CURRICULUM VITAE

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Google Scholar: http://scholar.google.com.tr/citations?user=apugsswAAAAJ&hl=tr&oi=ao

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ACADEMIC DEGREES

Ph.D. Department of Systems Engineering, Moore School of Electrical Engineering, University of Pennsylvania, Philadelphia, PA, December 1987.

M.S.E. Department of Systems Engineering - Moore School of Electrical Engineering, University of Pennsylvania, Philadelphia, PA, May 1986.

B.Sc. Electrical Engineering - Middle East Technical University, Ankara, Turkey, May 1984.

PROFESSIONAL EXPERIENCE

Professor, Sept 2022-Present, University of Illinois Chicago, Chicago, Illinois

Research Professor, April 1, 2017- 2022, University of Illinois at Chicago, Chicago, Illinois

Visiting Professor, University of California San Diego, Jan 1, 2017- March 31, 2017, La Jolla, San Diego, California

Professor, 11/96 – 09/2019, Bilkent University, Dept. of Electrical and Electronics Eng., Ankara, Turkey; Adjunct Professor 09/2019 - Present: Bilkent University

Visiting Professor, Department of Electrical and Computer Engineering, University of California San Diego, La Jolla, CA, January 2016 - July 2016

CEO and CTO, 3/2004 – 3/2013, Grandeye-Vision, Turkey. One of the Founders and Consultant, Grandeye Vision, Surrey, UK. The company is acquired by Oncam-Grandeye (www.oncamgrandeye.com).

Visiting Professor, Ryerson University (Currently, Toronto Metropolitan University), Toronto, Canada, 2009-2010 Academic Year.

Visiting Associate Professor, 9/96 - 9/97, University of Minnesota, Department of Electrical Engineering, Minneapolis, MN, USA

Assistant Professor, 9/89 - 3/91, Associate Professor, 3/91 – 12/96, Bilkent University.

Assistant Professor, 8/87 - 8/89, University of Toronto, Department of Electrical Engineering, Canada

Consultant, 1/2005 - 12/2005, Honeywell Video Systems, Surrey, UK.

Consultant, 1/06 – 12/06, Visioprime, Surrey, UK.

Consultant, 9/96 - 12/96, Optron Inc., MA, U.S.A.

Member of Tech. Staff Level Consultant, 6/88 - 9/88, Bell Communications Research, NJ.

Resident Visitor, 8-9/92, 8-9/91, Bell Communications Research, NJ, U.S.A.

Research Assistant, 9/85 - 9/87, University of Pennsylvania, Dept. of Electrical Eng.

Teaching Assistant, 9/84 - 9/85, University of Pennsylvania, Dept. of Systems Engineering.

Research and Development Engineer, 1/84 - 9/84, ASELSAN, Ankara, Turkey.

SUMMARY OF PROFESSIONAL ACCOMPLISHMENTS

- IEEE Fellow: Developed novel deconvolution, image and signal reconstruction and design methods and elected Fellow of IEEE in 2009 for contributions to inverse problems. Deconvolution methods are used in medical image processing and camera design.
- Developed a computer vision-based wildfire detection system which was installed in more than 100 locations in Turkey, Cyprus, Singapore, South Korea and the US. Received a best paper award for this work in a meeting organized by *UNESCO and Cyprus Presidency of the European Union.* Computer Vision-based wildfire detection is selected as one of the best inventions of 2023 by Time magazine: https://www.gov.ca.gov/2023/10/24/time-recognizes-cal-fire-ai-alertcalifornia-as-a-best-invention-of-2023/

  Book: A. Enis Cetin, Bart Merci, O. Günay, B.U. Töreyin, Steven Verstockt, *Methods and Techniques for Fire Detection, Signal, Image and Video Processing Perspectives, 1st Edition,* Academic Press Print Book , 250 pages, ISBN :9780128023990, 15 Feb 2016
- Co-founded a successful startup OEM camera company in 2003: Oncam-Grandeye and its subsidiary Grandeye-Vision develop panoramic wide-angle surveillance cameras that use GPUs. Cameras have built-in intelligent video analytics software and image reconstruction pipeline. Oncam-Grandeye cameras won design and innovation awards in IFSEC Trade Fair, UK and the International Security Conference & Exposition (ISC-WEST) Trade Fair, Las Vegas, NV:
  https://www.oncamgrandeye.com/our-company/history-awards/
  https://www.washingtonpost.com/world/national-security/many-cameras-little-privacy/2013/08/12/37462de8-01d1-11e3-9711-3708310f6f4d_story.html
  https://www.businesswire.com/news/home/20140304005388/en/The-Houston-Airport-System-Selects-Oncam-Grandeye-360-Degree-Technology-for-William-P.-Hobby-and-Bush-Intercontinental-Airports
- Former Ph.D. student Erzin and I developed a K-means clustering method for "Interframe differential coding of Line Spectrum Frequencies (LSF)" [IEEE Trans. on Speech and Audio Processing, 1994]. We introduced the concept of adaptive prediction and split vector quantization for LSF representation. This concept was used in ITU speech coding standards including G.729, G.723.1 and GSM EFR [see pages 418-419, W.C. Chu's book "Speech Coding Algorithms: Foundation and Evolution of Standardized Coders", WC Chu, John Wiley & Sons, 2003].
- Developed video analytics software for Visioprime, Surrey, UK, which was acquired by Honeywell Video Systems in 2005.
- Co-authored more than 150 journal articles.
- Citations: More than 13000 citations as per Google Scholar (H-Index: 58)
- Editor-in-Chief, *Signal, Image and Video Processing* published by Springer Nature. 2025 Impact Factor: 2.1, Q1 Journal
- Editorial board memberships: Multiple in IEEE and EURASIP Journals.
- Supervised 20 Ph.D. Students and 38 M.Sc. students. Five of my former students are tenured professors. Former Ph.D. Student Prof. M.N. Gurcan is the Senior Associate Dean for Artificial Intelligence and Director of the Center for Biomedical Informatics at Wake Forest School of Medicine. He used to be a full professor at Ohio State University. E. Erzin is the Associate Dean of Engineering at Koç University, Istanbul, Turkey; he was a Member of Technical Staff at Lucent-Bell Labs; Fatih Erden is a senior ML Scientist at 2K Games, CA; K. Kose is a Senior Research Scientist (Assistant Professor Level) at Memorial Sloan Kettering Cancer Center, New York; A. Suhre works at Valeo, Germany. D. Badawi works at Cadence CA; S. Atici works at Apple CA.

PUBLICATIONS

Book

A. Enis Cetin, Bart Merci, O. Günay, B.U. Töreyin, Steven Verstockt, *Methods and Techniques for Fire Detection, Signal, Image and Video Processing Perspectives, 1st Edition,* Academic Press Print Book , 250 pages, ISBN :9780128023990, 15 Feb 2016

Patents

1- Ahmet Enis Cetin, Mark Kenneth Davey, Halil I. Cuce, Andrea Elvis Castellari, Adem Mulayim "Method of compression for wide angle digital video," USA, US Pat. 7894531, Issued 22 Feb 2011.

2- Bartu Ahiska, Mark Kenneth Davey, Ahmet Enis Cetin, "Automatically expanding the zoom capability of a wide-angle video Camera," USA, US Pat. 7990422, Issued 2 Aug 2011; also published as US 8405732 B2, 2013.

3- A. Enis Cetin, Mark K Davey, Timucin Noyan, "Unusual event detection in wide-angle video (based on moving object trajectories)", USA, US Patent No: US8284258B1, Issued Nov. 9, 2012.

4- A. Enis Cetin, B. U. Toreyin, Method, device and system for determining the presence of volatile organic compounds (VOC) in video,US 8432451 B2, Filed 3 Apr 2009 Issued 30 Apr 2013.

5- A. Enis Cetin, Osman Gunay, "Method and system for wildfire detection using a visible range camera," US9047515- Issued June 2, 2015

Patent Application at University of Illinois Chicago:

6- Ahmet Cetin, Aldo W. Foe, Elizabeth M. Goodman, and John Monaghan, "Deep Learning Systems, Devices and Methods for Predicting Survivor or Lost Person Behavior," application number 63/428,999, filed November 30, 2022,

Chapters in Books and Monographs

1. Fatih Erden and A. Enis Cetin, "Infrared Sensors for Indoor Monitoring," Chapter 15, pp. 365-380 in *Radar for In-Door Monitoring: Detection, Classification, and Assessment*, Editor Moeness Amin, CRC Press, 2018, ISBN 9781498781985 - CAT# K30021
2. Omer N. Gerek, A. Enis Cetin, 'Vector Quantization,' in *Wiley Encyclopedia of Biomedical Engineering,* April 2006.
3. Omer N. Gerek, A. Enis Cetin, "Image Coding," in *Wiley Encyclopedia of Biomedical Engineering*, April 2006.
4. R. Ansari and A. E. Cetin, 'Two-dimensional FIR filters', in *The Circuits and Filters Handbook-2nd Edition,* Ed. by W.K. Chen, IEEE Press and CRC Press, 2002.
5. L. Akarun, Y. Yardimci, A. E. Cetin, 'Adaptive Methods for Dithering Color Images,' in *Selected Papers on Digital Halftoning,* Ed. Jan Allebach, SPIE Press, 1999.
6. R. Ansari and A. E. Cetin, 'Two-dimensional FIR filters', *The Circuits and Filters Handbook,* Ed. by W.K. Chen, pp. 2732-2760, IEEE Press and CRC Press, 1995.
7. A. E. Cetin and H. Koymen, 'Compression of Digital Biomedical Signals,' *Biomedical Engineering Handbook*, Ed. by J. D. Bronzino, pp. 853-865, IEEE Press and CRC Press, 1995.
8. C.Guillemot, A. Enis Cetin, R. Ansari, 'M-channel nonrectangular wavelet representation for 2-D signals,' *Wavelets in Image Communication* edited by M. Barlaud, Elsevier, Dec. 1994.
9. K. Oflazer, A. E. Cetin, {et.al}, 'Medical PACS research in Turkey,' in *Picture Archiving and Communication Systems (PACS) in Medicine*, edited by H.K. Huang et.al, NATO-ASI series, Springer-Verlag, 1991.

Edited Conference Proceedings

- Editors: Emanuele Salerno, A. Enis Cetin, Ovidio Salvetti, *Computational Intelligence for Multimedia Understanding International Workshop* 2011, Pisa, Italy, December 13-15, 2011, Revised Selected Papers, *Lecture Notes in Computer Science*, Volume 7252, 235 pp., Springer 2012. ISBN: 978-3-642-32435-2 (Print) 978-3-642- 32436-9 (Online)
- Editor A. Enis Cetin, *Proceedings of the IEEE-EURASIP Workshop on Nonlinear Signal and Image Processing (NSIP '99)*: June 20 - 23, 1999, Antalya, Turkey Issue 659 of Boğaziçi Üniversitesi yayınları, ISBN 9755181334, 9789755181332
- Editors: A.E. Cetin, O. Arikan, L. Akarun, *2. Sinyal Isleme Kurultayi Kitabi* , Bogazici University Press (in Turkish), Istanbul, Turkey, April 1994.
- Editors: B. Sankur, L. Akarun, A. E. Cetin *1. Sinyal Isleme Kurultayi Kitabi (Turkish Signal Processing Conference-1)* Bogazici University Press (in Turkish), Istanbul, Turkey, April 1993

Articles in Refereed Journals

1. Xin Zhu, Ahmet Enis Cetin, Gorkem Durak, Batuhan Gundogdu, Ziliang Hong, Hongyi Pan, Ertugrul Aktas, Elif Keles, Hatice Savas, Aytekin Oto, Hiten D. Patel, Adam B. Murphy, Ashley Ross, Frank Miller, Baris Turkbey, Ulas Bagci, VHU-Net: Variational hadamard U-Net for body MRI bias field correction, Medical Image Analysis, Volume 110, 2026, 103955, ISSN 1361-8415, https://doi.org/10.1016/j.media.2026.103955.
2. Hamdan E, Luo Y, Forelli R, Liufu M, Zhou N, Shridhar S, Quattrocchi E, Leveroni Z, Ogrenci S, Tran N, Cetin AE. Real-time Instantaneous Phase Estimation Using a Deep Dual-Branch Complex Neural Network. IEEE Transactions on Biomedical Engineering. 2025 Dec 23.
3. Milani OH, Mills L, Nikho A, Tliba M, Ayyildiz H, Allareddy V, Ansari R, Cetin AE, Elnagar MH. An Artificial Intelligence System for Staging the Spheno-Occipital Synchondrosis. Orthod Craniofac Res. 2025 Sep 2. doi: 10.1111/ocr.70018. Epub ahead of print. PMID: 40891390.
4. Milani, Omid Halimi, Lauren Mills, Amanda Nikho, Marouane Tliba, Veerasathpurush Allareddy, Rashid Ansari, Ahmet Enis Cetin, and Mohammed H. Elnagar. "Automated classification of midpalatal suture maturation stages from CBCTs using an end-to-end deep learning framework." *Scientific Reports*, 15, no. 1 (2025): 18783.
5. E. Türeyen, S. F. Atıcı, A. E. Çetin, Ö. Morgül, 2025, "Input normalized stochastic gradient descent for language tasks", Signal, Image and Video Processing, Vol. 19, No. 8, pp. 1–9.
6. S. Rong, L. He, S. F. Atici, A. E. Çetin, 2025, "Advanced YOLO-based Real-time Power Line Detection for Vegetation Management", *IEEE Transactions on Power Delivery.*
7. S. Rong, E. Hamdan, A. E. Çetin, 2025, "Multi-resolution training improves robustness against adversarial attacks", Signal, Image and Video Processing, Vol. 19, No. 6, p. 481.
8. D. Jha, G. Durak, A. Das, J. Sanjotra, O. Susladkar, S. Sarkar, A. Rauniyar, N. K. Tomar, L. Peng, S. Li, A. E. Çetin, ..., U. Bagci, 2025, "Ethical Framework for Responsible Foundational Models in Medical Imaging", *Frontiers in Medicine*, Vol. 12, 1544501.
9. Y. Yu, H. R. Karimi, L. Gelman, A. E. Çetin, 2025, "MSIFT: A Novel End-to-End Mechanical Fault Diagnosis Framework Under Limited and Imbalanced Data Using Multi-Source Information Fusion", Expert Systems with Applications, Vol. 274, 126947.
10. X. Zhu, H. Pan, A. E. Çetin, 2025, "Edge-Fog Computing-Enabled EEG Data Compression via Asymmetrical Variational Discrete Cosine Transform Network", IEEE Internet of Things Journal.
11. M. Rhee, M. H. Elnagar, V. Allareddy, O. H. Milani, A. E. Çetin, F. J. Sanchez, 2025, "Integrating machine learning for treatment decisions in anterior open bite orthodontic cases: A retrospective study", Journal of the World Federation of Orthodontists.
12. Y. Yu, Y. He, H. R. Karimi, L. Gelman, A. E. Çetin, 2024, "A two-stage importance-aware subgraph

convolutional network based on multi-source sensors for cross-domain fault diagnosis", Neural Networks, Vol. 179, p. 106518.

13. O. H. Milani, S. F. Atici, V. Allareddy, V. Ramachandran, R. Ansari, A. E. Çetin, et al., 2024, "A fully automated classification of third molar development stages using deep learning", Scientific Reports, Vol. 14 (1), p. 13082.
14. Zhu, Xin, and Ahmet Enis Cetin. "The Blind Normalized Stein Variational Gradient Descent-Based Detection for Intelligent Random Access in Cellular IoT." IEEE Internet of Things Journal (2025).
15. S Atici, H Pan, AE Cetin, "Input Normalized Stochastic Gradient Descent Training for Deep Neural Networks," *Transactions on Machine Learning Research*, 2024.
16. Pan, Hongyi, Emadeldeen Hamdan, Xin Zhu, Salih Atici, and Ahmet Enis Cetin. "Multichannel Orthogonal Transform-Based Perceptron Layers for Efficient ResNets." *IEEE Transactions on Neural Networks and Learning Systems,* (2024).
17. Ren, Yichong, Minye Yang, Hongyi Pan, Mohamed Farhat, Ahmet Enis Cetin, and Pai-Yen Chen. "PT Symmetry-Enabled Physically Unclonable Functions for Anti-Counterfeiting RF Tags." *IEEE Transactions on Antennas and Propagation*, (2024).
18. Yu, Yue, Youqian He, Hamid Reza Karimi, Len Gelman, and Ahmet Enis Cetin. "A two-stage importance-aware subgraph convolutional network based on multi-source sensors for cross-domain fault diagnosis." *Neural Networks,* 179 (2024): 106518.
19. Nastaran Darabi, M. Hashem, H. Pan, A. E. Cetin, W. Gomez, A. Trivedi, "ADC/DAC-Free Analog Acceleration of Deep Neural Networks with Frequency Transformation TVLSI-00525-2023.R1," *IEEE Transactions on Very Large Scale Integration Systems*, 2024.
20. Zhu, X., Yang, D., Pan, H., Karimi, H.R., Ozevin, D. and Cetin, A.E., 2024, "A novel asymmetrical autoencoder with a sparsifying discrete cosine Stockwell transform layer for gearbox sensor data compression," *Engineering Applications of Artificial Intelligence*, 127, p.107322.
21. Milani, Omid Halimi, Salih Furkan Atici, Veerasathpurush Allareddy, Vinitha Ramachandran, Rashid Ansari, Ahmet Enis Cetin, and Mohammed H. Elnagar. "A fully automated classification of third molar development stages using deep learning." Scientific Reports 14, no. 1 (2024): 13082.
22. Yang, M., Ye, Z., Pan, H., Farhat, M., Cetin, A.E. and Chen, P.Y., 2023, "Electromagnetically unclonable functions generated by non-Hermitian absorber-emitter," *Science Advances*, 9(36), p.eadg7481.
23. Hong, Ziliang, Emadeldeen Hamdan, Yifei Zhao, Tianxiao Ye, Hongyi Pan, and Ahmet Enis Cetin. "Wildfire detection via transfer learning: a survey." *Signal, Image and Video Processing* (2023): 1-8.
24. Atici SF, Ansari R, Allareddy V, Suhaym O, Cetin AE, Elnagar MH. "AggregateNet: A deep learning model for automated classification of cervical vertebrae maturation stages," *Orthodontics and Craniofacial Research.* 2023 Feb 28.
25. I. Kayikcioglu-Bozkir, Z. Ozcan, C. Kose, T. Kayikcioglu, and A E. Cetin. "Improving a cortical pyramidal neuron model's classification performance on a real-world ecg dataset by extending inputs." *Journal of Computational Neuroscience* (2023): 1-13.
26. Milani, Omid Halimi, Tu Nguyen, Ankit Parekh, Ahmet Enis Cetin, and Bharati Prasad. " Incident Hypertension Prediction in Obstructive Sleep Apnea using Machine Learning." *Sleep* 46, no. Supplement-1 (2023): A236-A237.
27. Badawi, Diaa, Ishaan Bassi, Sule Ozev, and A. Enis Cetin. "Deep-Learning-Based Gas Leak Source Localization From Sparse Sensor Data." *IEEE Sensors Journal* 22, no. 21 (2022): 20999-21008.
28. H. Pan, D. Badawi, I. Bassi, S. Ozev, A. Enis Cetin, "Detecting Anomaly in Chemical Sensors via L1-Kernel based Principal Component Analysis," *IEEE Sensor Letters, 2022.*
29. S. F. Atici, R. Ansari, V. Allareddy, O. Suhaym, A. E. Cetin, M. H. Elnagar, "Fully automated determination of the Cervical Vertebrae Maturation Stages using Deep Learning with Directional Filters," *PLOS-One*, 17, no. 7 (2022): e0269198. 2022.
30. Cakir, Serdar, and A. Enis Cetin. "Visual object tracking using Fourier domain phase information." *Sig-*

nal, Image and Video Processing 16, no. 1 (2022): 119-126.

31. Hongyi Pan, Diaa Badawi, Ahmet Enis Cetin, "Block Walsh-Hadamard Transform Based Binary Layers in Deep Neural Networks*," Special Issue on Accelerating AI on the Edge*, *ACM Transactions on Embedded Computing Systems*, Vol. 21, no. 6 (2022): pp. 1-25.
32. Ahmet Enis Cetin, Qing-Guo Wang, "Guest Editorial Special Issue on Adaptive Learning and Control for Autonomous Vehicles", *IEEE Transactions on Neural Networks and Learning Systems*, Vol. 32, pp: 5264-5265, Issue: 12, Dec. 2021
33. M. Nasrin, A. Trivedi, D. Badawi, A. Enis Cetin, "MF-Net: Compute-In-Memory SRAM for Multibit Precision Inference using Memory-immersed Data Conversion and Multiplication-free Operators," *IEEE Transactions on Circuits and Systems I: Regular Papers, 68, no. 5 (2021): 1966-1978.*
34. Badawi, Diaa, Agamyrat Agambayev, Sule Ozev, and A. Enis Cetin. "Real-Time Low-Cost Drift Compensation for Chemical Sensors Using a Deep Neural Network with Hadamard Transform and Additive Layers." *IEEE Sensors Journal* (2021)
35. Cetin, A. Enis, Yusuf Ozturk, Ouday Hanosh, and Rashid Ansari. "Review of signal processing applications of Pyroelectric Infrared (PIR) sensors with a focus on respiration rate and heart rate detection." (**Invited Paper**) *Digital Signal Processing* (2021): 103247.
36. Nabi, Vugar, Selim Ayhan, Emre Acaroglu, Mustafa Arda Ahi, Hakan Toreyin, and A. Enis Cetin. "Can we diagnose disk and facet degeneration in lumbar spine by acoustic analysis of spine sounds?." *Signal, Image and Video Processing* 15, no. 3 (2021): 557-562.
37. L. S. Mokatren, R. Ansari, A. Enis Cetin, Alex D. Leow, O. Ajilore, H. Klumpp, F. T. Yarman-Vural, "EEG Classification by factoring in Sensor Spatial Configuration," *IEEE Access, 9 (2021): 19053-19065.*
38. Badawi, Diaa, Hongyi Pan, Sinan Cem Cetin, and A. Enis Cetin. "Computationally Efficient Spatio-Temporal Dynamic Texture Recognition for Volatile Organic Compound (VOC) Leakage Detection in Industrial Plants." *IEEE Journal of Selected Topics in Signal Processing*, 14, no. 4 (2020): 676-687.
39. H. Pan, D. Badawi, A. Enis Cetin, "Vision Based Wildfire Detection Using Deep Additive Neural Networks," S*ignal, Image and Video Processing, 14, 675-682, 2020.*
40. Pan, Hongyi, Diaa Badawi, and Ahmet Enis Cetin. "Computationally Efficient Wildfire Detection Method Using a Deep Convolutional Network Pruned via Fourier Analysis." *Sensors* 20, no. 10 (2020): 2891.
41. Ouday Hanosh, R. Ansari, K. Younis, A. E. Cetin, "Real-Time Epileptic Seizure Detection during Sleep using Passive Infrared (PIR) Sensors," *IEEE Sensors Journal,19, no. 15 (2019): 6467-6476.*
42. M. Shahdloo, E. Ilicak, M. Tofighi, Emine U. Saritas, A. Enis Cetin, Tolga Cukur, "Projection onto Epigraph Sets for Rapid Self-Tuning Compressed Sensing MRI," *IEEE Transactions on Medical Imaging, 38, no. 7 (2018): 1677-1689.*
43. Diaa Badawi, Sule Ozev, Jennifer Blain Christen, Chengmo Yang, Alex Orailoglu A. Enis Cetin, "Detecting Gas Vapor Leaks Through Uncalibrated Sensor Based CPS," *IEEE Access, (2019): 155701-155710.*
44. Demir, H.S., Cetin, A.E, Cetin-Atalay, R. 'A visual object tracking benchmark for cell motility in time-lapse imaging,', *Signal, Image and Video Processing,* vol. 13, pp. 1063-1070, 2019
45. Salarian, M., Iliev, N., Ansari, R., & Cetin, A. E. (2018). "Improved Image-Based Localization Using SFM and Modified Coordinate System Transfer," *IEEE Transactions on Multimedia, 20, no. 12 (2018): 3298-3310.*
46. Cakir, S., Kahraman, D. C., Cetin-Atalay, R., & Cetin, A. E. (2018). Contrast Enhancement of Microscopy Images Using Image Phase Information. *IEEE Access*, 6, 3839-3850.
47. Aslam, Aasma, Babar Hussain, Ahmet Enis Cetin, Arif Iqbal Umar, and Rashid Ansari. "Gender classification based on isolated facial features and foggy faces using jointly trained deep convolutional neural network." *Journal of Electronic Imaging* 27, no. 5 (2018): 053023.
48. Yorulmaz, Onur, and A. Enis Cetin. "Deconvolution using Fourier Transform phase, ℓ_1 and ℓ_2 balls,

and filtered variation." *Digital Signal Processing* 77 (2018): 36-42.

49. Erden F., Cetin A. Enis, "Period Estimation of an Almost Periodic Signal Using Persistent Homology with Application to Respiratory Rate Measurement", *IEEE Signal Processing Letters*, 24.7 (2017): 958-962.
50. Kapu, Hemanth, Kavisha Saraswat, Yusuf Ozturk, and A. Enis Cetin. (2017) "Resting Heart Rate Estimation Using PIR Sensors." *Infrared Physics & Technology,* Volume 85, September 2017, Pages 56-61
51. Akbaş, Cem Emre, Osman Günay, Kasım Taşdemir, and A. Enis Çetin. (2017) "Energy efficient cosine similarity measures according to a convex cost function." *Signal, Image and Video Processing* 11, no. 2 (2017): 349-356.
52. Cakir, Serdar, and A. Enis Cetin. (2016) "Image quality assessment using two-dimensional complex mel-cepstrum." *Journal of Electronic Imaging* 25, no. 6 (2016): pp. 061604-061604.
53. Suhre, Alexander; Arikan, Orhan; Cetin, A. Enis, "Bandwidth selection for kernel density estimation using Fourier domain constraints, *IET Signal Processing,* Volume: 10 Issue: 3 Pages: 280-283 Published: May 2016
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55. F. Erden, S. Velipasalar, A. Z. Alkar, A.E. Cetin, "Sensors in assisted living: A survey," *IEEE Signal Processing Magazine*, Volume: 33 Issue: 2 Pages: 36-44, Mar. 2016.
56. M. Tofighi, O. Yorulmaz, K. Kose, D.C. Yildirim, R. Cetin-Atalay and A. Enis Cetin, "Phase and TV Based Convex Sets for Blind Deconvolution of Microscopic Images," in *IEEE Journal of Selected Topics in Signal Processing*, Vol: 10, Issue: 1, pp: 81-91, Feb. 2016.
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59. Erden, Fatih; Alkar, Ali Ziya; Cetin, A. Enis, "A robust system for counting people using an infrared sensor and a camera," *Infrared Physics and Technology*, Volume: 72 Pages: 127-134 Published: SEP 2015
60. M. Tofighi, K. Köse, and A. Enis Cetin, "Denoising Images Corrupted by Impulsive Noise Using Projections onto the Epigraph Set of Total Variation Function (PES-TV)," in *Signal, Image, and Video Processing*, Vol.9, S1, to be published in December 2015.
61. Z. Deprem, A. Enis Cetin, "Crossterm-free Time-Frequency Distribution Reconstruction via Lifted Projections ", *IEEE Transactions on Aerospace and Electronic Systems (T-AES),* Volume: 51 Issue: 1 Pages: 479-491 Published: JAN 2015.
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65. A. Bozkurt, Alex Suhre, A. Enis Cetin, "Follicular Lymphoma Image Classification Using Directional Filtering," special issue on *Microscopic Image Processing* in S*ignal, Image and Video Processing, Springer,* 2014.
66. Kasim Tasdemir, A. Enis Cetin, "Content Based Video Copy Detection Based on Motion Vectors Estimated Using a Lower Frame Rate", *Signal, Image and Video Processing, Springer,* 2014

67. K. Kose, O. Gunay, A. Enis Cetin, "Compressive Sensing Using a Modified Entropy Functional", *Digital Signal Processing,* 24 (2014): 63-70.013.

68. A. Enis Çetin, Thomas Pearson, R.A. Sevimli, "System for removing shell pieces from hazelnut kernels using impact vibration analysis," *Computers and Electronics in Agriculture*, Nov. 2013.

69. A. Enis Çetin, Kosmas Dimitropoulos, Benedict Gouverneur, Nikos Grammalidis, Osman Gunay, Y. Hakan Habiboglu, B. Ugur Toreyin, Steven Verstockt, "Video Fire Detection – Review," **Invited Paper**, *Digital Signal Processing*, 2013.

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A. E. Cetin, A. M. Tekalp, 'Robust Identification and Restoration of Images,' { IEEE International Conference on Circuits and Systems,} Portland, Oregon, May. 1989

R. Ansari, A. E. Cetin and S. H. Lee, 'Subband Coding of Images using Nonrectangular Filter Banks,' { Proc. of the SPIE 32nd Annual International Technical Symposium: Applications of Digital Signal Processing}, San Diego, CA, vol. 974, August 1988.

A. E. Cetin and V. Weerackody, 'Design of Vector Quantizers using Simulated Annealing,' { The 22th Annual Conference on Information Sciences and Systems,} Princeton University, Princeton, N.J., March 1988.

A. E. Cetin, 'Signal Reconstruction from Bispectrum,' {The 15th Biannual Conference on Communications}, Queen's University, Kingston, Ontario, June 1988.

A. E. Cetin and R. Ansari, ' An iterative procedure for designing two dimensional FIR filters', {International IEEE Symposium on Circuits and Systems,} Philadelphia, May 1987.

A. E. Cetin and R. Ansari, 'A procedure for antenna array pattern synthesis', {International IEEE Conference on Acoustics, Speech and Signal Processing,} Dallas, April 1987.

A. E. Cetin and R. Ansari, 'Reconstruction of signals from their Fourier domain samples by using convex programming ', {The 21st Annual Conference on Information Sciences and Systems,} Johns Hopkins University, March 1987.

A. E. Cetin and R. Ansari, 'On deconvolution using the method of projection on convex sets', {Montech-86, IEEE Conference on Antennas and Communications,} Montreal, Canada, Sept. 1986.

A. E. Cetin and R. Ansari, 'Implementation of array signal processing algorithms using systolic arrays', {Midwest Symposium on Circuits and Systems,} Lincoln, NE., Aug. 1986.

A. E. Cetin and R. Ansari, 'Digital interpolation beamforming using recursive filters',{International IEEE Antennas and Propagation Symposium,} Philadelphia, June 1986.

A. E. Cetin and R. Ansari, 'A convolution based framework for signal recovery ', {The 20th Annual Conference

on Information Sciences and Systems, Princeton University,} Princeton, N.J., March 1986; also presented at {Topical meeting, Optical Soc. of America}, Hawai, USA, April 1986

RESEARCH GRANTS AT UIC

NSF "SCC-IRG: Ember Intelligence: Building Wildfire-Resistant Communities using Unmanned Aircraft Systems and Distributed Deep Learning," PI: Erdem Koyuncu. Co-PIs: Ahmet Enis Cetin, Hulya Seferoglu, and Adam Watts (USDA), Aug 1, 2025-2028; $1,250,000.00

NSF CIVIC-PG Track B: Phase 1: Community-Driven, AI-Powered Thermal Imaging for Accessible Window Air Infiltration and Leakage Measurement, PI: Aslihan Karatas, co-PI: Ahmet Enis Cetin, Lauryn Spearing, Lucio Soibelman (Univ. of Southern California, Yu Hou, Michael Cailas (UIC). 10/01/2024 - 12/31/2025 Budget: $74,996

NIH/NIBIB R03 grant: Title: Hybrid Intelligence for Trustable Diagnosis and Patient Management of Prostate Cancer (HIT-PIRADS), Period: 06/01/2024-05/31/2025 PI: Ulas Bagci (Northwestern University) Subcontract PI: Enis Cetin Subcontract amount: $65,275

USDA Forest Service: Title: Generative AI for Vegetation monitoring software using LEO satellite/aircraft/UAV imagery Period: 06/15/2024-12/31/2024 PI: Enis Cetin. $24,497

American Association for Orthodontics Foundation, Title: Development of Novel AI Algorithms for Predicting the Risk of External Apical Root Resorption Period: 04/01/2025-03/31/2026 Amount: $75,000 PI: Dr. Mohammed H. Elnagar UIC, College of Dentistry (COD) Study Co-investigators: Sath Allareddy (UIC-COD), Ahmet Enis Cetin UIC-ECE et. al.

NSF STTR Phase I: Machine Learning-Based Smart Data Compression Solutions for Structural Health Monitoring Sensors: Start Date: 09/01/2023, End Date: 08/31/2024 (1 year); PI Yasemin Cetin (ZQAI LLC), Co-PI: Didem Ozevin CME. Enis Cetin, ECE. Total Budget: $275,000. UIC Budget: $125,000; Ozevin (50%), A. E. Cetin (50%).

NSF POSE: Phase II: An Open Source Ecosystem for Collaborative Rapid Design of Edge AI Hardware Accelerators for Integrated Data Analysis and Discovery, Investigators: UIC PI Cetin; Co-PI: Amit Ranjan Trivedi (Co-PI, UIC), UIC Budget: $257,500.

NSF Small: Electromagnetic Physically-Unclonable Functions Generated by Graphene Radio-Frequency Circuits, Award Period: 06/15/2023 - 05/31/2026; Investigators and amount: Prof. Pai-Yen Chen's share $320,000; Prof. Cetin's share $100,000.00

American Association of Orthodontists Foundation (AAOF), Developing an AI Diagnostic Support System for Interpreting Dental and Craniofacial Images" PI: Elnagar (co-investigators: Sath Allareddy, A. Enis Cetin, and Rashid Ansari) Award Category: Biomedical Research Award (BRA), $32K, July 2023-June 2024.

Department of Energy, "Pixel-Integrated Neural Processing for High Precision Readout of Collision Events," Team: Amit Ranjan Trivedi (PI), Ahmet Enis Cetin (Co-PI - 20%), and Corrinne Mills (Physics, Co-PI) $450K, Nov 1, 2022 - Dec 31, 2025 $ 450,000.

NSF Program: HDR-Harnessing the Data Revolution: "IDEAL: Institute for Data, Econometrics, Algorithms and Learning (IDEAL)" Aug.1 2022-Sept. 2027, Avrim Blum (PI) Toyota Technological Institute, Aravindan Vijayaraghavan, Northwestern University (PI), Lev Reyzin (UIC-PI), Cetin (Senior Personnel 0.08 % share), UIC budget $3,180,000.00

Discovery Partners Institute (DPI)- FermiLab Seed Grant "Democratization of AI Hardware with an Open Source Automated AI-Chip Design Toolkit," DPI Sept. 2022-April 2024, $125K (Total budget $250K). PIs: A. Trivedi and A. Enis Cetin (Equal share).

INTEL LABS "Scalable Multibit Precision In-SRAM Deep Neural Network Processing by Co-designing Network Operators with In-Memory Computing Constraints," $150 K, July 1, 2020 - June 30, 2023, Amit Ranjan Trivedi (PI) and A. Enis Cetin (Co-PI) 10% share.

NSF "SBIR Phase I: AI Enabled Cameras for Fire Detection," NSF, July 1, 2020 - March 31, 2021, Ahmet Enis Cetin (PI), Emilio Pineda (PI in Volant Aerial Inc), Total budget $250K, UIC Share $24K.

NSF Award Title: "Accurate, Contiguous and Portable Wireless Intraocular Contact Lens Pressure Sensors," *NSF I-Corps*, Technical Lead: Pai-Yen Chen, Mentor: A. Enis Cetin, $50K, 2019.

Discovery Partners Institute "Computationally Efficient Vehicle Control via Machine Learning," ($250K),

University of Illinois, PI. E. Koyuncu (PI) A. E. Cetin (co-P1 30% share), H. Seferoglu (Co-PI). Sept. 2019 - August 2022.

NIH SBIR Phase-1 Grant with eNURSING, LLC. Title: "Device to Measure Pain using Facial Expression Recognition Integrated with Patient PAINReportIt® Tablet," R. Ansari (PI), A.E. Cetin Co-PI (50% share), and D. Wilkie (PI in eNURSING), 2019; UIC budget 50K.

Seagate Technologies: May 2019-May 2020, Title: "Cooperative Implementation of Computationally Efficient GAN Neural Networks at the Edge". Cetin (PI). E. Koyuncu (Co-PI), H. Seferoglu (Co-PI); UIC budget: $70K

VolantAerial Inc: ($50K) "Deep learning based wildfire detection using cameras placed on a drone," A. E. Cetin PI, April 2019-April 2020.

NSF Award Title: "CPS: Medium: Collaborative Research: Constantly on the Lookout: Low-cost Sensor Enabled Explosive Detection to Protect High Density Environments," NSF; Oct. 2017- Oct. 2021, PI: A.E. Cetin $140K, UIC, PI: Alex Orailoglu (UCSD), PI: Sule Ozev (ASU), Chengmo Yang (University of Delaware).

Seagate Technologies, Award Title: Unusual Event Detection in Video Using Computationally Efficient Algorithms, A. Enis Cetin (PI), E. Koyuncu (Co-PI), H. Seferoglu (Co-PI) Funding Source: Award Duration: 05/25/2018 – 05/24/2019, Award Amount: $67,292

NVIDIA GPU Hardware Grant, Award Title: GPU for multiplication free neural networks, $8900.00, 05/01/2018 PI: A.Enis Cetin

INTERNAL GRANTS:

UIC Proof of Concept (POC) award, "Aircraft Crash Survivor Behavioral Modeling," PI: John Monaghan (LAS), Co-PI (Cetin) Total: 50K, (ECE Share $9000.00), 2023. Internal Grant.

Chancellor's Translational Research Initiative (CTRI), "Aircraft Crash Survivor Behavioral Modeling," PI: John Monaghan (LAS), Total: 25K, Cetin *Collaborator* (ECE Share $4500.00), 2022.

RESEARCH GRANTS at UCSD, Bilkent University and University of Toronto

"Energy efficient Multiplication free neural networks", *Qualcomm Foundation*, $50K, awarded to UC San Diego. PI: Prof. T. Nguyen, Co-PI: Cetin Sept. 2016-Sept. 2017.

"Computer Assisted Florescent Microscopy System and Applications," Joint Grant with *Fraunhofer Institute, Turkish Scientific and Technical Research Council (TUBITAK)* and *German BMBF, 230*K US Dollars, Jan. 2014-Dec. 2015, Co-PI: Dr. Thomas Whittenberg, Fraunhofer Institute, Erlangen-Nurnberg.

Bilkent – Fraunhofer IIS cooperation in microscopic image analysis – BILKMIC, Fraunhofer Institute Erlangen-Nurnberg, 50000 Euros, 2015.

Fall Detection System for Elderly, *Turkish Telecom*, 70K US Dollars, 2011-Dec. 2013.

Sparsity in Signal and Image Processing, *Turkish Scientific and Technical Research Council (TUBITAK),* 75K US Dollars, 2011-2013.

FIRESENSE (Fire Detection and Management through a Multi-Sensor Network for the Protection of Cultural Heritage Areas from the Risk of Fire and Extreme Weather Conditions, FP7-ENV-2009-1–244088-FIRESENSE), *European Commision* FP-7 grant, 534,000 Euros = about 650K US dollars, started in December 2009. Duration 39 months.

MIRACLE (Microscopic Image Processing, Analysis, Classification and Modelling Environment, FP7-PEOPLE-2009-IRSES), *European Commission* FP7 grant, 70000 Euros, started in May 2010, 46 months.

"Forest Fire Detection using a Camera Network, (Orman yanginlarini goruntu isleme teknikleri kullanarak bulma ve izleme projesi)", TUBITAK-1007 ve Orman Genel Mudurlugu, *General Directorate of Forestry* 750,000. YTL (about 500,000.00 US Dollars), 2007-2009. **The wildfire detection system is installed in more than 100 look-out towers**. **The system successfully detected many wildfires since 2008.**

"Multimedia Understanding Through Computation and Semantic Learning", MUSCLE: Funded by *European Community* EC-FP6, 2004-2008; Scientific Committee Member, WP-7 Leader, 250 000 Euros.

"3DTV" Network of Excellence, Funded by *European Community* EC-FP6, WP-5 Leader. PI: Prof. Levent Onural, Co-PI: A. Enis Cetin.

"IP Camera Integration to CCTV systems," *Visioprime Ltd. Surrey*, UK, $50000, January-December 2006.

"Camera Sabotage detection for CCTV systems,' *Honeywell Video Systems*, UK, $100000, 2005.

"Motion detection for an Omnidirectional Camera,' *Grandeye Ltd,* UK, $35000, 2004.

"Left object detection in video using background subtraction,'' *Visioprime Ltd.* Surrey, UK, $70000, January-December 2003.

"Moving object detection in video using background subtraction," *Visioprime Ltd. Surrey*, UK, $13500, August-October 2002.

"Motion Detection in Video," *Visioprime Ltd. Surrey,* UK, $10000, June-August 2001.

'Ultrasparc 60 Workstation for Speech Recognition research,' Equipment grand, SUN-Microsystems, $10000, January 2000.

'Target Detection and Tracking in Video,' (joint grant with Mubeccel Demirekler, and Y. Yardimci), *ASELSAN*, Ankara, Turkey, $104000, nov. 1999- nov. 2000.

'Studies in Color Image Processing,' (with Prof. A. N. Venetsanopoulos), NATO *Collaboration in Science Grant*, $6000, 1998.

'Speech recognition over telephony,' {*COST-249, European Community and Turkish Scientific and Technical Research Council*}, $15000, 1997.

'Audio-visual information management systems' (Collaboration grant with A. H. Tewfik of University of Minnesota), { *National Science Foundation (NSF*), } USA, $34000, July 1993-June 1996.

'Studies in Image Restoration-I-III', (with M. Tekalp of University of Rochester) *NATO*, *Collaboration in Science grant*, $15000, November 1991 -- May 1995.

'Voice Dialing for Mobile Systems' *ASELSAN*. A.S., Ankara, Turkey, 500,000M TL, (with Prof. Mubeccel Demirekler of METU), 1994.

'Speech Processing Workstation,' *Jandarma Genel Komutanligi-Kriminoloji Dairesi*, 3,000,000 TL, (approximately $100 K), (with Prof. Mubeccel Demirekler of METU) Jan. 1995-Dec. 1995.

'EUREKA-625: VADIS Video-Audio digital interactive system,' *Turkish Scientific and Technical Research Council*, *TUBITAK*, 1992- May 1995 (700 000 M TL for 1994).

'Implementation of speech vocoders using a digital signal processor,' $14000, *STFA-Savronik, Inc.,* June 1991 --July 1992.

'Feasibility Study of a Medical Picture Archiving and Communication System in Turkey', (one of the three principle investigators), *Turkish State Planning Office*, $30000, April 1991 -- March 1992.

'Studies in Image Coding and Processing', *National Scientific and Technical Research Council (NSERC)-Canada,* Operating Grant: $47,880, April 1988 - April 1991.

'Studies in Signal Reconstruction', *University of Toronto Connaught Fund*: $10,000, May 1988- May 1989.

Information Technology Research Center: $260,000, Jan. 1988 - Jan 1990, (one of the six principal investigators). University of Toronto.

AT&T, Digital Signal Processing Hardware: $3550.

Wildfire Detection Software License Sales from Bilkent University:

Delacom Detection Systems, LLC; US Department of Energy; San Diego Gas and Electric; MILSOFT, Turkey; Flatdis, South Korea; Greece; Singapore.

INVITED LECTURES AND TALKS

"Computationally efficient methods for machine learning," Pleanary Talk, WOLIT, Tsinghua University, Shenzen, August 2024

"Robust Multiplication-Free Kernels Related with L1-Norm and Machine Learning Applications," The Swiss AI Lab IDSIA (Istituto Dalle Molle di Studi sull'Intelligenza Artificiale) - SUPSI, June 24, 2022, Lugano, Switzerland.

"Robust Multiplication-Free Kernels Related with L1-Norm and Machine Learning Applications," Schlumberger, (on-line talk), Jan. 21, 2022

'AI for early detection and georeferencing of wildfires' Emilio Pineda and A. Enis Cetin in online *Tactical Fire Remote Sensing Advisory Committee Meeting*" organized by USDA and NASA on December 1-2, 2021.

'PIR Sensor Based Epilepsy Detection During Speech," *University of Chicago, Dept. of Neurology, School of Medicine,* June 2018.

"Video Based Wildfire Detection in an Active Learning Framework", *National Institute of Advanced Industrial Science and Technology*, Tokyo, Japan, February 2017.

"Phase and Total Variation Based Blind Deconvolution," 02/19/2016, *North Carolina State University*, Dept. of Electrical and Computer Engineering, Raleigh, NC.

"Phase and Total Variation Based Blind Deconvolution," 05/2016, Dept. of Electrical and Computer Engineering, *University of California at San Diego.*

"Phase and Total Variation Based Blind Deconvolution," August 23, 2016, Dept. of Electrical and Computer Engineering, University of California Los Angeles (UCLA).

"Video Based Wildfire Detection in an Active Learning Framework", *Robotics Institute, VASC Seminar, Carnegie-Mellon University*, June 25, 2014.

"Projections Onto Convex Sets (POCS) Based Optimization by Lifting and Sparsity Based Signal Processing' Invited talk, IEEE Signal Processing Society Chicago Section, Chicago, July 2013.

"Review of Signal and Image Processing Research at Bilkent University" Fraunhofer Institute, Erlangen-Nurnberg Germany, July 2012.

"Signal Processing Research at Bilkent University" on 28 Nov. 2010, Texas A&M University, Qatar.

"Wild Fire Detection using LMS based Active Learning", University of Guelph, Canada 2010

"Wild Fire Detection using LMS based Active Learning", Stony Brook University, New York, May 2010

"Wild Fire Detection using LMS based Active Learning", Ohio State University, Columbus, Ohio May 2010

"A framework for decision fusion with applications to forest fire detection in video," IEEE Toronto Section, Nov. 2009.

Plenary Talk Invitation in IEEE International Symposium on Signal Processing and Information Technology (ISSPIT 2009) UAE, 2009. I couldn't give the talk because I had to attend an European Commission project review meeting.

"Computationally efficient adaptive filtering algorithms," Medtronic Research Center, Minnesota, June 2006.

"HMM Based Falling Person Detection Using Both Audio and Video", Izmir Yuksek Teknoloji Enstitusu, Izmir, August, 2005

'Adaptive wavelet transform/subband decomposition', at Transforms and Filter Banks Workshop at Technical University of Brandenburg, Germany, March 1999.

'Subband Analysis for Robust Speech Recognition in the Presence of Car Noise', Nokia Research Center, Tampere, June 1998.

'Higher order statistical signal processing and applications,' University of Minnesota, Minneapolis, February 1997.

'Signal Recovery from Wavelet Transform Maxima,' University of Rochester, NY, June 1994.

Signal Recovery from Wavelet Transform Maxima,' University of Toronto, Canada, June 1994.

'Block wavelet transform based image compression,' AT&T Bell Laboratories, Murray Hill, NJ, August 27, 1992.

'Block wavelet transform based image compression,' University of Rochester, NY, July 1992.

'Compression of digital ECG signals,' University of Toronto, July 31, 1991, Toronto, Canada.

'Nonrectangular Wavelets: Application to Image Coding', University of Toronto, April 27, 1990, Toronto, Canada.

'Image Compression in HDTV', IEEE Toronto Circuits and Systems Section, May 1989, Canada.

'A pyramid and a nonrectangular subband coding based HDTV signal coding methods', Communications Research Center, Ministry of Communications, Dec. 1988, Ottawa, Canada.

TEACHING EXPERIENCE

Developed the following courses at UIC:

- Introduction to Neural Networks
- Introduction to Deep Neural Networks (Online Master of Engineering Program)
- Digital Speech Processing
- Image Analysis and Computer Vision (Online Master of Engineering Program)

Developed the following courses at UC San Diego and Bilkent University, Ankara, Turkey:

- Android (or iPhone) based DSP Laboratory, 2015-2016
- Digital Coding of Waveforms, 1988
- Introduction to Wavelets and Applications, 1988.

{Graduate Courses}: Pattern Recognition, Image Processing, Speech Processing, Advanced Topics in DSP, Random Processes, Digital Coding of Waveforms, Detection and Estimation, Multirate and Multiscale Signal Processing, Digital Signal Processing Laboratory, Introduction to Deep Neural Networks.

{Undergraduate Courses}:

Introduction to Probability, Introduction to Statistics, Linear Algebra and Differential Equations, Signals and Systems, Digital Signal Processing, Basic Circuit Theory, Introduction to Electronics, Calculus.

GRADUATE STUDENT SUPERVISION

1. Lubna S. Mokatren, Ph.D. Thesis: "New Approaches in Nonlinear Analysis and Modeling of Multichannel Signals," The University of Illinois Chicago, May 2026.
2. Shuaiang Rong, Ph.D. Thesis: "Trainable Pre-filtering for Deep Neural Networks and Applications,' May 2026.
3. Xin Zhu, Ph.D. Thesis: "Transform Domain Deep Neural Network Layers and their Applications," University of Illinois Chicago, December 2025.
4. Salih Atici, Ph.D. Thesis: " Input-normalized training algorithms for Neural Networks with applications to X-ray images," May 2024, The University of Illinois Chicago, currently working at Apple, Cupertino, CA.
5. Hongyi Pan, Ph.D. Thesis: "Orthogonal Transform Based Neural Network Layers," May 2023, The University of Illinois Chicago, currently postdoc at Northwestern University, Chicago, IL.
6. Diaa Badawi, Ph.D. Thesis: "Machine Learning and Signal Processing Algorithms for a CPS with Chemical and Infrared Sensors," July 2022, The University of Illinois Chicago, currently at Cadence, CA.
7. Ouday Hanosh, Ph.D. Thesis: "Motion-based thermal sensing for Health Monitoring Systems (HMSs) and healthcare applications", Feb. 2021, University of Illinois Chicago. (Joint supervision with R. Ansari).
8. Onur Yorulmaz, Ph.D. Thesis: 'Deconvolution Methods Based on Fourier Transform Phase and Bounded Energy, August 2018, Bilkent University, Ankara, Turkey. (Meteksan-Savunma Turkey)
9. Serdar Cakir, Ph.D. thesis: 'Phase Based Techniques For Image Processing Applications,' Dec. 2017, Bilkent University, Ankara, Turkey. (Researcher at Turkish Scientific and Technical Research Council (TUBITAK)

10. Fatih Erden, PhD thesis: “IR sensor and video processing based systems,” 2016, Co-supervisor, Ali Ziya Alkar, (Senior ML Engineer at 2K Games, California).
11. Osman Gunay, Ph.D. thesis, “Video Processing Algorithms For Wildfire Surveillance,” May 2015. *Received the best Ph.D. award given by the German Company ISRA-VISION in IEEE SIU Conference.*
12. Zeynel Deprem, {Ph.D. Thesis} “Cross-term Time-Frequency Distribution Reconstruction via Lifted Projections”, December 2014. Turkish Aeronautical Association University.
13. Ibrahim Onaran, {Ph.D. Thesis} “Spatial Decoding of Oscillatory Neural Activity for Brain Computer Interfacing” May 2013. Assistant Prof. At Mevlana University (used to be a Post-doc at University of Minnesota and Univ. of Houston).
14. Alexander Suhre {Ph.D. Thesis}, “Novel Methods for Microscopic Image Processing, Analysis, Classification and Compression,” March. 2013. R&D Engineer at Valeo (http://www.valeo.com/en/), Stuttgart, Germany.
15. Kivanç Köse, {Ph.D. Thesis}, “Signal And Image Processing Algorithms Using Interval Convex Programming And Sparsity,” Dec. 2012 (Currently, senior research scientist at Memorial Sloan Kettering Cancer Center, New York).
16. B. Ugur Toreyin, {Ph.D. Thesis}, “Dynamic textures in video and applications,” Dec. 2008 (Currently, full Professor at Technical University of Istanbul (ITU), Turkey.
17. Metin N. Gurcan, {Ph.D. Thesis}, “ Computer-Aided-Diagnosis in Radiology,'' 9/95 - 3/99 (Currently, Prof. and Director of the Center for Biomedical Informatics, Assoc. Dean at Wake Forest University, NC).
18. Omer Nezih Gerek, {Ph.D. Thesis:}, “Image Coding for Digitized Libraries,'' 9/93 - 9/98 (Currently full Professor at Eskisehir Technical University, Turkey).
19. Engin Erzin, {Ph.D. Thesis:} “New Methods for Robust Speech Recognition,'' Bilkent University, 9/92 - 9/95 (Currently, Assoc. Dean and full Prof. at Koc University, Istanbul, Turkey, he was a Member of Tech. Staff at Lucent-Bell Labs before joining Koc University in Istanbul)
20. S. Alshebeili, {Ph.D. Thesis:} “Volterra-Type Systems and Polyspectra'', University of Toronto, (co-supervisor: Prof. A. N. Venetsanapoulos) 9/88 - 1/92. (Currently Professor in Saudi Arabia.)

Current Ph.D. Students:

Omid H. Milani (UIC): Sleep monitoring using multiple sensors

Emadeldeen Hamdan (UIC): Computationally efficient implementation of deep learning methods

Yingyi Liu (UIC): Just started.

Ene Meco (UIC): Just started.

M.Sc. Students:

- Vittorio Palladino, M.Sc. Thesis, " Quantum Computing Using Haar Wavelet Transform," 2026

- P. Sajith, M.Sc. Thesis, " Distance Estimation From Stereo Using Deep Learning Methods with Orthogonal Transforms," 2026

- Amru Qutub, M.Sc. Thesis“Windfarm monitoring and power estimation using sensor data and machine learning, University of Illinois at Chicago, May 2024

- Akhash Subramanian Shunmugam, M.Sc. Thesis“Voice-assisted Smart Guidance System for Indoor Navigation for the Visually Impaired,"University of Illinois at Chicago, (Joint supervision with R. Ansari), Dec. 2023

- Guglielmo Menchetti, M.Sc. Thesis“Multi-Scale Region of Interest Pooling for Facial Action Unit Detection”, University of Illinois at Chicago, May 2020.

- Diaa Hisham Jamil Badawi, M.Sc. Thesis, Convolutional Neural Networks Based on Non-Euclidean Operators, Bilkent University, Jan 2018.

-Maen Mallah, M.Sc. Thesis, “Multiplication Free Neural Networks," Bilkent University, Jan 2018.

-Tuba Ceren Deveci, M.Sc. Thesis, “Image Classsification With Energy Efficient Hadamard Neural Networks,’ Bilkent University Jan. 2018.

- H. Seckin Demir, M.Sc. Thesis, “Visual Object Tracking Using Co-difference Features,” Bilkent University, 2017

-M. Arda Ahi, M.Sc. thesis: “Analysis of Spine Sounds for Spinal Health Assessment,” 2017.

- Oguzhan Oguz, M.Sc. thesis, “ Image Processing Algorithms For Histopathological Images,” 2016.

- Gökmen Can, M.Sc. Thesis: Classification of Vessel Acoustic Signatures Using Non-linear scattering-based feature extraction, Sept. 2016

- M. Tofighi, M.Sc. Thesis title: Image Reconstruction Using Projections onto Epigraph Set of Convex Cost Functions, 2015.

- M.T. Arslan M.Sc. Thesis: “Range Resolution Improvement in Passive Bistatic Radars Using Deconvolution”, 2015.

- Sebastian Hettenkofer, “Microscopic image processing”, in 2014.

- Rasim Akin Sevimli, “Target Detection and Imaging on a Passive Bistatic Radar System,” August 2014.

- Alican Bozkurt, Comparison of Multi-scale Directional Feature Extraction Algorithms for Image Processing, August 2013.

- Ahmet Yazar, Multi-Sensor Based Ambient Assisted Living System, 2013.

- Musa Furkan Keskin, M.Sc., “Image Processing Methods for Computer-Aided Interpretation of Microscopic Images, Sept. 2012.

- Osman Gunay, “Smoke Detection in moving video” 2010.

- Kivanc Kose, M.Sc. “3-D mesh coding using wavelet analysis,” joint supervision with L. Onural, 2008.

- Ibrahim Onaran, M.Sc.“Impact acoustics based classification of kernels,” Jan. 2006.

- Mehmet Turkan, M.S., “Human face detection in video,” Sept. 2006.

- Mete Kart, M.Sc. “Speaker Dependent Speech Coding,” 2006.

-Berkan Dulek, M.Sc. “Signal and Image Processing Algorithms for Agricultural Applications,” Nov. 2005.

- Halil Cuce M.Sc., “Mean-shift Analysis for Image and Video Applications,” June 2005.

- H. Emre Guven, M.Sc. “Signal recovery from partial Fractional Fourier Transform Domain information,” July 2005, joint supervision with H. Ozaktas.

- Murat Bagci, M.Sc. “Moving Object Detection in Video,'' July 2001.

- Khaled ben Fatma, “Gaussian Mixture Model Design and Applications,'' 01/2000.

- Gul Aydin, “Robust adaptive filtering algorithms for impulsive noise environments,” 1996

- Rabi Zeibi, M.Sc. Thesis, “Change Detection in Video Signals,'' 12/99.

- A. Erdem Ertan, “Variable bitrate MELP voice coding,'' 1999.

- Cigdem Eroglu, “CT and MRI Image Registration,” 1997.

- Firas Jabloun, M.Sc., “Large Vocabulary Speech Recognition in noisy environments,'' 8/98.

- Gozde Bozkurt, M.Sc., “Inverse Dithering of Digital Color Images,'9/96 - 8/98.

- Hakan Solmaz, M.Sc., “Computationally Efficient Speech Recognition for voice dialing,'' 8/98.

- Arcin Bozkurt, M.Sc., “Speech Segmentation using wavelet transform,'' 9/96 - 1/99.

- Engin Erzin, M.S. Thesis: “Low bit rate speech coding and a new method for interframe differential coding of line spectrum pairs,'' 9/90 - 9/92.

- Omer Nezih Gerek, M.S. Thesis: “Design and Implementation of a PC based Medical Image Workstation'', 9/91 - 7/93.

- Emre Gunduzhan, {M.S. Thesis:}, “Coding of Speech and Image Signals Using Gabor Decomposition'', 9/92 - 7/94.

- Firat Kilic, {M.S. Thesis:}, “Multiresolution lossless medical image coding'', 9/91 - 7/93.

- Cengiz Aydin, {M.S. Thesis:}, “Digital ECG data compression using multirate signal processing techniques'', 9/89 - 7/91.

Post-docs and visitors:

- Marouane Tliba, "Medical Image Analysis", Currently Assoc. Research Fellow at Université de Sorbonne Paris Nord, France.

- Hakan Töreyin, “Sound and vibration recording”, 2016-2017. He is currently Associate Professor at San Diego State University.

- Kasim Tasdemir, “Wildfire Detection Research,” 2015. Currently AI/ML Engineer, OpenAsset, London, UK.

- Wenhua Chu, {Visiting Scholor}, “Research on 3-D DCT based Video Coding'', University of Toronto, 9/88 - 8/89.

- Onay Urfalioglu, European Commission FP6-MUSCLE Scholar, 2007-2011. (Currently, at Head of Artificial Intelligence at Big Data in Manufacturing GmbH, Germany).

- Eugen Zaharescu, European Commission FP6-MUSCLE Scholar, 2006.

-Alaa Eleyan, TUBITAK scholar, 2012 (Currently Assoc. Prof. at Ankara Bilim Univeristy, Turkey).

- Florian Schuh, Fraunhofer Institute, Erlangen Nurnberg, Germany, Visitor, 2012.

PROFESSIONAL AWARDS

[2025] E. Hamdan and S. Rong Ph.D. student team: NASA Beyond the Algorithm Challenge Finalist: Quantum Computing Methods for Earth Sciences https://www.nasa-beyond-challenge.org/project-gallery-finalists

[2024] Supervised a team of students headed by Ph.D. Students E. Hamdan and S. Rong, Runner-Up, NASA MSI Incubator Wildfire Climate Tech Challenge (Award: NASA I-Corps Accelerator Program Participation).

[2023] UIC College of Engineering Advising Award.

[2022] UIC College of Engineering Teaching Award.

[2015] Ph.D. student Osman Gunay’s Ph.D. thesis, “Video Processing Algorithms For Wildfire Surveillance,” received the best Ph.D. award given by the German Company ISRA-VISION (https://www.isravision.com/en/) in *IEEE Signal Processing and Applications* Conference.

[2015] Top 10% Recognition: Osman Gunay and A. Enis Cetin, “Real-time Dynamic Texture Recognition using Random Sampling and Dimension Reduction,” was recognized as part of the “Top 10%” papers in IEEE Image Processing Conference (ICIP) 2015.

[2014]: Students M. Tofighi and A. Bozkurt received the best student paper award in *IEEE Signal Processing and Applications Conference*, April 2014.

[2012] Best paper award “Flame Detection For Video-Based Early Fire Warning For The Protection Of Cultural Heritage,“ *4th International Conference On Progress In Cultural Heritage Preservation,* **Organized by UNESCO and Cyprus Presidency of the European Union,** November 2012.

[2010] Fellow of IEEE, for contributions to signal recovery and image analysis algorithms.

[2010] Top 10% paper award, 2010 IEEE International Workshop on Multimedia Signal Processing, Fuat Cogun (Bilkent University, Turkey); A. Enis Cetin (Bilkent University, Turkey) “Object Tracking under Illumination Variations using 2D-Cepstrum Characteristics of the Target ”.

[2010] Public funded best project award in Environment and ICT area “Wildfire Detection System based on Cameras”, TUSIAD (Turkish Industry & Business Association). The award was presented by the Speaker of the Turkish Grand National Assembly, Mr. M. Ali. Sahin.

[2008] Security Innovation of the Year Award: The wide-angle camera that we designed at Grandeye Vision

won the Security Innovation of the Year Award, IFSEC, UK. http://www.oncamgrandeye.com/

[2006] Grandeye Vision Camera won the Best in Show Award, International Security Conference West (ISC West), Las Vegas.

[2005] Grandeye camera "Vista eclipse™" won the 'Best New CCTV Product' at Security Industry Innovation Awards 2005, IFSEC, Birmingham, UK.

[2002-2005]: Young Scientist Award, Turkish Academy of Sciences

[1993]: TUBITAK (Scientific and Technical Research Council of Turkey) Young Scientist Award

[1980-1984]: TUBITAK Undergraduate Fellowship

SERVICE at University of Illinois

- Member, UIC Senate, 2024-
- Executive Committee Member, Discovery Partners Institute, University of Illinois System, 2025-2026
- Member, Faculty Search Committee, 2024
- Co-Chair, Faculty Search Committee, 2023
- Member, Bridge-to-Faculty Search Committee, 2021
- Reviewer, Office of Technology Management (OTM)
- Reviewer, Discovery Partners Institute

PROFESSIONAL SERVICE and ACHIEVEMENTS

{Editor-in-Chief}, *Signal, Image and Video Processing, Springer-Nature*, SCI Impact Factor 2.7, March 2013-

{Co-Organized Special Issue}, Adaptive Learning and Control for Autonomous Vehicles", *IEEE Transactions on Neural Networks and Learning Systems, Dec. 2021*

{Editorial Board Member}, *IEEE Signal Processing Magazine*, 2013-2016.

{Special Issue Editor}, Signal Processing for Ambient Assisted Living System, *IEEE Signal Processing Magazine*, 2015.

{Assoc. Editor,} *IEEE Trans. on CAS for Video Technology*, 2014-2016.

{Fellow of IEEE}, for contributions to signal recovery and image analysis algorithms, 2010-

{Editorial Board Member,} *Signal Processing* (EURASIP: European Signal Processing Society), 2006-2010.

{Editorial Board Member,} *Journal of Advances in Signal Processing* (EURASIP: European Signal Processing Society), 2007-2011.

{Associate Editor,} *Journal of Machine Vision and Applications*, 2008-2014.

{Associate Editor,} *IEEE Transactions on Image Processing*, 1999-2003.

Member of the SPTM Technical Committee of IEEE Signal Processing Society

Member of the DSP Technical Committee of IEEE Circuits and Systems Society

Technical Co-Chair: International Workshop on Computational Intelligence for Multimedia Understanding, IWCIM 2015, Prague, Czech Republic 29-30 October 2015

Technical Programme Co-Chair, EUSIPCO-2005, European Signal Processing Conference, Antalya, Turkey, 2005.

Organizing Committee Member, IEEE Nonlinear Signal and Image Processing Conference, Grado, Italy, 2003

Chairman, IEEE-EURASIP Nonlinear Signal and Image Processing Workshop (NSIP), Antalya, June 20,23, 1999.

IEEE Signal Processing Society, Region 8 Representative (includes Europe, Middle East and Africa), 2003.

Founder and Chairman, IEEE Signal Processing Society Chapter in Turkey Section, 1990-1992.

Vice-Chairman, IEEE Turkey Section, 1994-1995.

International Committee Member, COMCON'95 (International Conference on Communications and Control),

Greece, 1995.

Technical Committee Member of VCIP'96-98, (SPIE-IEEE Visual Communications and Image Processing), Florida, U.S.A.

Organizing Committee Member, BILCON'90, Istanbul, Turkey

{Reviewer}: National Science Foundation (NSF), NIH, DoD, NOAA, Turkish Scientific and Technical Research Council; Danish Science Foundation, Denmark; European Commission (EC) Framework Programme, FP-6 and FP – 7; Vienna Science Foundation, Austria, Romanian Science Foundation, Belgium Science Foundation (Flaman part), NSERC National Science and Engineering Research Council, Canada.

{Reviewer}: IEEE Trans. Signal Processing, IEEE Trans. Image Processing, IEEE Trans. on Speech and Audio Processing, IEEE Signal Processing Letters, IEEE Trans. on Communications, IEEE Trans. on Circuits and Systems, IEEE Trans. on Circuits and Systems for Video Technology, SIAM Journal of Imaging, Fire Safety Journal, Journal of Visual Communication and Image Representation, Signal Processing, Image Communication (EURASIP), Digital Signal Processing.

Reviewed researchers for promotion for *Israel Institute of Technology; University of Michigan; Nanyang Technical University, Singapore; Institute of Computer Science (ICS) of the Foundation for Research and Technology - Greece (FORTH); King Saud University, Saudi Arabia; Middle East Technical University, Bogazici University, Anadolu University, Turkey, Ryerson University, Canada.*

Ph.D. Jury Duty in Other Universities: University of Toronto, Telecom Paris (France), Delft University of Technology (Holland), Tampere University of Technology (Finland), University of Tartu, (Estonia).

MEMBERSHIPS

Fellow, IEEE, Institute of Electrical and Electronics Engineers

Member, EURASIP (European Society of Signal Processing)

Member, Turkish Chamber of Electrical Engineers (EMO)

Member, Turkish Science Academy (em.bilimakademisi.org) which is a member of ALLEA (All European Academies) and a member organization of ISC (International Science Council).