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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

Thesis Topic: Signal and Image Processing Algorithms Using Interval Convex Programming and Sparsity

August 2012

Bilkent University
M.Sc. in Electrical and Electronics Engineering

Thesis Topic: 3D Model Compression Using Image Compression based Methods

January 2007

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

Ambient Assisted Living System Using Vibration and PIR Sensors

2012

Turkish Academy of Science
Project Researcher

Compressive Sensing using Entropy functional Based Methods project

2010-2012

European Union FP7
Project Researcher

MIRACLE Project (Extracting 3D information from microscopic images)

2010-2012

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 - Journals
IEEE Transactions on Image Processing
IEEE Signal Processing
Machine Learning for Biomedical Imaging (MELBA),
Journal of Electronic Imaging,
Lasers in Surgery & Medicine
Scientific Reports
Journal of Biomedical Optics
Biocybernetics and Biomedical Engineering,
Computers in Biomedical and Medicine

Reviewer - Conferences
Medical Image Computing & Computer Assisted Interventions (MICCAI)
Medical Imaging with Deep Learning (MIDL)
Conference on Computer Vision & Pattern Recognition (CVPR)
IEEE International Symposium on Biomedical Imaging (ISBI)
International Conf. on Acoustics, Speech & Signal Processing (ICASSP)
European Signal Processing Conference (EUSIPCO),
Signal Processing and Communications Applications Conference (SIU)

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

System Administrator
Bilkent University, EE Dept. 2008-2012

TECHNICAL SKILLS

Programming Languages
Python, MATLAB

Tools, Software
LaTeX

Operating Systems
Unix, Mac OS, Windows

- [J51] Dechent CN., Cordova M., Aleissa S., Liopyris K., Duzsa SW., **Kose K.**, et.al. "Lentigo maligna melanoma mapping using reflectance confocal microscopy correlates with staged excision: A prospective study", *Journal of the American Academy of Dermatology*, Volume 88, Issue 2, Pages 371-379, 2023
- [J50] Mehta P., Oh Y., Cordova M., Chen CS., Halpern H., Harris U., Kentley J., Kurtansky N., **Kose K.**, et. al. "Patterns of the use of reflectance confocal microscopy at a tertiary referral dermatology clinic", *Journal of the American Academy of Dermatology*, 87:4, 882-884, October 2022
- [J49] Sahu A., **Kose K.**, Kraehenbuehl L., Byers C., et. al., "In vivo tumor immune microenvironment phenotypes correlate with inflammation and vasculature to predict immunotherapy response", *Nature Communications* 9;13(1):5312, September, 2022
- [J48] Chousakos E., **Kose K.**, Kurtansky NR., Dusza SW., Halpern A., Marghoob AA., "Analyzing the Spatial Randomness in the Distribution of Acquired Melanocytic Neoplasms", *Journal of Investigative Dermatology*, 142 (12), 3274-3281, 2022.
- [J47] Hidalgo L., Carrasco K., Cordova M., **Kose K.**, Donoso F., Sahu A., Lavín A., Elimelech A., Uribe P., Navarrete-Dechent C., "Water-based acrylic marker for reflectance confocal microscopy lesion delineation", *Lasers in Surgery and Medicine*, 2022
- [J46] Millar K., Harris U., Bang A., Moronta M., Sendin MM., Rossi A., Lee E., Nehal KS., Rajadhyaksa M., **Kose K.**, et.al., "3D Mosaicking and Intensity Projection, to Reconstruct the Entire Epidermis During Ex-Vivo Confocal Microscopy for Detection of Superficial Basal Cell Carcinoma", *Lasers in Surgery and Medicine*, vol. 54, pp PC119340G, 2022
- [J45] Daneshjou R., Barata C., Betz-Stablein B., Celebi EM., Codella N., Combalia M., Guitera P., Gutman D., Halpern A., Helba B., **Kose K.**, et.al., "Checklist for Evaluation of Image-Based Artificial Intelligence Reports in Dermatology: CLEAR Derm Consensus Guidelines from the International Skin Imaging Collaboration Artificial Intelligence Work Group", *Jama Dermatology*, vol. 158(1) pp. 90-96, 2022
- [J44] Sahu A., Cordero J., Wu X., Kossatz S., Harris U., Franca PDD., Kurtansky NR., Everett N., Dusza S., Monnier J., **Kose K.**, et. al., "Combined PARP1-Targeted Nuclear Contrast and Reflectance Contrast Enhance Confocal Microscopic Detection of Basal Cell Carcinoma", *Journal of Nuclear Medicine*, Vol.63(6), pp. 912-918, 2022
- [J43] Sendin-Martin M, **Kose K**, Harris U, Rossi A, Lee E, Nehal K, Rajadhyaksha M, Jain M. "Complete visualization of epidermal margin during ex vivo confocal microscopy of excised tissue with 3-dimensional mosaicking and intensity projection." *Journal of American Academy of Dermatology*. 86(1):e13-e14, 2022
- [J42] Campanella G., Navarrete-Dechent C., Liopyris K., **Kose K.**, et. al., "Deep Learning for Basal Cell Carcinoma Detection for Reflectance Confocal Microscopy", *Journal of Investigative Dermatology*, Vol. 142(1), 2022
- [J41] Mehta P, Oh Y., Cordova M., Chen CS., Halpern H., Harris U., Kentley J., Kurtansky NR., **Kose K.**, et.al., "Patterns of the use of Reflectance Confocal Microscopy at a Tertiary Referral Dermatology Clinic", *Journal of the American Academy of Dermatology*, 2021

- [J40] Bozkurt A.*, **Kose K.*** Coll-font C. et. al., "Skin strata delineation in reflectance confocal microscopy images using recurrent convolutional networks with attention", *Scientific Reports*, 11(1), 2021 (*Shared first authorship)
- [J39] Zhao J., Jain M., Harris U., **Kose K.**, Curiel-Lewandrowski C., Kang D., "Deep LearningBased Denoising in HighSpeed Portable Reflectance Confocal Microscopy", *Lasers in Surgery and Medicine*, 53(6):880-891., Aug 2021
- [J39] Dellatorre G. Gadens G.A., Silveria L.P., **Kose K.**, Marghoob A.A., "Video-based wide area digital dermoscopy, *Journal of the American Academy of Dermatology (JAAD)*, 2021
- [J38] D'Alonzo M., Bozkurt A., Alessi-Fox C., Gill M., Brooks DH., Rajadhyaksha M., **Kose K.**, Dy JG., "Semantic segmentation of reflectance confocal microscopy mosaics of pigmented lesions using weak labels" *Scientific Reports* 11, 3679 2021
- [J37] **Kose K.**, Fox, CA., Rossi, A., et al. "An international 3 center training and reading study to assess basal cell carcinoma surgical margins with ex vivo fluorescence confocal microscopy" *J Cutan Pathol.* 2021.
- [J36] Rotemberg V., Kurtansky N., Betz-Stablein B., Caffery L., Chousakos E., Codella N., Combalia M., Duzsa S., Guitera P., Gutman D., Halpern A., Helba B., Kittler H., **Kose K.**, et. al., "A patient-centric dataset of images and metadata for identifying melanomas using clinical context" *Scientific Data* 8, 34, 2021.
- [J35] **Kose K.***, Bozkurt A.*, Alessi-Fox C., Gill M., Longo C., Pellecani G., Dy JG., Brooks DH., Rajadhyaksha M., "Segmentation of cellular patterns in confocal images of melanocytic lesions in vivo via a multiscale encoder-decoder network (MED-Net)", *Medical Image Analysis*, Volume 67, 2021. (*Shared first authorship)
- [J34] Ortner VK, Sahu A, Cordova M, **Kose K.**, et al. "Exploring the utility of Deep Red Anthraquinone 5 for digital staining of ex vivo confocal micrographs of optically sectioned skin", *J. Biophotonics.* 2020.
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- [J32] Navarrete-Dechent C., Liopyris K., Rishpon A., Marghoob NG., Cordova M., Dusza SW., Sahu A., **Kose K.**, Oliviero M., Rabinovitz H., Busam KJ., Marchetti MA., Chen C-CJ., Marghoob AA., "Association of Multiple Aggregated Yellow-White Globules With Nonpigmented Basal Cell Carcinoma." *JAMA Dermatol.* Published online May 27, 2020.
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- [J29] **Kose K.**, Bozkurt B., Alessi-Fox C., Brooks DH., Dy JG., Rajadhyaksha M., Gill M., "Utilizing Machine Learning for Quality Assessment for Reflectance Confocal Microscopy", *Vol. 140(6)*, pp.1214-1222, *Journal of Investigative Dermatology*, 2020

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- [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
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- [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
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- [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

[C30] Alfonsa A., Aleisa A., Cordova M., Nehal KS., Rajadhyaksha M., **Kose K.**, "Automated evaluation of lentigo maligna margins using hand-held reflectance confocal microscopy", in Biophotonics Congress: Biomedical Optics 2022 (Translational, Microscopy, OCT, OTS, BRAIN), Technical Digest Series (Optica Publishing Group, 2022

[C29] Mehta P., Sellitti J., Weber J., Oh Y., **Kose K.**, Rotemberg V., "The role of data augmentation on the performance of automated lesion classification in the presence of imaging artifacts: An evaluation of the 2019 ISIC Challenge", Journal of Investigative Dermatology, Society for Investigative Dermatology (SID) 2021 Virtual Meeting Abstract Supplement, Vol 141, Issue 5, 2021

[C28] 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

[C27] 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

[C26] **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

[C25] 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

[C24] 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.

[C23] 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

[C22] **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)

[C21] 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

- [C20] Eleyan, A., **Kose, K.** Cetin, A. E. Image Feature Extraction Using Compressive Sensing, 5th International Conference in Image Processing & Communications (IP&C), 2013
- [C19] 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, 4th International Conference on Progress in Cultural Heritage Preservation (EUROMED), 2012
- [C18] **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
- [C17] **Kose, K.** Gunay O., Cetin A. E. Entropy Minimization Based Robust Algorithm for Adaptive Networks, "IEEE 20th Conference on Signal Processing and Communications Application (SIU'12)", 2012
- [C16] Gunay O., **Kose, K.**, Cetin A. E. Entropy Functional Based Adaptive Decision Fusion Framework, "IEEE 20th Conference on Signal Processing and Communications Application (SIU'12)", 2012
- [C15] 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,"IEEE 20th 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 19th Conference on Signal Processing and Communications Applications (SIU'11)", 558-561, 2011
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- [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 18th 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 17th 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

[C5] **Kose, K.**, Yilmaz, E., Grammalidis., N., Aktug B., Cetin A.E. Aydin, I., 3 Boyutlu Orman Yangini Simulasyonu Sistemi, "IEEE 16th Conference on Signal Processing, Communication and Applications (SIU 2008)", 2008

[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 Sikistirilmesi, IEEE 15th 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 Sikistirilmesi, "IEEE 14th 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

BOOK CHAPTERS

[B2] Moronta M., Harris U., Sendin-Martin M., Bang A., Rossi A., Lee E., Nehal K., Chen JCS., Rajadhyaksha M. **Kose K.**, Jain M., "Epidermal Reconstruction During Ex Vivo Confocal Microscopy for Detection of Superficial Basal Cell Carcinoma with 3D-Mosaicking and Intensity Projection, Cutaneous Atlas of Ex Vivo Confocal Microscopy, Editors, Jain, M., Rossi, A., Nehal, K., Sendn-Martn, M., Springer, Cham. 2022

[B1] **Kose K.**, Hames S., "Computer Vision and Machine Learning Techniques for Quantitative Image Analysis in Reflectance Confocal Microscopy", in Reflectance Confocal Microscopy of Cutaneous Tumors, Second Edition, Chap 3, Gonzales S. (Eds), in publication, 2017

CONFERENCE PUBLICATIONS AND PRESENTATIONS

[C26] Sahu A., Tembo T., **Kose K.**, "Phenotyping human tumor immune microenvironment (TiME) in vivo in patients to predict response to immunotherapy", SPIE Photonics West, pp. PC1197207, 20022

[C25] Torop M., Liu W., Brooks DH., Rajadhyaksha M., Dy JG., Camps O., Ghimire S., **Kose K.**, "Unsupervised representation learning for detecting out of distribution samples in dermoscopy images of eight types of skin lesions", SPIE Photonics West, pp. PC119340H, 2022

[C24]Jonathan K., Cordova M., Kurtansky NR., and Jain M., Rotemberg V., **Kose K.** Rajadhyaksha M., "Initial testing of machine learning-based imaging of pigmented skin lesions with reflectance confocal microscopy in a clinical setting", SPIE Photonics West, pp. PC119340G, 2022

[C23] Sahu A., Gill M., Cordova M., **Kose K.**, "Dynamic imaging of tumor-immune microenvironment (TiME) and microvasculature identifies hot' and cold' tumor phenotypes in vivo in patients", AACR Annual Meeting Supplement Cancer Research, 2021

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- [C22] Sahu A., Cordero J., Wu Xiancheng, **Kose K.**, et. al. , "Combining PARPI-FL fluorescence and reflectance contrast for improved detection of basal cell carcinoma (BCC)", Biophotonics Congress 2021
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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*
- 4th 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