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Education

Memorial Sloan Kettering Cancer Center
Senior Research Scientist — October 2016-

Memorial Sloan Kettering Cancer Center
Research Scholar — December 2014-October 2016

Memorial Sloan Kettering Cancer Center
Research Fellow — December 2012-December 2014

Bilkent University
Project Researcher — November 2012

Bilkent University
Ph.D. in Electrical and Electronics Engineering — August 2012
Thesis Topic: Signal and Image Processing Algorithms Using Interval Convex Programming and Sparsity

Bilkent University
M.Sc. in Electrical and Electronics Engineering — January 2007
Thesis Topic: 3D Model Compression Using Image Compression based Methods

Bilkent University
B.Sc. in Electrical and Electronics Engineering — June 2004

Professional Activity

Signal, Image and Video Processing-Springer
Associate Editor — August 2013 -

Turkish Telecom
Project Researcher — 2012
Ambient Assisted Living System Using Vibration and PIR Sensors

Turkish Academy of Science
Project Researcher — 2010-2012
Compressive Sensing using Entropy functional Based Methods project

European Union FP7
Project Researcher — 2010-2012
MIRACLE Project (Extracting 3D information from microscopic images)

European Union FP7
Project Researcher 2009- 2012
FIRESENSE project (Wildfire detection and propagation modeling)

European Union FP6
Project Researcher 2005-2008
3DTV (Compression of 3D mesh models using image compression methods)

Reviewer
IEEE Transactions on Image Processing 2014-

Reviewer
IEEE Signal Processing Letters 2014-

Reviewer
Journal of Electronic Imaging 2014-

Reviewer
International Conference on Acoustics, Speech and Signal Processing (ICASSP) 2013-

Reviewer
European Signal Processing Conference (Eusipco) 2014-

Reviewer
3DTV-Conference 2010-

Reviewer
Signal Processing and Communications Applications Conference (SIU) 2009-

Teaching Assistant
Bilkent University, EE Dept. 2006-2012
Digital Signal Processing and Advanced Signal Processing Course

System Administrator
Bilkent University, EE Dept. 2008-2012

Peer Reviewed Journal Publications

[J24] Rishpon A, NavarreteDechent C, Marghoob AA, Dusza SW., Isman G. **Kose K.**, Halpern AC., Marchetti MA., "Melanoma risk stratification of individuals with a highrisk naevus phenotypeA pilot study", Australasian Journal of Dermatology 2019

[J23] Flores E. Yelamos O., Cordova M., Kose K, Phillips W. Lee EH. Rossi A., Nehal K., Rajadhyaksha M. "Perioperative delineation of nonmelanoma skin cancer margins in vivo with handheld reflectance confocal microscopy and videomosaickin" Journal of the European Academy of Dermatology and Venereology, 2019

[J22] Yelamos O., Cordova M., Blank N., **Kose K.**, Duzsa S., Lee E., Rajadhyaksha M., Kishwer S.N., Rossi M. A., "Correlation of handheld reflectance confocal microscopy with radial video mosaicing for margin mapping of lentigo maligna and lentigo maligna melanoma", Vol. 153, Iss 12, pp. 1278-1284, 2017

[J21] **Kose K.**, Gou M., Yelamos O., Cordova M., Rossi A., Nehal KS., Flores ES., Camps O., Dy J., Brooks DH., Rajadhyaksha M., "Automated video-mosaicking approach for confocal microscopic imaging in vivo: an approach to address challenges in imaging living tissue and extend field of view", Vol.7, Iss 1, 2017

[J20] Yelamos O., Cordova M., Blank N.,**Kose K.**, Lee E., Rajadhyaksha M., "Margin Delineation of Lentigo Maligna Using Reflectance Confocal Microscopy Videomosaicking and Adhesive Paper Rings", Journal of American Academy of Dermatology, Vol. 76, Iss. 6, pp.AB166, 2017

[J19] Yelamos O., Hibler B., Cordova MA., Hollman TJ., **Kose K.**, Marchetti M., Myskowski P., Pulitzer MP., Rajadhyaksha M., Rossi AM., Jain M., "Handheld Reflectance Confocal Microscopy for the Detection of Recurrent Extramammary Paget Disease", JAMA Dermatol. Published online May 10, 2017

[J18] Gantha, S., Jordan, M., **Kose K.**, Brooks, D.H., Rajadhyaksha, M., Dy, J.G., A Marked Poisson Process Driven Latent Shape Model for 3D Segmentation of Reflectance Confocal Microscopy Image Stacks of Human Skin, IEEE Transactions on Image Processing, Vol. 26, Iss. 1, 2016

[J17] Bozkurt A., **Kose,K**, AlessiFox, C, Dy, J.G.,Brooks D.H.,Rajadhyaksha M., Unsupervised delineation of stratum corneum using reflectance confocal microscopy and spectral clustering, Skin Research and Technology, Early Access, August, 2016

[J16] Tofighi, M., Yorulmaz, O., **Kose, K.**, Yildirim, D.C., Cetin-Atalay, R., Cetin, A.E., Phase and TV Based Convex Sets for Blind Deconvolution of Microscopic Images, IEEE Journal of Selected Topics in Signal Processing, Vol. 10. Iss. 1,pp.81-91, 2016

[J15] Bajaj S., Marchetti M.A.,Navarrete-Dechen, C., Dusza S.W., **Kose K.**, Marghoob A. A.,The Role of Color and Morphologic Characteristics in Dermoscopic Diagnosis, JAMA Dermatology. Published online March 23, 2016.

[J14] Tofighi M, **Kose K.**, Cetin A. E., Denoising Images Corrupted by Impulsive Noise Using Projections onto Epigraph Set of the Total Variation Function (PES-TV), Signal Image and Video Processing, Published Online 30 October 2015.

[J13] Bajaj S., Dusza S.W., Marchetti M.A., Wu X., Fonseca M. **Kose K.** et al. Growth-Curve Modeling of Nevi With a Peripheral Globular Pattern. JAMA Dermatology 151(12):1338-1345, 2015

[J12] Flores, E.S., Cordova, M.,**Kose, K.**, et al; Intraoperative imaging during mohs surgery with reflectance confocal microscopy: initial clinical experience. J. Biomed. Opt. 0001;20(6):061103, February 2015.

[J11] **Kose, K.**, Atalay, C.R., Cetin, A.E., Special issue on microscopic image processing: Editorial, "Signal, Image and Video Processing", doi: 10.1007/s11760-014-0715-7, available online, November 2014.

[J10] Kurugol, S.*, **Kose, K.** *, Park, B., Dy, J.G., Brooks, D. H., Rajadhyaksha, M., Automated Delineation of Dermal-Epidermal Junction In Reflectance Confocal Microscopy Image Stacks Of Human Skin, 'Journal of Investigative Dermatology", Volume 135:3, Pages 710-717, March 2015. (*Shared first authorship)

[J9] **Kose, K.**, Cordova M., Duffy, M., Flores, E.S., Brooks, D.H., Rajadhyaksha, M., Video-Mosaicing of Reflectance Confocal Images For Examination of Extended Areas of Skin In Vivo, "British Journal of Dermatology", 171(5): 12391241, 2014

[J8] **Kose. K.**, Gunay, O., Cetin, A. E., Compressive sensing using the modified entropy functional, "Digital Signal Processing", Volume 24, Pages 6370, January 2014

[J7] Keskin, F., Suhre, A., **Kose, K.**, Ersahin, T., Cetin, A. E., Cetin-Atalay, R., Image Classification of Human Carcinoma Cells Using Complex Wavelet-Based Covariance Descriptors, "PLoS ONE", 8(1): e52807. doi:10.1371/journal.pone.0052807, 2013

[J6] Dimitropoulos, K., Gunay, O ., **Kose, K.**, Erden, F., Chaabane, F., Tsalakanidou, F., Grammalidis, N., Cetin, A. E., Video-Based Flame Detection for the protection of Cultural Heritage, "International Journal of Heritage in the Digital Era", vol. 2, no. 1, March 2013.

[J5] Erden, F., Toreyin, B. U., Soyer, E. B., Inac, I., Gunay, O., **Kose, K.**, Cetin, A. E., Wavelet based flickering flame detector using differential PIR sensors, "Fire Safety Journal", vol. 53, pp. 13-18, ISSN 0379-7112, October 2012.

[J4] Gunay, O., Toreyin, B., **Kose, K.**, Cetin, A. E., Entropy Functional Based Online Adaptive Decision Fusion Framework with Application to Wildfire Detection in Video, "IEEE Transactions on Image Processing", 99,1-1,2012

[J3] **Kose K.**, Cetin A.E., Low-Pass Filtering of Irregularly Sampled Signals Using a Set Theoretic Framework [Lecture Notes],"Signal Processing Magazine, IEEE", 28, 4, 117-121, 2011

[J2] Suhre, A., **Kose, K.**, Cetin, A.E., Gurcan, M.N., Content-adaptive color transform for image compression, "Optical Engineering", 50, 057003, 2011

[J1] **Kose, K.**, Cetin, A.E., Gudukbay, U., Onural, L., 3D Model compression using Connectivity-Guided Adaptive Wavelet Transform built into 2D SPIHT, "Journal of Visual Communication and Image Representation", 21, 1, 17-28, Elsevier, 2010

Peer Reviewed Conference Publications

[C27] Bozkurt A., **Kose K.**, Alessi-Fox C., Gill M., Dy G.J., Brooks, D., Rajadhyaksha M., A Multiresolution Convolutional Neural Network with Partial Label Training for Annotating Reflectance Confocal Microscopy Images of Skin, MICCAI'18

[C26] Bozkurt A., **Kose K.**, Coll-Font J., Alessi-Fox C., Gill M., Dy G.J., Brooks, D., Rajadhyaksha M., Delineation of Skin Strata in Reflectance Confocal Microscopy Images using Recurrent Convolutional Networks with Toeplitz Attention, Machine Learning for Health workshop at Conference on Neural Information Processing Systems (NIPS), 2017

[C25] **Kose K.**, Bozkurt A., Alessi-Fox C., Gill M., Dy G.J., Brooks, D., Rajadhyaksha M., A Multiresolution Deep Learning Framework for Automated Annotation of Reflectance Confocal Microscopy Images, in Biophotonics Congress: Biomedical Optics Congress 2018 (Microscopy/Translational/Brain/OTS), OSA Technical Digest (Optical Society of America) 2018

[C24] Bozkurt A., Gale T., Kose K., Fox CA., Brooks DH., Rajadhyaksha M.,Dy J., "Delineation of Skin Strata in Reflectance Confocal Microscopy Images with Recurrent Convolutional Networks," IEEE Conference on Computer Vision and Pattern Recognition Workshops (CVPRW), Honolulu, HI, USA, 2017, pp. 777-785. 2017

[C23] Tofighi, M., **Kose, K.**, Cetin, A.E., Denoising Using Projections onto the Epigraph Set of Convex Cost Function, International Conference on Image Processing (ICIP), 2014.

[C22] Tofighi, M., Bozkurt, A., **Kose, K.**, Cetin, A.E. Deconvolution using projections onto the epigraph set of a convex cost function, Signal Processing and Communications Applications Conference (SIU), 2014

[C21] **Kose, K.**, Rajadhyaksha, M. Computer based algorithms for classification of skin cancer morphology in reflectance confocal microscopy images, Montagna Symposium on the Biology of Skin/Society for Investigative Dermatology (SID), 2013 (to appear)

[C20] Cetin. A. E., Bozkurt, A., Gunay, O., Habiboglu, Y. H, **Kose, K.**, Onaran, I., Sevimli, R. A., Projections Onto Convex Sets (POCS) Based Optimization by Lifting, IEEE GlobalSIP Symposium on Low-Dimensional Models and Optimization in Signal Processing, 2013

[C19] Eleyan, A., **Kose, K.** Cetin, A. E. Image Feature Extraction Using Compressive Sensing, 5^{th} International Conference in Image Processing & Communications (IP&C), 2013

[C18] Dimitropoulos, K., Gunay, O ., **Kose, K.**, Erden, F., Chaabane, F., Tsalakanidou, F., Grammalidis, N., Cetin, A. E., Video-Based FLame Detection for the protection of Cultural Heritage, 4^{th} International Conference on Progress in Cultural Heritage Preservation (EUROMED), 2012

[C17] **Kose K.**, Cevher V., Cetin A.E., Filtered Variation Method for Image Denoising and Sparse Signal Processing, "International Conference on Acoustics, Speech and Signal Processing (ICASSP 2012)", 2012

[C16] **Kose, K.** Gunay O., Cetin A. E. Entropy Minimization Based Robust Algorithm for Adaptive Networks, to appear at "IEEE 20^{th} Conference on Signal Processing and Communications Application (SIU'12)", 2012

[C15] Gunay O., **Kose, K.**, Cetin A. E. Entropy Functional Based Adaptive Decision Fusion Framework, to appear at "IEEE 20^{th} Conference on Signal Processing and Communications Application (SIU'12)", 2012

[C14] Habiboglu, Y. H., **Kose K.**, Cetin, A.E., Fractional Wavelet Transform Using an Unbalanced Lifting Structure, "Proceedings of SPIE, the International Society for Optical Engineering", Society of Photo-Optical Instrumentation Engineers (SPIE), 2011.

[C13] Eleyan, A., **Kose, K.**, Cetin, A. E., New face representation using Compressive Sensing,"IEEE 19^{th} Conference on Signal Processing and Communications Applications (SIU'11)", 558-561, 2011

[C12] Grammalidis, N., Cetin, A. E., Dimitropoulos, K., Tsalakanidou, F., **Kose, K.**, Gunay, O., Gouverneur, B., Torri, D, Kuruoglu, E., Tozzi, S., A Multi-Sensor Network for the Protection of Cultural Heritage, "European Signal Processing Conference (Eusipco'11)",Spain,2011

[C11] Dimitropoulos, K., **Kose, K.**, Grammalidis, N., Cetin, A. E., Fire Detection and 3-D Fire Propagation Estimation for the Protection of Cultural Heritage Areas, "ISPRS Technical Commission VIII Symposium", 2010

[C10] Suhre, A., **Kose, K.**, Cetin, A.E., Gurcan, M.N., "Content-adaptive color transform for image compression", Image Processing (ICIP), 2010 17th IEEE International Conference on , pp.189-192, 26-29 Sept. 2010.

[C9] Suhre, A., **Kose, K.**, Cetin, A.E., Image compression using a histogram-based color transform, "IEEE 18^{th} Conference on Signal Processing and Communications Application (SIU'10)" 344-347,2010

[C8] **Kose, K.**, Yilmaz, E., Cetin, A.E., Progressive compression of digital elevation data using meshes, "IEEE International Geoscience and Remote Sensing Symposium (IGARSS 2009)", 4, IV-502-IV-505, 2009

[C7] **Kose, K.** Cetin, A.E., Motion based clustering of model animations using PCA, "IEEE 17^{th} Conference on Signal Processing and Communications Applications, SIU'09", 317-320,2009

[C6] **Kose, K.**, Grammalidis, N., Yilmaz, E., Cetin, A. E., 3D Forest Fire Propagation Simulation, "3DTV Conference: The True Vision-Capture, Transmission and Display of 3D Video" 369-372, 2008

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[C4] **Kose, K.**, Cetin, A.E., Gudukbay U., Onural, L., Connectivity-guided adaptive lifting transform for Image like compression of meshes,"3DTV Conference", 1-4, 2007

[C3] **Kose, K.**, Cetin, A. E., Gudukbay, U., Onural, L., Baglanirlikla Yonlendirilmis Uyarlamali Dalgacik Donusumu ile Uc Boyutlu Model Sikistirilmasi, IEEE 15^{th} conference on Signal Processing and Communications Applications (SIU 2007)", 1-4, 2007

[C2] **Kose, K.**, Cetin, A.E., Gudukbay U., Onural, L., Dikdortgensel Olmayan Dalgacik Donusumune Dayali Cok Cozunurluklu Uc Boyutlu Model Analizi ve Sikistirilmasi, "IEEE 14^{th} Conference on Signal Processing and Communications Applications (SIU 2006)",1-4,2006

[C1] **Kose, K.** Cetin, A.E., Gudukbay, U., Onural, L., Nonrectangular Wavelets for Multiresolution Mesh Analysis and Compression, "Independent Component Analysis, Wavelets, Unsupervised Smart Sensors, and Neural Networks IV, Proceedings - SPIE The International Society for Optical Engineering",2006

Conference Publications and Presentations

[C18] **Kose K.**, Bozkurt A., Gou M., Alessi-Fox C., Gill M., Camps O., Dy JD., Brooks, DH., Rajadhyaksha M. "How machine vision and deep nets can help in adoption of reflectance confocal microscopy in clinical practice (Invited Paper)", Multimodal Biomedical Imaging XIV, 10871-17, SPIE Photonics West'19

[C17] Bozkurt A., **Kose K.**, Coll-Font J., Alessi-Fox C., Dy JD., Brooks, DH., Rajadhyaksha M."Skin strata delineation in reflectance confocal microscopy images using recurrent convolutional networks with attention", Photonics in Dermatology and Plastic Surgery, 10851-10-7, SPIE Photonics West'19

[C16] **Kose K.**, Bozkurt A., Alessi-Fox C., Gill M., Dy JD., Brooks, DH., Rajadhyaksha M., "Fully convolutional neural networks with partial label training for annotating reflectance confocal microscopy mosaics of melanocytic lesions,", Photonics in Dermatology and Plastic Surgery, 10851-7, SPIE Photonics West'19

[C15] Dy JG, **Kose K.**, Bozkurt A., Brooks, DH., Rajadhyaksha M., "Machine learning for optical skin microscopy: a tutorial, current advances, and challenges (Invited Paper)", Photonics in Dermatology and Plastic Surgery, 10851-4, SPIE Photonics West'19

[C14] **Kose K.**, Bozkurt A., Ariafar, S. Alessi-Fox C., Gill M., Dy G.J., Brooks, D., Rajadhyaksha M., "Deep learning based classification of morphological patterns in reflectance confocal microscopy to guide noninvasive diagnosis of melanocytic lesions", SPIE Photonics West'17

[C13] **Kose K.**, Gou M., Yelamos O., Cordova A.M., Rossi A., Nehal K., Camps I.O., Dy JG, Brooks D.H., Rajadhyaksha M., Video-mosaicking of in vivo reflectance confocal microscopy images for noninvasive examination of skin lesions", SPIE Photonics West'17

[C12] Flores S.E., Yelamos O, Cordova A.M., **Kose K.**, Phillips W., Rossi A., Nehal K., Rajadhyaksha M., "Peri-operative imaging of cancer margins with reflectance confocal microscopy during Mohs micrographic surgery: feasibility of a video-mosaicking algorithm", SPIE Photonics West'17

[C11] Vasefi F., MacKinnon N.B., Jain M., Cordova M., **Kose K.**, Rajadhyaksha M. Halpern A.C., Farkas D.L., "In vivo features of melanocytic lesions: multimode hyperspectral dermoscopy, reflectance confocal microscopy, and histopathologic correlates", SPIE Photonics West'17

[C10] **Kose K.**, Alessi-Fox, C., Gill, M., Dy, J., Brooks, D., Rajadhyaksha, M., A machine learning method for identifying morphological patterns in reflectance confocal microscopy mosaics of melanocytic skin lesions in-vivo, Proc. SPIE 9689, Photonic Therapeutics and Diagnostics XII, 968908, 2016

[C9] Bozkurt, A., **Kose K.**, Alessi-Fox, C., Dy, J.G., Brooks, D.H., Rajadhyaksha, M., An unsupervised machine learning method for delineating stratum corneum in reflectance confocal microscopy stacks of human skin in vivo,Proc. SPIE 9689, Photonic Therapeutics and Diagnostics XII, 96890Z ,2016

[C8] **Kose, K.**, Gou M., Alessi-Fox, C., Dy, J., Camps, O., Brooks, D., Rajadhyaksha, M., Analysis of In-Vivo Reflectance Confocal Microscopy Images of Skin, International Symposium on Biomedical Image Processing, New York, 2015.

[C7] Flores, E. S.,Cordova, M., **Kose, K.**, Phillips W., Rossi A.,Nehal K., Rajadhyaksha, M., Feasibility of intraoperative imaging with reflectance confocal microscopy to potentially guide Mohs surgery, The 7th NCIGT and NIH Image Guided Therapy Workshop, Sept 2014.

[C6] **Kose, K.**, Cordova M., Dy, J. G., Brooks, D. H., and Rajadhyaksha, M., Abstract in Deconstructing Skin: RCM and FCM interpretation with quantitative image analysis tools, Dermatol Pract Concept. 2014 Jul; 4(3): 23, .Jul 2014.

[C5] **K. Kose**, C. Alessi-fox, Dy, J. G., Brooks, D. H., and Rajadhyaksha, M., Computer-aided Algorithm for Delineating Dermal Epidermal Junction in Reflectance Confocal Images of Skin, Lasers in Medicine & Biology, Gordon Research Conference, July 2014.

[C4] **K. Kose**, Dy, J. G., Brooks, D. H., and Rajadhyaksha, M., Image Analysis Based Automated DEJ Detection Method for RCM Stacks, SPIE Photonics West, 2014.

[C3] Bozkurt A., **Kose K.**, Sourati J., Alessi-Fox C., Dy, J. G., Brooks, D. H., and Rajadhyaksha, M., Computer based algorithm for estimating stratum corneum thickness from Reflectance Confocal Microscopy (RCM) images, SPIE Photonics West, 2014.

[C2] Flores, E.S., Cordova, M., **Kose, K.**, Phillips, W., Nehal, K., Rajadhyaksha, M., Feasibility of Intraoperative Imaging during Mohs Surgery with Reflectance Confocal Microscopy, SPIE BiOS, 89260F-89260F-12, 2014

[C1]Sourati, J., **Kose, K.**, Rajadhyaksha, M., Dy, J.G., Erdogmus, D., Brooks, D.H., Automated localization of wrinkles and the dermo-epidermal junction in obliquely oriented reflectance confocal microscopic images of human skin SPIE BiOS, 856503-856503-9

Arxiv Papers

[A7] **Kose K.**, Bozkurt A., Gou M., Alessi-Fox C., Gill M., Camps O., Dy JD., Brooks, DH., Rajadhyaksha M., "A Multiresolution Convolutional Neural Network with Partial Label Training for Annotating Reflectance Confocal Microscopy Images of Skin", arXiv preprint arXiv:1802.02213, 2018

[A6] Bozkurt A., **Kose K.**, Coll-Font J., Alessi-Fox C., Dy JD., Brooks, DH., Rajadhyaksha M., "Delineation of Skin Strata in Reflectance Confocal Microscopy Images using Recurrent Convolutional Networks with Toeplitz Attention", arXiv preprint, arXiv:1712.00192, 2017

[A5] Tofighi, M., **Kose, K.**, Cetin, A.E., Signal Reconstruction Framework Based On Projections Onto Epigraph Set Of A Convex Cost Function (PESC), arXiv preprint arXiv:1402.2088, 2014

[A4] Tofighi, M., **Kose, K.**, Cetin, A.E., Denoising Using Projection Onto Convex Sets (POCS) Based Framework, arXiv:1306.2516, 2014

[A3] Cetin, A. E., Bozkurt, A., Gunay, O., Habiboglu, Y. H, **Kose, K.**, Onaran, I., Sevimli, R. A., Projections Onto Convex Sets (POCS) Based Optimization by Lifting, arXiv:1306.2516, 2013

[A2] **Kose, K.**, Cetin, A. E., Compressive Sensing Using the Entropy Functional, Arxiv preprint arXiv:1101.5079, 2011

[A1] Gunay, O., Toreyin, B.U., **Kose, K.**, Cetin, A.E., Online Adaptive Decision Fusion Framework Based on Entropic Projections onto Convex Sets with Application to Wildfire Detection in Video, Arxiv preprint arXiv", 1101.4749, 2011

Honors and Awards

Society for Investigative Dermatology Eugene M. Farber Travel Awards for Young Investigators
Montagna Symposium on the Biology of Skin 2014
Computer-based algorithms for classification of skin cancer morphology in reflectance confocal microscopy images

Best Paper
4^{th} International Conference on Progress in Cultural Heritage Preservation (EUROMED) 2012

Graduate Scholarship
Full Graduate Scholarship from EU FP6/FP7 and Nationally Funded projects 2010-2012

Bilkent University Electrical and Electronics Engineering Department Graduate Research Conference
Best Paper Award 2012

Technical Skills

Programming Languages
MATLAB

Tools, Software
MATLAB, LaTex

Operating Systems
Windows, Unix, Mac OS