Databases," in *Proceedings of the 18th International Florida Artificial Intelligence Research Society Conference (FLAIRS 2005)*, pp. 245–250, May 15–17 2005.
- [69] M. E. Celebi and A. Aslandogan, "A Comparative Study of Three Moment-Based Shape Descriptors," in *Proceedings of the International Conference on Information Technology: Coding and Computing (ITCC 2005)*, vol. 1, pp. 788–793, April 4–6 2005.
- [70] M. E. Celebi, A. Aslandogan, and P. Bergstresser, "Unsupervised Border Detection of Skin Lesion Images," in *Proceedings of the International Conference on Information Technology: Coding and Computing (ITCC 2005)*, vol. 2, pp. 123–128, April 4–6 2005.
- [71] M. E. Celebi, A. Aslandogan, and P. Bergstresser, "Mining Biomedical Images with Density-Based Clustering," in *Proceedings of the International Conference on Information Technology: Coding and Computing (ITCC 2005)*, vol. 1, pp. 163–168, April 4–6 2005.
- [72] M. E. Celebi, W. Guo, and A. Aslandogan, "Skin Lesion Segmentation Using Clustering Techniques," in *Proceedings of the 18th International Florida Artificial Intelligence Research Society Conference (FLAIRS 2005)*, pp. 364–369, May 15–17 2005.
- [73] N. Wei, M. E. Celebi, and G. Geng, "Content Based Retrieval and Classification of Cultural Relic Images," in *Proceedings of the 2nd International Symposium on Neural Networks (ISNN 2005)*, vol. 3497 of *Lecture Notes in Computer Science*, pp. 292–297, May 30–June 1 2005.
- [74] M. E. Celebi and A. Aslandogan, "Content-Based Image Retrieval Incorporating Models of Human Perception," in *Proceedings of the International Conference on Information Technology: Coding and Computing (ITCC 2004)*, vol. 2, pp. 241–245, April 5–7 2004.

- [75] I. Noorzaie, A. Aslandogan, and M. E. Celebi, “A System for Distributed Image Acquisition, Content-Analysis and Similarity Retrieval,” in *Proceedings of the IEEE International Conference on Information Reuse and Integration (IRI 2004)*, pp. 168–173, November 8–10 2004.

Unpublished

- [1] N. Codella, V. Rotemberg, P. Tschandl, M. E. Celebi, S. Dusza, D. Gutman, B. Helba, A. Kalloo, K. Liopyris, M. Marchetti, H. Kittler, and A. Halpern, “Skin Lesion Analysis Toward Melanoma Detection 2018: A Challenge Hosted by the International Skin Imaging Collaboration (ISIC).” <https://arxiv.org/abs/1902.03368>, 2019.
- [2] N. C. F. Codella, D. Gutman, M. E. Celebi, B. Helba, M. A. Marchetti, S. W. Dusza, A. Kalloo, K. Liopyris, N. Mishra, H. Kittler, and A. Halpern, “Skin Lesion Analysis Toward Melanoma Detection: A Challenge at the 2017 International Symposium on Biomedical Imaging (ISBI), Hosted by the International Skin Imaging Collaboration (ISIC).” <https://arxiv.org/abs/1710.05006>, 2017.
- [3] D. Gutman, N. C. F. Codella, M. E. Celebi, B. Helba, M. Marchetti, N. Mishra, and A. Halpern, “Skin Lesion Analysis Toward Melanoma Detection: A Challenge at the International Symposium on Biomedical Imaging (ISBI) 2016, hosted by the International Skin Imaging Collaboration (ISIC).” <http://arxiv.org/abs/1605.01397>, 2016.
- [4] N. K. Mishra and M. E. Celebi, “An Overview of Melanoma Detection in Dermoscopy Images Using Image Processing and Machine Learning.” <https://arxiv.org/abs/1601.07843>, 2016.

Teaching Experience

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CSCI 1300 (Introduction to Computing), *Undergraduate*

CSCI 4372/5372/6397 (Data Clustering), *Undergraduate/Graduate*

CSCI 4360 (Special Topics: Discrete Mathematics), *Undergraduate*

CSCI 6395 (Independent Study), *Graduate*

CSCI 6V99 (Master’s Thesis), *Graduate*

Louisiana State University in Shreveport

CSC 101 (Introduction to the Internet), *Undergraduate*

CSC 111 (Introduction to Computing), *Undergraduate*

CSC 115 (Computer Literacy), *Undergraduate*

CSC 135 (Object-Oriented Programming I), *Undergraduate*

CSC 145 (Object-Oriented Programming II), *Undergraduate*

CSC 242 (Computer Organization and Architecture), *Undergraduate*

CSC 315 (Introduction to Database Systems), *Undergraduate*

CSC 490/690 (Digital Image Processing and Analysis), *Undergraduate/Graduate*

CSC 490/690 (Data Clustering), *Undergraduate/Graduate*

CSC 490/690 (Algorithms), *Undergraduate/Graduate*

CSC 495 (Independent Study), *Undergraduate*

CSC 695 (Independent Study), *Graduate*

CST 707 (Data Modeling and Database Design), *Graduate*

CST 725 (Digital Multimedia), *Graduate*

CST 790 (Digital Image Processing and Analysis), *Graduate*

CST 790 (Algorithms), *Graduate*

CST 796 (Business Systems Project), *Graduate*

CST 798 (Computer Science Project), Graduate

University of Bridgeport

CPSC 502 (Analysis of Algorithms), Graduate

CPSC 503 (Operating Systems), Graduate

Professional Activities

Book Series Editor

- Signals and Communication Technology, Springer [2019 – Present]
- Unsupervised and Semi-Supervised Learning, Springer [2017 – Present]
- Signal Processing for Security Technologies, Springer [2015 – 2019]

Journal Editorial Board Member

- Computers in Biology and Medicine (Elsevier) [2020 – 2023]
- Expert Systems with Applications (Elsevier) [2022 – 2023]
- Journal of Medical Imaging (SPIE) [2020 – 2023]
- IEEE Journal of Biomedical and Health Informatics (IEEE) [2020 – 2022]
- IEEE Access (IEEE) [2019 – 2022]
- Journal of Electronic Imaging (SPIE) [2019 – 2023]
- Journal of Real-Time Image Processing (Springer) [2013 – 2023]
- Imaging Science Journal (Taylor & Francis) [2009 – Present]

Journal Guest Editor (14)

- Computer Methods and Programs in Biomedicine special issue on *Image Analysis in Advanced Skin Imaging Technology* (2023)
- IEEE Journal of Biomedical and Health Informatics special issue on *Skin Image Analysis in the Age of Deep Learning* (2023)
- Information Processing & Management special issue on *Multi-Modal Computing for Biomedical Diagnosis and Analysis* (2022)
- Medical Image Analysis special issue on *Image Analysis in Dermatology* (2022)
- IEEE Journal of Biomedical and Health Informatics special issue on *Emerging Challenges for Deep Learning* (2020)
- ACM Transactions on Multimedia Computing, Communications, and Applications special issue on *Multimodal Machine Learning for Human Behavior Analysis* (2020)
- Journal of Real-Time Image Processing special issue on *Advances in Deep Learning for Real-Time Image Reconstruction* (2020)
- Neural Computing and Applications special issue on *Deep Learning Approaches for Real-Time Image Super-Resolution* (2020)
- IEEE Journal of Biomedical and Health Informatics special issue on *Skin Lesion Image Analysis for Melanoma Detection* (2019)
- Journal of Electronic Imaging special issue on *Image and Video Analysis, Detection, and Recognition* (2018)
- Journal of Electronic Imaging special issue on *Superpixels for Image Processing and Computer Vision* (2017)
- Journal of Real-Time Image Processing special issue on *Real-Time Color Image Processing* (2013)
- EURASIP Journal on Advances in Signal Processing special issue on *Multispectral and Hyperspectral Image and Video Processing* (2012)
- Computerized Medical Imaging and Graphics special issue on *Skin Cancer Image Analysis* (2011)

Tutorial Presenter (3)

- “Early Color Image Processing,” 14th IASTED Int. Conf. on Signal and Image Processing (*SIP 2012*)
- “A Whirlwind Tour of Color Image Processing,” The 2012 IAENG Int. Conf. on Imaging Engineering (*ICIE 2012*)
- “Fundamentals of Color Image Processing,” 13th IASTED Int. Conf. on Signal and Image Processing (*SIP 2011*)

Challenge Organizer (5)

- Skin Lesion Analysis Towards Melanoma Detection, 23rd Int. Conf. on Medical Image Computing & Computer Assisted Intervention (*MICCAI 2020*)
- Skin Lesion Analysis Towards Melanoma Detection, 22nd Int. Conf. on Medical Image Computing & Computer Assisted Intervention (*MICCAI 2019*)
- Skin Lesion Analysis Towards Melanoma Detection, 21st Int. Conf. on Medical Image Computing & Computer Assisted Intervention (*MICCAI 2018*)
- Skin Lesion Analysis Towards Melanoma Detection, 2017 IEEE 14th Int. Symp. on Biomedical Imaging (*ISBI 2017*)
- Skin Lesion Analysis Towards Melanoma Detection, 2016 IEEE 13th Int. Symp. on Biomedical Imaging (*ISBI 2016*)

Special Session/Workshop Organizer (19)

- Skin Image Analysis, 27th Int. Conf. on Medical Image Computing & Computer Assisted Intervention (*MICCAI 2024*)
- Skin Image Analysis, 26th Int. Conf. on Medical Image Computing & Computer Assisted Intervention (*MICCAI 2023*)
- Skin Image Analysis, 17th European Conference on Computer Vision (*ECCV 2022*)
- Skin Image Analysis, 2021 IEEE/CVF Conf. on Computer Vision and Pattern Recognition (*CVPR 2021*)
- Skin Image Analysis, 2020 IEEE/CVF Conf. on Computer Vision and Pattern Recognition (*CVPR 2020*)
- Skin Image Analysis, 2019 IEEE/CVF Conf. on Computer Vision and Pattern Recognition (*CVPR 2019*)
- Skin Image Analysis, 21st Int. Conf. on Medical Image Computing & Computer Assisted Intervention (*MICCAI 2018*)
- Computer Vision Based Measurements, 2016 IEEE Int. Conf. on Imaging Systems (*IST 2016*)
- Third IEEE Int. Ph.D. Workshop on Multimedia Computing Research, IEEE Int. Symp. on Multimedia (*ISM 2014*)
- Second IEEE Int. Ph.D. Workshop on Multimedia Computing Research, IEEE Int. Symp. on Multimedia (*ISM 2013*)
- Digital Imaging in Cultural Heritage, 8th Int. Symp. on Image and Signal Processing and Analysis (*ISPA 2013*)
- Ph.D. Workshop on Multimedia Computing Research, IEEE Int. Symp. on Multimedia (*ISM 2012*)
- 3rd Int. Workshop on Soft Computing in Image Processing and Computer Vision, 2011 Int. Conf. on Image Processing, Computer Vision, and Pattern Recognition (*IPCV 2011*)
- Special Session on Low-Level Color Image Processing, 16th Int. Conf. on Image Analysis and Processing (*ICIAP 2011*)
- Special Session on Low-Level Color Image Processing, 6th Int. Symp. on Visual Computing (*ISVC 2010*)
- Special Session on Low-Level Color Image Processing, 2009 APSIPA Ann. Summit and Conf. (*APSIPA ASC 2009*)
- Special Session on Digital Imaging in Cultural Heritage, 16th IEEE Int. Conf. on Image Processing (*ICIP 2009*)
- 2nd Int. Workshop on Computational Intelligence in Medical Imaging, 9th Int. Conf. on Information Technology and Applications in Biomedicine (*ITAB 2009*)
- 1st Int. Workshop on Computational Intelligence in Medical Imaging, 5th Int. Conf. on Soft Computing as Transdisciplinary Science and Technology (*CSTST 2008*)

Program Committee Member (selected from 130+)

- SPIE Conf. on Real-Time Image Processing and Deep Learning 2023
- SPIE Conf. on Real-Time Image Processing and Deep Learning 2022
- SPIE Conf. on Real-Time Image Processing and Deep Learning 2021
- SPIE Conf. on Real-Time Image Processing and Deep Learning 2020
- 32nd Int. FLAIRS Conf. (*FLAIRS-32*)
- SPIE Conf. on Real-Time Image Processing and Deep Learning 2019
- IEEE Int. Symp. on Multimedia (*ISM 2018*)
- 31st Int. FLAIRS Conf. (*FLAIRS-31*)
- 32nd Ann. ACM Symp. on Applied Computing (*ACM SAC 2017*)
- 30th Int. FLAIRS Conf. (*FLAIRS-30*)
- Advanced Concepts for Intelligent Vision Systems (*ACIVS 2016*)
- IEEE Int. Conf. on Systems, Man, and Cybernetics (*IEEE SMC 2016*)
- 12th World Cong. on Intelligent Control and Automation (*WCICA 2016*)
- 10th Int. Conf. on Semantic Computing (*ICSC 2016*)
- 2nd IEEE Int. Conf. on Multimedia Big Data (*BigMM 2016*)
- 29th Int. FLAIRS Conf. (*FLAIRS-29*)
- 31st Ann. ACM Symp. on Applied Computing (*ACM SAC 2016*)
- 11th Int. Conf. on Computer Vision Theory and Applications (*VISAPP 2016*)
- 11th Int. Conf. on Signal Image Technology and Internet Based Systems (*SITIS 2015*)
- 2nd MICCAI Workshop on Bio-Imaging and Visualization for Patient-Customized Simulations (*MW-BIVPCS 2015*)
- 1st MICCAI Workshop on Deep Learning in Medical Image Analysis (*DLMIA 2015*)
- Computer Methods in Biomechanics and Biomedical Engineering (*CMBBE 2015*)
- Advanced Concepts for Intelligent Vision Systems (*ACIVS 2015*)
- 1st IEEE Int. Conf. on Multimedia Big Data (*BigMM 2015*)
- 28th Int. FLAIRS Conf. (*FLAIRS-28*)
- 30th Ann. ACM Symp. on Applied Computing (*ACM SAC 2015*)
- 10th Int. Conf. on Computer Vision Theory and Applications (*VISAPP 2015*)
- 10th Int. Conf. on Signal Image Technology and Internet Based Systems (*SITIS 2014*)
- IEEE Int. Symp. on Multimedia (*ISM 2014*)
- Int. Conf. on Computer Vision and Graphics (*ICCVG 2014*)
- IEEE Int. Conf. on Systems, Man, and Cybernetics (*IEEE SMC 2014*)
- 2014 Int. Conf. on Brain Informatics and Health (*BIH 2014*)
- 27th Int. FLAIRS Conf. (*FLAIRS-27*)
- 29th Ann. ACM Symp. on Applied Computing (*ACM SAC 2014*)
- 9th Int. Conf. on Computer Vision Theory and Applications (*VISAPP 2014*)
- Int. Conf. on Computational and Experimental Biomedical Sciences (*ICCEBS 2013*)
- 9th Int. Conf. on Signal Image Technology and Internet Based Systems (*SITIS 2013*)
- MICCAI 2013 Workshop on Bio-Imaging and Visualization for Patient-Customized Simulations (*MW-BIVPCS 2013*)
- 4th Int. Conf. on Intelligent Control and Information Processing (*ICICIP 2013*)
- Int. Conf. on Medical Imaging Using Bio-Inspired and Soft Computing (*MIBISOC 2013*)
- 26th Int. FLAIRS Conf. (*FLAIRS-26*)

- 8th Int. Conf. on Computer Vision Theory and Applications (*VISAPP 2013*)
- 28th Ann. ACM Symp. on Applied Computing (*ACM SAC 2013*)
- SPIE 2013 Conf. on Real-Time Image and Video Processing (*RTIVP 2013*)
- 8th Int. Conf. on Signal Image Technology and Internet Based Systems (*SITIS 2012*)
- 7th Iberian Conf. on Information Systems and Technologies (*CISTI 2012*)
- 9th Int. Symp. on Neural Networks (*ISNN 2012*)
- IET Image Processing Conf. 2012 (*IPR 2012*)
- 7th Int. Conf. on Computer Vision Theory and Applications (*VISAPP 2012*)
- 27th Ann. ACM Symp. on Applied Computing (*ACM SAC 2012*)
- 5th Int. Conf. on Image and Signal Processing (*ICISP 2012*)
- 7th Int. Conf. on Signal Image Technology and Internet Based Systems (*SITIS 2011*)
- IEEE Int. Workshop on Video Panorama (*IWVP 2011*)
- 6th Int. Conf. on Computer Vision Theory and Applications (*VISAPP 2011*)
- 8th Int. Symp. on Neural Networks (*ISNN 2011*)
- 16th Int. Conf. on Image Analysis and Processing (*ICIAP 2011*)
- 26th Ann. ACM Symp. on Applied Computing (*ACM SAC 2011*)
- 6th Int. Conf. on Signal-Image Technology and Internet-Based Systems (*SITIS 2010*)
- 6th Int. Conf. on Technology and Medical Sciences (*TMSi 2010*)
- 2010 IEEE Int. Conf. on Fuzzy Systems (*FUZZ-IEEE 2010*)
- 2010 IEEE Cong. on Evolutionary Computation (*IEEE CEC 2010*)
- 4th Int. Conf. on Image and Signal Processing (*ICISP 2010*)
- 5th Int. Conf. on Computer Vision Theory and Applications (*VISAPP 2010*)
- 5th Int. Conf. on Signal-Image Technology and Internet-Based Systems (*SITIS 2009*)
- 13th Int. Fuzzy Systems Association World Cong. (*IFSA 2009*)
- 6th Int. Symp. on Neural Networks (*ISNN 2009*)
- 4th Int. Conf. on Computer Vision Theory and Applications (*VISAPP 2009*)
- 4th Int. Symp. on Visual Computing (*ISVC 2008*)
- 2nd IEEE Int. Conf. on Semantic Computing (*ICSC 2008*)

Journal Reviewer (selected from 120+)

- ACM Transactions on Multimedia Computing, Communications, and Applications (ACM)
- Advances in Knowledge Discovery and Management (Springer)
- Applied Artificial Intelligence (Taylor & Francis)
- Applied Optics (OSA)
- Applied Soft Computing (Elsevier)
- Applied Computing and Informatics (Elsevier)
- Artificial Intelligence in Medicine (Elsevier)
- Artificial Intelligence Review (Springer)
- Biocybernetics and Biomedical Engineering (Elsevier)
- BioMedical Engineering OnLine (Springer)
- Biomedical Optics Express (OSA)
- Biomedical Signal Processing and Control (Elsevier)
- BMC Bioinformatics (BMC)
- Communications in Statistics - Simulation and Computation (Taylor & Francis)

- Computer Methods and Programs in Biomedicine (Elsevier)
- Computer Vision and Image Understanding (Elsevier)
- Computerized Medical Imaging and Graphics (Elsevier)
- Computers and Electrical Engineering (Elsevier)
- Computers in Biology and Medicine (Elsevier)
- Concurrency and Computation: Practice and Experience (Wiley)
- Cybernetics and Systems (Taylor & Francis)
- Data Mining and Knowledge Discovery (Springer)
- Digital Signal Processing (Elsevier)
- Displays (Elsevier)
- EBioMedicine (The Lancet)
- Engineering Applications of Artificial Intelligence (Elsevier)
- EURASIP Journal on Advances in Signal Processing (Springer)
- EURASIP Journal on Image and Video Processing (Springer)
- Expert Systems with Applications (Elsevier)
- Heritage Science (Springer)
- IBM Journal of Research and Development (IBM)
- IEEE Access (IEEE)
- IEEE Journal of Biomedical and Health Informatics (IEEE)
- IEEE Journal of Translational Engineering in Health and Medicine (IEEE)
- IEEE Signal Processing Letters (IEEE)
- IEEE Transactions on Biomedical Engineering (IEEE)
- IEEE Transactions on Circuits and Systems for Video Technology (IEEE)
- IEEE Transactions on Cybernetics (IEEE)
- IEEE Transactions on Image Processing (IEEE)
- IEEE Transactions on Information Technology in Biomedicine (IEEE)
- IEEE Transactions on Instrumentation and Measurement (IEEE)
- IEEE Transactions on Knowledge and Data Engineering (IEEE)
- IEEE Transactions on Medical Imaging (IEEE)
- IEEE Transactions on Multimedia (IEEE)
- IEEE Transactions on Signal Processing (IEEE)
- IEEE Transactions on Systems, Man, and Cybernetics Part A (IEEE)
- IEEE Transactions on Systems, Man, and Cybernetics Part B (IEEE)
- IET Computer Vision (Wiley)
- IET Image Processing (Wiley)
- IET Science, Measurement & Technology (Wiley)
- Image and Vision Computing (Elsevier)
- Informatics in Medicine Unlocked (Elsevier)
- Information Sciences (Elsevier)
- Int. Journal of Adaptive Control and Signal Processing (Wiley)
- Int. Journal of Computer Mathematics (Taylor & Francis)
- Int. Journal of Computers and Applications (Taylor & Francis)
- Int. Journal of Image and Graphics (World Scientific)

- Int. Journal of Adaptive Control and Signal Processing (Wiley)
- Int. Journal of Imaging Systems and Technology (Wiley)
- Int. Journal of Information Technology and Decision Making (World Scientific)
- Int. Journal of Pattern Recognition and Artificial Intelligence (World Scientific)
- Int. Journal on Artificial Intelligence Tools (World Scientific)
- Inverse Problems in Science and Engineering (Taylor & Francis)
- Journal of Classification (Springer)
- Journal of Digital Imaging (Springer)
- Journal of Electronic Imaging (SPIE)
- Journal of Food Process Engineering (Wiley)
- Journal of Machine Learning Research
- Journal of Mathematical Imaging and Vision (Springer)
- Journal of Medical Imaging (SPIE)
- Journal of Medical Systems (Springer)
- Journal of Real-Time Image Processing (Springer)
- Journal of the European Academy of Dermatology and Venereology (Wiley)
- Journal of the Optical Society of America A (OSA)
- Journal of Visual Communication and Image Representation (Elsevier)
- Knowledge-Based Systems (Elsevier)
- Machine Vision and Applications (Springer)
- Medical & Biological Engineering & Computing (Springer)
- Medical Engineering & Physics (Elsevier)
- Medical Image Analysis (Elsevier)
- Melanoma Research (Wolters Kluwer)
- Multidimensional Systems and Signal Processing (Springer)
- Multimedia Tools and Applications (Springer)
- Neural Computing and Applications (Springer)
- Neurocomputing (Elsevier)
- NeuroImage: Reports (Elsevier)
- New England Journal of Medicine
- Optical Engineering (SPIE)
- Optics Letters (OSA)
- Opto-Electronics Review (Elsevier)
- Pattern Recognition (Elsevier)
- Pattern Recognition Letters (Elsevier)
- Physical Review E (APS)
- PLOS ONE (PLOS)
- Progress in Artificial Intelligence (Springer)
- Scientific Reports (Nature)
- Sensing and Imaging (Springer)
- Signal, Image and Video Processing (Springer)
- Signal Processing: Image Communication (Elsevier)
- Skin Health and Disease (Wiley)

- Skin Research and Technology (Wiley)
- SN Computer Science (Springer)
- Soft Computing (Springer)
- Statistical Analysis and Data Mining (Wiley)
- Statistical Methods and Applications (Springer)
- The Imaging Science Journal (Taylor & Francis)

Conference Reviewer (selected from 120+)

- 2019 IEEE Conf. on Computer Vision and Pattern Recognition (*CVPR 2019*)
- 14th Asian Conf. on Computer Vision (*ACCV 2018*)
- 15th European Conf. on Computer Vision (*ECCV 2018*)
- 24th Int. Conf. on Pattern Recognition (*ICPR 2018*)
- 2018 IEEE Conf. on Computer Vision and Pattern Recognition (*CVPR 2018*)
- 19th Int. Conf. on Image Analysis and Processing (*ICIAP 2017*)
- 23rd IEEE Int. Conf. on Image Processing (*ICIP 2016*)
- 14th European Conf. on Computer Vision (*ECCV 2016*)
- 23rd Int. Conf. on Pattern Recognition (*ICPR 2016*)
- 2016 IEEE Int. Conf. on Robotics and Automation (*ICRA 2016*)
- 2016 IEEE Conf. on Computer Vision and Pattern Recognition (*CVPR 2016*)
- 2016 IEEE Int. Conf. on Fuzzy Systems (*FUZZ-IEEE 2016*)
- 22nd IEEE Int. Conf. on Image Processing (*ICIP 2015*)
- 2015 IEEE Int. Conf. on Computer Vision (*ICCV 2015*)
- 37th Ann. Int. Conf. of the IEEE EMBS (*EMBC 2015*)
- 2015 IEEE Int. Conf. on Fuzzy Systems (*FUZZ-IEEE 2015*)
- Int. Symp. on Intelligent Systems Technologies and Applications (*ISTA 2015*)
- 2015 IEEE Conf. on Computer Vision and Pattern Recognition (*CVPR 2015*)
- 2014 IEEE Symp. Series on Computational Intelligence (*SSCI 2014*)
- 36th Ann. Int. Conf. of the IEEE EMBS (*EMBC 2014*)
- IEEE EMBS Int. Conf. on Biomedical and Health Informatics (*BHI 2014*)
- 21st IEEE Int. Conf. on Image Processing (*ICIP 2014*)
- 27th IEEE Conf. on Computer Vision and Pattern Recognition (*CVPR 2014*)
- IEEE EMBS Special Topic Conf. on Healthcare Innovation and Point-of-Care Technologies (*HIC-POCT 2014*)
- 22nd Int. Conf. on Pattern Recognition (*ICPR 2014*)
- 20th IEEE Int. Conf. on Image Processing (*ICIP 2013*)
- 39th Ann. Conf. of the IEEE Industrial Electronics Society (*IECON 2013*)
- 16th Int. Conf. on Medical Image Computing and Computer Assisted Intervention (*MICCAI 2013*)
- 35th Ann. Int. Conf. of the IEEE EMBS (*EMBC 2013*)
- 2013 IEEE Int. Conf. on Fuzzy Systems (*FUZZ-IEEE 2013*)
- 2012 IEEE Student Conf. on Research and Development (*SCORED 2012*)
- 15th Int. Conf. on Medical Image Computing and Computer Assisted Intervention (*MICCAI 2012*)
- 34th Ann. Int. Conf. of the IEEE EMBS (*EMBC 2012*)
- 2012 IEEE Int. Conf. on Fuzzy Systems (*FUZZ-IEEE 2012*)
- 19th Int. Conf. on Systems, Signals and Image Processing (*IWSSIP 2012*)

- 2012 IEEE Int. Conf. on Robotics and Automation (*ICRA 2012*)
- 19th IEEE Int. Conf. on Image Processing (*ICIP 2012*)
- ACM Multimedia 2011 (*ACM MM 2011*)
- 6th Int. Conf. on Image and Graphics (*ICIG 2011*)
- 7th Int. Symp. on Visual Computing (*ISVC 2011*)
- 33rd Ann. Int. Conf. of the IEEE EMBS (*EMBC 2011*)
- 19th European Signal Processing Conf. (*EUSIPCO 2011*)
- 2011 IEEE Cong. on Evolutionary Computation (*IEEE CEC 2011*)
- 18th IEEE Int. Conf. on Image Processing (*ICIP 2011*)
- 2011 IEEE Int. Conf. on Fuzzy Systems (*FUZZ-IEEE 2011*)
- 17th IEEE Int. Conf. on Image Processing (*ICIP 2010*)
- 32nd Ann. Int. Conf. of the IEEE EMBS (*EMBC 2010*)
- 25th Ann. ACM Symp. on Applied Computing (*ACM SAC 2010*)
- 16th IEEE Int. Conf. on Image Processing (*ICIP 2009*)
- 9th Int. Conf. on Intelligence Systems Design and Applications (*ISDA 2009*)
- 19th Int. Conf. on Artificial Neural Networks (*ICANN 2009*)
- 31st Ann. Int. IEEE EMBS Conf. (*EMBC 2009*)
- 2009 Int. Conf. on Advances in Social Networks Analysis and Mining (*ASONAM 2009*)
- 13th Pacific-Asia Conf. on Knowledge Discovery and Data Mining (*PAKDD 2009*)
- 23rd Ann. ACM Symp. on Applied Computing (*ACM SAC 2008*)
- 15th European Signal Processing Conf. (*EUSIPCO 2007*)

External Reviewer (Grant Applications)

- A*STAR: Agency for Science, Technology and Research (Singapore)
- FCT: Foundation for Science and Technology (Portugal)
- HHS: Department of Health and Human Services (USA)
- Mitacs (Canada)
- NSERC: Natural Sciences and Engineering Research Council of Canada (Canada)
- NSF: National Science Foundation (USA)
- NWO: Dutch Research Council (The Netherlands)

External Reviewer (Tenure & Promotion Applications)

- American University in Cairo (Cairo, Egypt)
- Auburn University at Montgomery (Montgomery, AL, USA)
- Baylor University (Waco, TX, USA)
- College of Staten Island (Staten Island, NY, USA)
- Kennesaw State University (Kennesaw, GA, USA)
- National Textile University (Faisalabad, PB, Pakistan)
- University of British Columbia (Vancouver, BC, Canada)
- University of Houston (Houston, TX, USA)
- University of Houston-Clear Lake (Pasadena and Houston, TX, USA)
- University of Lisbon (Lisbon, Portugal)
- University of Michigan-Flint (Flint, MI, USA)
- University of Texas at Arlington (Arlington, TX, USA)
- University of Waterloo (Waterloo, ON, Canada)

- Wichita State University (Wichita, KS, USA)

External Examiner (Ph.D. Dissertations)

- Nourhan Bayasi, Beyond Catastrophic Forgetting: Advancing Continual Learning for Robust and Fair Medical Imaging, University of British Columbia, Canada (2025)
- Skyler Thompson, Engineering a Scalable Deep k -Means Algorithm on Spark And TensorFlow, University of Arkansas at Little Rock, USA (2022)
- Yuheng Wang, Computer-Aided Diagnosis of Skin Cancer with Deep Learning, University of British Columbia, Canada (2022)
- Sami Sieranoja, Clustering with k -NN Graph and k -Means, University of Eastern Finland, Finland (2020)
- Jeremy Kawahara, Diagnosing Skin Lesions from Images with Convolutional Neural Networks, Simon Fraser University, Canada (2019)
- Pegah Kharazmi, Automated Analysis of Vascular Structures of Skin Lesions: Segmentation, Pattern Recognition and Computer-Aided Diagnosis, University of British Columbia, Canada (2018)
- Catarina Barata, Automatic Detection of Melanomas Using Dermoscopy Images, University of Lisbon, Portugal (2017) [co-supervisor]
- Mohammed Ali Eltaher, Social User Mining: User Profiling of Social Media Network Based on Multimedia Data Mining, University of Bridgeport, USA (2015)
- Francesco Peruch, (Semi)-Automated Analysis of Melanocytic Lesions, University of Padova, Italy (2015)
- Hengameh Mirzaalian, Computational Techniques for Skin Lesion Tracking and Classification, Simon Fraser University, Canada (2014)
- Mantosh Biswas, Study and Development of Image Denoising Techniques, Indian School of Mines, India (2013)
- Pablo Gauterio Cavalcanti, Automated Prescreening of Melanocytic Skin Lesions Using Standard Camera Images, Universidade Federal do Rio Grande do Sul, Brazil (2013)
- Maryam Sadeghi, Towards Prevention and Early Diagnosis of Skin Cancer: Computer-Aided Analysis of Dermoscopy Images, Simon Fraser University, Canada (2012)
- Radi Jarrar, On the Use of Visual Conceptual Information for the Indexing and Retrieval of the Image Regions, Monash University, Malaysia (2012)
- Paul Wighton, Towards Automated Skin Lesion Diagnosis, Simon Fraser University, Canada (2011)

Miscellaneous

- Keynote Speaker, “Two Decades of Research in Dermoscopy Image Analysis,” 25th Iberoamerican Cong. on Pattern Recognition (*CIARP 2021*)
- Keynote Speaker, “Data Clustering and the k -Means Algorithm,” Workshop on Machine Learning, Deep Learning, and Computational Intelligence for Wireless Communication (*MDCWC 2020*)
- Area Chair, “Image Formation and Preprocessing,” 14th Int. Conf. on Computer Vision Theory and Applications (*VISAPP 2019*)
- Area Chair, “Image Analysis, Detection and Recognition,” 19th Int. Conf. on Image Analysis and Processing (*ICIAP 2017*)
- Area Chair, “Image Formation and Preprocessing,” 12th Int. Conf. on Computer Vision Theory and Applications (*VISAPP 2017*)
- Lecturer, 1st AIDPATH Summer School on Stereology and Image Processing in Digital Pathology, Vilnius, Lithuania, Sep. 7–11 2015
- Area Chair, “Image Formation and Preprocessing,” 10th Int. Conf. on Computer Vision Theory and Applications (*VISAPP 2015*)
- Judge (Poster Session), 27th Int. FLAIRS Conf. (*FLAIRS-27*)
- Session Chair (General Track, Algorithms), 27th Int. FLAIRS Conf. (*FLAIRS-27*)

- Session Chair (Computer Vision I), 10th Int. Conf. on Electronics, Computer and Computation (*ICECCO 2013*)
- Publicity Chair, 10th IASTED Int. Conf. on Signal Processing, Pattern Recognition and Applications (*SPPRA 2013*)
- Keynote Speaker, “Dermoscopy Image Analysis: Advances and Prospects,” 14th IASTED Int. Conf. on Signal and Image Processing (*SIP 2012*)
- Session Chair (IMECS Keynote Speech I & II), 2012 IAENG Int. Conf. on Imaging Engineering (*ICIE 2012*)
- Session Chair (Multi-Frame Image Registration), 17th IEEE Int. Conf. on Image Processing (*ICIP 2010*)
- Session Chair (Color Acquisition and Processing II), 16th IEEE Int. Conf. on Image Processing (*ICIP 2009*)

Member

- Institute of Electrical and Electronics Engineers (IEEE) [Senior Member, 2011]
- International Society for Optics and Photonics (SPIE) [Fellow, 2021; Senior Member, 2011]
- Technology Working Group of the International Skin Imaging Collaboration (ISIC) [Member, 2016]

Invited Speaker

- “Deep Learning Revolution in Dermoscopy Image Analysis,” Dept. of Signal Processing and Communications, University of Seville, Seville, Spain, Oct 2024
- “Deep Learning Revolution in Dermoscopy Image Analysis,” Dept. of Computer Science and Numerical Analysis, University of Cordoba, Cordoba, Spain, Oct 2024
- “Dermoscopy Image Analysis: Classical Computer Vision/Machine Learning vs. Deep Learning,” Dept. of Computer Science, University of Alabama, Tuscaloosa, AL, Apr 2024
- “Dermoscopy Image Analysis: Past and Present,” Dept. of Computer Science, Rice University, Houston, TX, Jan 2024
- “Where NOT to Publish Your Research,” Office of Research and Sponsored Programs, University of Central Arkansas, Conway, AR, Mar 2023
- “Computer-Aided Diagnosis of Melanoma Using Artificial Intelligence,” Math Awareness Week, Dept. of Mathematics, Palm Beach State College, Lake Worth, FL, Apr 2022 (Virtual)
- “What Does Deep Learning Promise for Dermoscopy Image Analysis?,” 16th Graduate/Computing Workshop (WPOS/WCOMP 2021), Dept. of Computer Science, University of Brasilia, Brasilia, Brazil, Sep 2021 (Virtual)
- “Dermoscopy Image Analysis in the Age of Deep Learning,” Photonics in Dermatology and Plastic Surgery 2021, San Francisco, CA, Mar 2021
- “Threshold Fusion for Lesion Border Detection in Dermoscopy Images,” Dept. of Systems Design Engineering, University of Waterloo, Waterloo, ON, Canada, May 2018
- “Lesion Border Detection in Dermoscopy Images,” Third Annual Southern Dermatology Research Consortium, University of Arkansas for Medical Sciences, Little Rock, AR, Apr 2018
- “Hierarchical Initialization for k -Means Clustering,” Dept. of Signal Processing and Communications, University of Seville, Seville, Spain, Sep 2017
- “Efficient, Effective, and Reliable Lesion Border Detection in Dermoscopy Images,” Dept. of Signal Processing and Communications, University of Seville, Seville, Spain, Sep 2017
- “Eluding Local Minima in k -Means Clustering Using Hierarchical Initialization,” Dept. of Computer Science, Baylor University, Waco, TX, Mar 2017
- “Dermoscopy Image Analysis,” Dept. of Computer Science and Information Systems, Bradley University, Peoria, IL, Jun 2015
- “Dermoscopy Image Analysis,” Dept. of Computer Science and Information Systems, Texas A&M University, Commerce, TX, Apr 2015
- “An Introduction to Dermoscopy Image Analysis,” Dept. of Computer Science and Media Technology, Gjøvik University College, Gjøvik, Norway, Feb 2015

- “An Introduction to Color Image Filtering,” Dept. of Computer Science and Media Technology, Gjøvik University College, Gjøvik, Norway, Feb 2015
- “Dermoscopy Image Analysis,” Dept. of Computer Science & Engineering Technology, University of Houston-Downtown, Houston, TX, Feb 2015
- “Algorithms for Dermoscopy Image Analysis,” Dept. of Computer Science, Sonoma State University, Rohnert Park, CA, Dec 2014
- “Progress in Melanoma Diagnosis Based on Dermoscopy Image Analysis,” Dept. of Dermatology and Skin Science, University of British Columbia, Vancouver, BC, Canada, Nov 2014
- “Advances in the Computer-Aided Diagnosis of Melanoma Based on Dermoscopy Image Analysis,” School of Computing Science, Simon Fraser University, Burnaby, BC, Canada, Nov 2014
- “Computer-Aided Diagnosis of Melanoma Using Dermoscopy Image Analysis,” School of Engineering, University of Bridgeport, Bridgeport, CT, Oct 2014
- “Progress in Dermoscopy Image Analysis,” Dept. of Applied Mathematics, University of Porto, Porto, Portugal, Sep 2013
- “Border Detection: What Is New? How Close Are We to Solving This Problem?,” Third Quadrennial Automatic Skin Cancer Detection Symposium, Missouri University of Science and Technology, Rolla, MO, Aug 2013
- “Lesion Border Detection in Dermoscopy Images,” Dept. of Computer Science and Engineering, University of Bridgeport, Bridgeport, CT, Apr 2013
- “Academic Job Search 101,” IEEE International Symposium on Multimedia (*ISM 2012*), Irvine, CA, Dec 2012
- “The Joy of Image Processing and Industrial Vision,” Pilot Preview Day, Louisiana State University, Shreveport, LA, Apr 2012
- “Advances in Dermoscopy Image Analysis,” School of Computer Science and Engineering, University of Electronic Science and Technology of China, Chengdu, P.R. China, May 2011
- “Enhancing Teaching Performance,” Dept. of Computer Science, North American College, Houston, TX, Apr 2011
- “Discovering Image Processing and Machine Vision,” Pilot Preview Day, Louisiana State University, Shreveport, LA, Nov 2010
- “Skin Lesion Localization and Contrast Enhancement in Dermoscopy Images,” Faculty of Computers and Information, Cairo University, Cairo, Egypt, Nov 2009
- “Approximate Lesion Localization in Dermoscopy Images,” Second Quadrennial Cutaneous S&T Imaging Conference, Missouri University of Science and Technology, Rolla, MO, Aug 2009
- “Fast and Effective Color Reduction Using k -Means Clustering,” College of Sciences Symposium Series, Louisiana State University, Shreveport, LA, Apr 2009
- “Computer-Aided Diagnosis of Melanoma,” Dept. of Dermatology, Ege University, Izmir, Turkey, Mar 2009
- “Numerical Approximations in Color Image Processing,” Dept. of Mathematics, Wayne State University, Detroit, MI, Nov 2008
- “Dermoscopy Image Analysis,” Louisiana Board of Regents, Louisiana State University, Shreveport, LA, Mar 2008
- “Insight into Academic Job Search,” The Institute of Academic Studies, Dallas, TX, Nov 2007
- “Development of Algorithms for Dermoscopy Image Analysis,” Bioinformatics Affinity Group, Louisiana State University Health Sciences Center, Shreveport, LA, Oct 2007
- “Visual Computing 101,” CSI-LSUS Program for High School Students, Louisiana State University, Shreveport, LA, Jul 2007
- “Development of Algorithms for Dermoscopy Image Analysis,” Dept. of Computer Science and Engineering, University of Bridgeport, Bridgeport, CT, Mar 2007
- “Automatic Border Detection in Dermoscopy Images,” Dept. of Electrical and Computer Engineering, The University of Missouri, Rolla, MO, Jul 2005

Honors, Awards, Certificates

- *Outstanding Reviewer*, Computers in Biology and Medicine (Mar 2017)
- *Outstanding Reviewer*, Pattern Recognition (Jan 2017)
- *Best Track Paper Award* at the 10th International Conference on Electronics, Computer and Computation (ICECCO 2013), Ankara, Turkey (Nov 2013)
- Travel grant to attend the 6th Biennial CRA Career Mentoring Workshop (Feb 2010)
- LSUS *Learn to Teach Online Program Certificate* (May 2008)
- Oracle Certified Associate Database Administrator (Feb 2004)
- *Outstanding Research by a Masters Student* award from Lockheed Martin Aeronautics (Feb 2004)
- Silver medal in National Mathematics Competition, Ankara, Turkey (Jan 1997)

Software Development

- Software Page for NSF Award #1117457. Available at <http://code.google.com/p/nsf1117457/>
- Fourier: An open-source image processing and analysis library written in ANSI C. Available at <http://sourceforge.net/projects/fourier-ipal/>