CURRICULUM VITAE

Nizamettin AYDIN

Table of Content

I. BIOGRAPHY

NAME:

Nizamettin AYDIN

CONTACT

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ACADEMIC APPOINTMENTS

2009 - to date : Professor, Computer Engineering Department, Faculty of Electrical Engineering and Electronics, Yildiz Technical University, TR.

2016 - to date : Head, Computer Science Division, Computer Engineering Department, Yildiz Technical University, TR.

2014 - 2016 : Dean, Faculty of Electrical Engineering & Electronics, Yildiz Technical University, TR.
As Dean, I managed a large faculty comprising 4 established departments (Computer Eng., Control and Automation Eng., Electrical Engineering, Electronics and Communication Eng.) and lead foundation of Biomedical Eng. Department.

2011 - 2017 : Head of Computer Engineering Department, Yildiz Technical University, TR.
Managed the department (consisting of more than 800 students and 50 staff) for 6 years. Under my leadership, Computer Engineering department was consistently getting the best students amongst all the departments of YTU. I involved in enhancement of existing curriculum and lead the development of a new graduate program (Information Technology MSc Program without thesis)

2006 - 2009 : Professor, Software Engineering Department, Faculty of Engineering, Bahçeşehir University, TR.

2006 - 2008 : Founding Head of Software Engineering Department, Bahçeşehir University, TR.
I founded the Software Engineering Department and lead the curriculum development.

2004 - 2006 : Associate Professor, Computer Engineering Department, Faculty of Engineering, Bahçeşehir University, TR.

2004 - 2006 : Head of Computer Engineering Department, Bahçeşehir University, TR.

2001 - 2004 : Senior Research Fellow, Institute for Micro and Nano Systems, School of Engineering & Electronics, University of Edinburgh, UK.
Involved in low power SoC design, development of digital communication algorithms, and communication protocols. I designed a spread-spectrum digital communication system for an ingestible capsule, some computational ASIC systems such as complex Wavelet transform processor employing bank of correlators, and have developed wavelet based DSP algorithms to process the Doppler signals obtained from patients under shock. I also supervised a number of students in Institute of System Level Integration, Livingstone.

2000 - 2001 : Postdoctoral Research Fellow, Clinical Neurosciences, St Georges Hospital Medical School, University of London, UK.

Involved in theoretical and practical digital signal processing research. I proposed a complex wavelet transform algorithm for processing complex quadrature signals, which earned me prestigious the IEE Premium Award for 2000/2001, and designed a novel Fast wavelet transform based online embolic Doppler signal analysis and detection system. I also provided computing and IT support to the department.

1998 - 2000   : Postdoctoral Research Fellow, Department of Clinical Neurosciences, Institute of Psychiatry, King's College London, UK.
Conducted research for enhancement of FFT based embolic Doppler signal processing algorithms applications of wavelet transform for analysis and detection of embolic signals and provided computing and IT support.

1999 - 1999   : Associate Professor, Electronics Engineering Department, Gebze Institute of Technology, TR.

1995 - 1999   : Assistant Professor, Electronics Engineering Department, Gebze Institute of Technology, TR.
Involved in teaching, student supervision, consultancy, and various research.

1995 - 1998   : Vice Head of Department, Electronic Engineering Department, Gebze Institute of Technology, TR.

1994 - 1995   : Research Scientist, Department of Medical Physics, Leicester Royal Infirmary, UK.
Developed digital signal processing algorithms using Lucent (AT&T) DSP32C floating point processor (demodulation, time-frequency analysis, etc) for processing quadrature Doppler signals.

1986 - 1989   : Teaching & Research Assistant, Electrical Eng. Department, Yildiz Technical University, TR.
Involved in some teaching and supervision of electronic circuits, measurement and instrumentation, and digital design labs.

ACADEMIC BACKGROUND

PhD: Department of Medical Physics, University of Leicester, Leicester, UK, 1994.

MSc: Electronics & Telecom. Eng., Yildiz Technical University, Istanbul, TR, 1987.

BSc: Electronics & Telecom. Eng., Yildiz Technical University, Istanbul, TR, 1984.

Technician: Electrical Department, Demirtaspasa Technical College, Bursa, TR, 1980.

LANGUAGES

English: spoken and written (Excellent)
Turkish: (native)
Georgian: (native)

II. RESEARCH PROFILE

My research works cover a number of fields such as *signal/image processing*, *Time-frequency/scale analysis*, *SoC/digital design*, *biomedical instrumentation*, *bioinformatics*, *scientific computing*, and *data science*. I stress high quality engineering and scientific research work with practical applications in mind. I value my contributions in presentation and publication of my research work in high profile journals, conferences and workshops. Itemized below are a description of a list of publications, a list of supervised research personnel, a list of granted research funds, and lists of invited talks, and external collaborations.

RESEARCH INTERESTS

Biomedical signal processing and computing
 Time-frequency/scale analysis
 Fourier, Hilbert, and wavelet transform applications
 Signal detection and estimation
 Data visualization
Data Science and Analytics
Instrumentation
 Doppler ultrasound
 Non-invasive implantable measurement/sensor systems
 Medical electronics
VLSI
 Low power digital design,
 ASIC/SoC design
 SoC for biomedical applications
Bioinformatics
 E-health
 Wireless applications in healthcare technologies
Digital communications
 Modulation-demodulation
 Spread spectrum/CDMA systems
Software Engineering

PUBLICATIONS

In my particular area of research, most results appear first in refereed international conferences, which mostly have rigorous selections based on full papers. Usually a paper is submitted to a journal when a whole project is completed and associated software tools are fully implemented. GooogleScholar shows a record of more than 100 cited papers, with over 1060 citations, and a h-index of 17. Below is a table summarizing the last 7 years and lifetime publications, followed by a list of each category.

	Books	Book Chapters	Journal Articles	Conference Proceedings	Technical Reports
Last 7 years	-	-	26	30	-
Lifetime	3	5	44	105	6

Books

1. Gungor A, **Aydin N**, Karahoca A, and Toklu Ç, Proceedings of E-Learning '07 Conference, 2007, Bahcesehir University Publications, Istanbul, TR. ISBN 978-975-6437-75-9
2. Arslan T, Stoica A, Suess M, Keymeulen D, Higuchi T, Magness R, **Aydin N**, Erdogan AT, Proceedings - 2007 NASA/ESA Conference on Adaptive Hardware and Systems, 2007, IEEE Computer Soc., ISBN 0-7695-2866-X
3. Stoica A, Arslan T, Suess M, Yalçın S, Keymeulen D, Higuchi T, Zebulum R, **Aydin N**, Proceedings - First NASA/ESA Conference on Adaptive Hardware and Systems, 2006, IEEE Computer Soc., ISBN 0-7695-2614-4

Book Chapters

4. Chrysostomou C, Seker H, **Aydin N**, "Investigation into the Effects of an Individual Amino Acid on Protein Function by Means of a Resonant Recognition Model," Lecture Notes in Computer Science, Volume 6935, Convergence and Hybrid Information Technology, pp. 229-236, 2011. ISBN 978-3-642-24105-5
5. Serbes G, Şakar CO, **Aydin N**, Kahya YP, "Effect of Different Window and Wavelet Types on the Performance of a Novel Crackle Detection Algorithm," Lecture Notes in Computer Science, Volume 6935, Convergence and Hybrid Information Technology, pp. 575-581, 2011. ISBN 978-3-642-24105-5.
   https://link.springer.com/chapter/10.1007/978-3-642-24082-9_70
6. Karahoca A, Karahoca D, and **Aydin N**, "Benchmarking the Data Mining Algorithms with Adaptive Neuro-Fuzzy Inference System in GSM Churn Management," in Data Mining and Knowledge Discovery in Real Life Applications, Ed: Ponce J and Karahoca A, In-Tech Press, Vienna, pp. 438-451, 2009, ISBN 978-3-902613-53-0
   https://www.intechopen.com/books/data_mining_and_knowledge_discovery_in_real_life_app lications/benchmarking_the_data_mining_algorithms_with_adaptive_neuro-fuzzy_inference_system_in_gsm_churn_mana
7. **Aydin N**, "Venous Air Embolism: Detection via Wavelet Transform," In Wiley Encyclopedia of Biomedical Engineering , Ed: Metin Akay, John Wiley & Sons, Inc., Hoboken, 2006, ISBN 978-0-471-24967-2
   https://doi.org/10.1002/9780471740360.ebs1257
8. **Aydin N**, "Time-frequency and time-scale analysis of embolic signals". In Mathematics of Signal Processing V, Ed: Mcwhirter JG and Proudler IK, Oxford University Press, Oxford, pp. 241-254, 2002, ISBN: 9780198507345
   https://books.google.com.tr/books?id=10DZ4Wa3a5AC&pg=PA241&lpg=PA241&dq=%22Time-frequency+and+time-scale+analysis+of+embolic+signals%22&source=bl&ots=GguiRc7wlz&sig=ACfU3U22EA3 a1CflXmBeJobvf99EdMywdw&hl=tr&sa=X&ved=2ahUKEwjkw_rQ7bvgAhVFKBoKHbve DQMQ6AEwAHoECAkQAQ#v=onepage&q=%22Time-frequency%20and%20time-scale%20analysis%20of%20embolic%20signals%22&f=false

Journal Publications

9. Elbir A., İlhan H. O., Serbes G., **Aydin N**. (2019). The Implementation of Optimization Methods for Contrast Enhancement. *International Journal of Computer Systems Science and Engineering,* 34(2).
10. İlhan H. O., Serbes G., **Aydin N**. (2019). Automatic directional masking technique for better sperm morphology segmentation and classification analysis. *Electronics Letters*, 55(2).
    https://doi.org/10.1049/el.2018.7219
11. Dinler Ö. B., **Aydin N**. (2018). KURDISH RECOGNITION SYSTEM DIGIT. *The Online Journal of Science and Technology*, *8*(1), 101.
    https://www.tojsat.net/journals/tojsat/volumes/tojsat-volume08-i01.pdf#page=110

12. Dinler Ö. B., **Aydin N**. (2018). EXTRACTION OF THE ACOUSTIC FEATURES OF SEMI-VOWELS IN THE KURDISH LANGUAGE. *The Online Journal of Science and Technology-April*, *8*(2).
https://www.tojsat.net/journals/tojsat/volumes/tojsat-volume08-i02.pdf#page=88

13. Pashaei E, Pashaei E, & **Aydin N**, "Gene selection using hybrid binary black hole algorithm and modified binary particle swarm optimization", Genomics, 2018.
https://doi.org/10.1016/j.ygeno.2018.04.004

14. Pashaei E, **Aydin N**, "Markovian encoding models in human splice site recognition using SVM", *Computational Biology and Chemistry*, Vol. 73, 159-170, 2018
https://doi.org/10.1016/j.compbiolchem.2018.02.005

15. Ilhan HO, **Aydin N**, "A novel data acquisition and analyzing approach to spermiogram tests", *Biomedical Signal Processing and Control*, Vol. 41129-139, 2018
https://doi.org/10.1016/j.bspc.2017.11.009

16. Wei Y, Avcı C, Liu J, Belezamo B, **Aydin N**, Li P, Zhou X, "Dynamic programming-based multi-vehicle longitudinal trajectory optimization with simplified car following models", *Transportation Research Part B: Methodological*, Vol. 106, 102-129, 2017
https://doi.org/10.1016/j.trb.2017.10.012

17. Pashaei E, Pashaei E, Ahmady M, Ozen M, **Aydin N**, "Meta-analysis of miRNA expression profiles for prostate cancer recurrence following radical prostatectomy", *PloS one*, Vol. 12(6), 1-23, 2017
https://doi.org/10.1371/journal.pone.0179543

18. Pashaei E, **Aydin N**, "Binary black hole algorithm for feature selection and classification on biological data", *Applied Soft Computing*, Vol. 56, 94-106, 2017
https://doi.org/10.1016/j.asoc.2017.03.002

19. Tapkın TP, Osman O, Ergin T, Teomete U, Dandin Ö, **Aydın N**. Assesment of similarities between liver images to each other using scaling, rotation, and translation geometrical operations. IU-JEEE, 2017, Vol.17(1), (2017), 3101-3106.
http://dergipark.gov.tr/download/article-file/272352

20. Altay G, Kurt Z, Altay N, **Aydin N**. DepEst: an R package of important dependency estimators for gene network inference algorithms. bioRxiv. 2017 Jan 1:102871.
https://www.biorxiv.org/content/biorxiv/early/2017/01/25/102871.full.pdf

21. Pashaei, E., Ozen, M. & **Aydin, N**. Splice site identification in human genome using random forest. Health Technol. (2017) 7: 141. doi:10.1007/s12553-016-0157-z
https://doi.org/10.1007/s12553-016-0157-z

22. Pashaei E, Guzel E, Ozgurses ME, Demirel G, **Aydin N**, Ozen M, "A Meta-Analysis: Identification of Common Mir-145 Target Genes that have Similar Behavior in Different GEO Datasets", *PloS one*, Vol. 11(9), 1-14, 2016
https://doi.org/10.1371/journal.pone.0161491

23. Canbay F, Levent VE, Serbes G, Ugurdag HF, Goren S, **Aydin N**. Code generator for implementing dual tree complex wavelet transform on reconfigurable architectures for mobile applications. Healthcare Technology Letters. 2016 Sep 22;3(3):184-8.
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24. Yavuz ZK, **Aydin N**, Altay G,. "Comprehensive review of association estimators for the inference of gene networks", *Turk J Elec Eng & Comp Sci*, Vol. 24(3), 695-718, 2016
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25. Serbes G, Gulcur HO, **Aydin N**, "Directional dual-tree complex wavelet packet transforms for processing quadrature signals", *Medical & biological engineering & computing*, Vol. 54(2-3), 295-313, 2016
https://doi.org/10.1007/s11517-014-1224-0

26. Serbes G, Sakar BE, Gulcur HO, **Aydin N**, "An emboli detection system based on Dual Tree Complex Wavelet Transform and ensemble learning", *Applied Soft Computing*, Vol. 37, 87-94, 2015

https://doi.org/10.1016/j.asoc.2015.08.015

27. Sevil M, Elalmış N, Görgün H, **Aydin N**. Control of air conditioning with fuzzy logic controller design for smart home systems. Sigma. 2015;33(3):439-63.
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28. Chrysostomou C, Seker H, **Aydin N**, "CISAPS: complex informational spectrum for the analysis of protein sequences", *Advances in Bioinformatics*, Vol 2015, 1-10, 2015
http://dx.doi.org/10.1155/2015/909765

29. Kurt Z, **Aydin N**, Altay G, "A comprehensive comparison of association estimators for gene network inference algorithms", *Bioinformatics*, Vol. 30(15), 2142-2149, 2014
https://doi.org/10.1093/bioinformatics/btu182

30. Sakar CO, Kursun O, Seker H, Gurgen F, **Aydin N**, Favorov O, "Combining multiple views: Case studies on protein and arrhythmia features", *Engineering Applications of Artificial Intelligence*, Vol. 28, 174-180, 2014
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31. Serbes G, **Aydin N**, "Denoising performance of modified dual-tree complex wavelet transform for processing quadrature embolic Doppler signals", *Medical & biological engineering & computing*, Vol. 52(1), 29-43, 2014
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32. Serbes G, Sakar CO, Kahya YP, **Aydin N**, "Pulmonary crackle detection using time–frequency and time–scale analysis", *Digital Signal Processing*, Vol. 23(3), 1012-1021, 2013
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33. Serbes G, **Aydin N**, "Modified dual tree complex wavelet transform for processing quadrature signals", *Biomedical Signal Processing and Control*, Vol. 6(3), 301-306, 2011
https://doi.org/10.1016/j.bspc.2010.09.007

34. Kursun O, Sakar C O, Favorov O, **Aydin N**, Gurgen F, "Using covariates for improving the minimum Redundancy Maximum Relevance feature selection method", *Turk J Elec Eng & Comp Sci*, Vol.18(4), 2010
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35. Bale K, Chapman P, Barraclough N, Purdy J, **Aydin N**, and Dark P, "Kaleidomaps: a new technique for the visualization of multivariate time-series ". Information Visualization, Vol. 6; No. 2, 155-167, 2007.
https://doi.org/10.1057%2Fpalgrave.ivs.9500154

36. Temel T, Morgul A, **Aydin N**, "Signed higher-radix full-adder algorithm and implementation with current-mode multi-valued logic circuits ", *IEE Proc-Circuits Devices Syst*, Vol. 153(5), 489-496, 2006
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https://doi.org/10.1109/TITB.2004.837825

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39. Seker H, Evans DH, **Aydin N**, Yazgan E, "Compensatory fuzzy neural network based intelligent detection of abnormal neonatal cerebral Doppler ultrasound waveforms", *IEEE Trans Inf Tech Biomed*, 5(3), 187-194, 2001
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41. **Aydin N**, Markus HS, "Optimisation of processing parameters for the analysis and detection of embolic signals". European Journal of Ultrasound. 12, 1, 69-79, 2000.
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43. **Aydin N**, Markus HS, "Directional wavelet transform in the context of complex quadrature Doppler signals", *IEEE Signal Processing Letters*, 10(7), 278-280, 2000
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https://doi.org/10.1016/S0301-5629(99)00052-6

45. Moraes R, **Aydin N**, Evans DH, "The performance of three maximum frequency envelope detection algorithms for Doppler signals". Journal of Vascular Investigation. 1, 3, 126-134, 1995.
http://www.yildiz.edu.tr/~naydin/pub/na_jvi2_co.pdf

46. **Aydin N**, Evans DH, "A computerised arterial graft monitoring system". Journal of Vascular Investigation. 1, 2, 68-74, 1995.
http://www.yildiz.edu.tr/~naydin/pub/na_jvi1.pdf

47. **Aydin N**, Fan L, Evans DH, "Quadrature-to-directional format conversion of Doppler signals using digital methods", *Physiol Meas*, 15, 181-199, 1994
https://doi.org/10.1088/0967-3334/15/2/007

48. **Aydin N**, Evans DH, "Implementation of directional Doppler techniques using a digital signal processor", Med Biol Eng Comput, 32, S157-S164, 1994
https://doi.org/10.1007/BF02523342

Conference Publications

49. Elbir, A., İlhan, H. O., Serbes, G., & **Aydın, N**. (2018, April). Short Time Fourier Transform based music genre classification. In *2018 Electric Electronics, Computer Science, Biomedical Engineerings' Meeting (EBBT)* (pp. 1-4). IEEE.

50. Çam, H. B., Akçakoca, S., Elbir, A., Ilhan, H. O., & **Aydın, N**. (2018, April). The performance evaluation of the Cat and Particle Swarm Optimization Techniques in the image enhancement. In *2018 Electric Electronics, Computer Science, Biomedical Engineerings' Meeting (EBBT)* (pp. 1-4). IEEE.

51. Serbes G, **Aydin N**. Resonance based pre-processing method for eliminating artifacts in Doppler ultrasound signals. In Signal Processing and Communications Applications Conference (SIU), 2017 25th 2017 May 15 (pp. 1-4). IEEE.

52. Tarhan, H. H., & **Aydın, N**. (2017, October). Copying case detection with data mining. In *Computer Science and Engineering (UBMK), 2017 International Conference on* (pp. 430-434). IEEE.

53. İlhan, H. O., & **Aydın, N**. (2017, September). The contribution of DSP integration to ARM cores in SBCs for the video decoding process. In *2017 IEEE International Conference on Power, Control, Signals and Instrumentation Engineering (ICPCSI)* (pp. 3128-3131). IEEE.

54. Kazma, C., & **Aydın, N**. (2017, September). A microcontroller based system for measuring the central neural system response. In *2017 IEEE International Conference on Power, Control, Signals and Instrumentation Engineering (ICPCSI)* (pp. 320-324). IEEE.

55. Kaleli, F., & **Aydın, N**. (2017, September). Object detection on deformable surfaces using local feature sets. In *2017 IEEE International Conference on Power, Control, Signals and Instrumentation Engineering (ICPCSI)* (pp. 185-189). IEEE.

56. Palabas T, Osman O, Ergin T, Teomete U, Dandin O, **Aydin N**. Karaciğer görüntülerinin geometrik dönüşüm yöntemleri kullanilarak benzerliklerinin değerlendirilmesi. In2016 Medical Technologies National Conference, TIPTEKNO 2016 2017 Feb 23. IEEE.

57. Pashaei E, Yilmaz A, **Aydin N**. A combined SVM and Markov model approach for splice site identification. In 6th International Conference on Computer and Knowledge Engineering (ICCKE), 2016 (pp. 200 - 204). IEEE.

58. Pashaei E, Ozen M, **Aydin N**. Biomarker discovery based on BBHA and AdaboostM1 on microarray data for cancer classification. In Engineering in Medicine and Biology Society (EMBC), 2016 IEEE 38th Annual International Conference of the 2016 Oct 18 (pp. 3080-3083). IEEE.

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60. Serbes G, **Aydin N**. Analysis of embolic signals with directional dual tree rational dilation wavelet transform. In Engineering in Medicine and Biology Society (EMBC), 2016 IEEE 38th Annual International Conference of the 2016 Oct 18 (pp. 3821-3824). IEEE.

61. Pashaei E, Ozen M, **Aydin N**. Splice sites prediction of human genome using AdaBoost. In2016 IEEE-EMBS International Conference on Biomedical and Health Informatics (BHI) 2016 Feb 24 (pp. 300-303). IEEE.

62. Pashaei E, Ozen M, **Aydin N**. Gene selection and classification approach for microarray data based on Random Forest Ranking and BBHA. In2016 IEEE-EMBS International Conference on Biomedical and Health Informatics (BHI) 2016 Feb 24 (pp. 308-311). IEEE.

63. Palabaş T, Osman O, Ergin T, Teomete U, Dandin Ö, **Aydın N**. Determining the right abdomen region border for the injured liver segmentation. In Electric Electronics, Computer Science, Biomedical Engineerings' Meeting (EBBT), 2016 Apr 26 (pp. 1-4). IEEE.

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65. Canbay F, Levent VE, Serbes G, Ugurdag HF, Goren S, **Aydin N**. A Multi-channel Real Time Implementation of Dual Tree Complex Wavelet Transform in Field Programmable Gate Arrays. InXIV Mediterranean Conference on Medical and Biological Engineering and Computing, 2016 (pp. 114-118). Springer.

66. Pashaei E, Ozen M, **Aydin N**. An application of black hole algorithm and decision tree for medical problem. In Bioinformatics and Bioengineering (BIBE), 2015 IEEE 15th International Conference on 2015 Nov 2 (pp. 1-6). IEEE.

67. Canbay F, Levent VE, Serbes G, Ugurdag HF, Goren S, **Aydin N**. An area efficient real time implementation of dual tree complex wavelet transform in field programmable gate arrays. In Bioinformatics and Bioengineering (BIBE), 2015 IEEE 15th International Conference on 2015 Nov 2 (pp. 1-5). IEEE.

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69. Pashaei E, Ozen M, **Aydin N**. Improving medical diagnosis reliability using Boosted C5. 0 decision tree empowered by Particle Swarm Optimization. In 2015 37th Annual International Conference of the IEEE Engineering in Medicine and Biology Society (EMBC) 2015 Aug 25 (pp. 7230-7233). IEEE.

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71. Serbes G, Gulcur HO, **Aydin N**. Symmetrical directional dual-tree complex wavelet packet transform. In2014 36th Annual International Conference of the IEEE Engineering in Medicine and Biology Society 2014 Aug 26 (pp. 820-823). IEEE.

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73. Kurt, Z.; **Aydin, N**.; Altay, G., "Impacts of the different spline orders on the B-spline association estimator," Bioinformatics and Bioengineering (BIBE), 2013 IEEE 13th International Conference on , vol., no., pp.1,6, 10-13 Nov. 2013 , doi: 10.1109/BIBE.2013.6701663

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79. Serbes, G., **Aydin, N**., " Symmetrical Modified Dual Tree Complex Wavelet Transform for Processing Quadrature Doppler Ultrasound Signals," Engineering in Medicine and Biology Society (EMBC), 2011 Annual International Conference of the IEEE , vol., no., pp. 4816-4819, Aug. 30 2011-Sept. 3 2011.

80. Chrysostomou, C., Seker, H., **Aydin, N**., " Effects of windowing and zero-padding on Complex Resonant Recognition Model for protein sequence analysis," Engineering in Medicine and Biology Society (EMBC), 2011 Annual International Conference of the IEEE, vol., no., pp. 4955- 4958, Aug. 30 2011-Sept. 3 2011.

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86. Serbes G, **Aydin N**, "A complex discrete wavelet transform for processing quadrature Doppler ultrasound signals," Information Technology and Applications in Biomedicine, 2009. ITAB 2009. 9th International Conference on, vol., no., pp.1-4, 4-7 Nov. 2009.

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89. **Aydin N**, Arslan T, "Analysis and Optimization of a Wireless Communication System for an Ingestable Sensor Microsystem". Frontiers in the Convergence of Bioscience and Information Technologies (FBIT 2007), Jeju Island, October 2007.

90. Karahoca A, **Aydin N**, "Benchmarking of Data Mining Techniques for Emboli Detection". Frontiers in the Convergence of Bioscience and Information Technologies (FBIT 2007), Jeju Island, October 2007.

91. Karahoca A, **Aydin N**, "GSM Churn Management Using and Adaptive Neuro-Fuzzy Inference System". International Conference on Intelligent Pervasive Computing (IPC 2007), Jeju Island, October 2007.

92. Karahoca A, Karahoca D, Yengin İ, **Aydin N**, Güngör A, "Usability Evaluation of a Meta-Cognitive Tool". e-Learning conference '07, Istanbul, August 2007.

93. Karahoca A, Karahoca D, Ince IF, Gökçeli R, **Aydın N**, Güngör A, " Intelligent Question Classification for e-learning by ANFIS ". e-Learning conference '07, Istanbul, August 2007.

94. Salman YB, Karahoca A, Kim JY, **Aydin N**, Güngör A , " A Research Study: Mobile Learning in South Korea ". e-Learning conference '07, Istanbul, August 2007.

95. **Aydin N**, "DWT Based Adaptive Threshold Determination in Embolic Signal Detection ". Proc. NASA/ESA Conference on Adaptive Hardware and Systems (AHS-2007), Edinburgh, August 2007.

96. Temel T, **Aydin N**, "A threshold free clustering algorithm for robust, unsupervised classification ". ECSIS Symposium on Bio-inspired, Learning, and Intelligent Systems for Security (BLISS-2007), Edinburgh, August 2007

97. Karahoca A, Kucur T, **Aydin N**, "Data Mining Usage in Emboli Detection". ECSIS Symposium on Bio-inspired, Learning, and Intelligent Systems for Security (BLISS-2007), Edinburgh, August 2007

98. Kaleli F, **Aydin N**, Ertas G, Gulcur HO, "An Adaptive Approach to the Segmentation of DCE-MR Images of the Breast: Comparison with Classical Thresholding Algorithms", IEEE Symposium on Computational Intelligence in Image and Signal Processing (CIISP 2007), 1-5 April 2007 Page(s):375 – 379.

99. Temel T, **Aydin N**, "A novel information-theoretic clustering algorithm for robust, unsupervised classification". 9th International Symposium on Signal Processing and Its Applications (ISSPA2007), Sharjah, February, 2007.

100. **Aydin N**, "Processing of Complex Quadrature Signals". ECSIS Symposium on Intelligent Systems for Defense and Security (ISDS), Iasi, September 2006.

101. Kaleli F, **Aydin N**, "A Region based thresholding Algorithm for Segmenting of Axial MR Breast Images ". Europian Conference on Intelligent Systems and Technologies (ECIT 2006), Iasi, September 2006.

102. Bale K, Chapman P, Purdy J, **Aydin N**, Dark P, "Kaleidomap Visualizations of Cardiovascular Function in Critical Care Medicine". International Conference on Medical Information Visualisation--BioMedical Visualisation (MedVis'06), 51-58, 2006.

103. **Aydin N**, "Choice of Wavelet Function in Detection of Embolic Signals Using Discrete Wavelet Transform ". Proc. 5th Annual IEEE EMBS Special Topic Conference on Information Technology Applications in Biomedicine (ITAB2006), Ioannina, September 2006.

104. **Aydin N**, Arslan T, "Power Driven Reconfigurable Complex Continuous Wavelet Transform". Proc. 1st NASA/ESA Conference on Adaptive Hardware and Systems (AHS-2006), Istanbul, 109 – 113, June 2006

105. Wang L, **Aydin N**, Astaras A, Ahmadian M, Hammond PA, Tang TB, Johannessen E, Arslan T, Beaumont SP, "A Sensor System on Chip for Wireless Microsystems". IEEE 2006 International Symposium on Circuits and Systems (ISCAS 206), Kos, May 2006.

106. Revett K, **Aydin N**, "Attribute Extraction and Classification Using Rough Sets on a Lymphoma Dataset". Proc. International Symposium on Health Informatics and Bioinformatics (HIBIT 2005), Antalya, 93-97, November 2005.

107. **Aydin N**, "A Fourier Domain Method for Recovering SSB Signals from Baseband Equivalents". Proc. 9th International Research/Expert Conference - Trends in The Development of Machinery and Associated Technologies (TMT 2005), Antalya, 1483-1486, September 2005.

108. **Aydin N**, "Complex Wavelet Transform for Processing Complex Quadrature Doppler Signals". Proc. International Workshop on Applications of Wavelets to Real World Problems(IWW 2005), Istanbul, 221-232, July 2005.

109. Pai A, Khawam S, **Aydin N**, Arslan T, Benkrid K, "A 2-D systolic motion estimation architecture on a domain-specific reconfigurable substrate ". Irish Signals and Systems Conference (ISSC'04), Belfast, June-July 2004.

110. Temel T, Morgul A, **Aydin N**, "A novel signed higher-radix full-adder algorithm and implementation with current-mode multi-valued logic circuits". IEEE Euromicro Symposium on Digital System Design, Paris, 80-87, September 2004.

111. Khawam S, Baloch S, Pai A, Ahmed I, **Aydin N**, Arslan T, Westall F, "Efficient Implementations of Mobile Video Computations on Domain-Specific Reconfigurable Arrays ". Design, Automation and Test in Europe Conference (DATE 04), Paris, 1230-1235, February 2004.

112. **Aydin N**, Astaras A, Wang L, Arslan T, Murray AF, Beamont SP, Cumming DRS, "Design and implementation considerations for an advanced wireless interface in miniaturized integrated sensor microsystems". 25th Annual International Conference of the IEEE Engineering in Medicine and Biology Society, Cancun, 3400-3402, September 2003.

113. **Aydin N**, Arslan T, Cumming DRS, "The design of optimized programmable transmitter and receiver architectures for an integrated sensor microsystem". 16th Annual IEEE International ASIC/SOC Conference, Portland, 71-74, September 2003.

114. **Aydin N**, Arslan T, Cumming DRS, "Power/area analysis and optimization of a DS-SS receiver for an integrated sensor microsystem". IEEE Euromicro Symposium on Digital System Design, Antalya, 402-408, September 2003.

115. **Aydin N**, "Frequency and Scale Domain Analysis of Complex Quadrature Embolic Doppler Ultrasound Signals". IEEE 3rd International Symposium on Image and Signal Processing and Analysis, Rome, 888-891, September 2003.

116. **Aydin N**, Arslan T, Murray AF, "Identification and Detection of Embolic Doppler Signals Using DWT and Fuzzy Logic". Proc. International Fuzzy systems World Congress (IFSA 2003), Istanbul, 119-122, June 2003.

117. **Aydin N**, Arslan T, Cumming DRS, "Direct sequence CDMA based wireless interface for an integrated sensor microsystem". Proc. 4th Annual IEEE EMBS Special Topic Conference on Information Technology Applications in Biomedicine (ITAB2003), Birmingham, 370-373, April 2003.

118. Astaras A, Ahmadian M, **Aydin N**, Cui L, Johannessen E, Tang TB, Wang L, Arslan T, Beaumont SP, Flynn BW, Murray AF, Reid SW, Yam P, Cooper JM, and Cumming DRS, "A miniature integrated electronics sensor capsule for real-time monitoring of the gastrointestinal tract (IDEAS)". Proc. of the IEEE ICBME Conference, Singapore, December 2002.

119. Johannessen EA, Tang TB, Wang L, Cui L, Ahmadian M, **Aydin N**, Astaras A, Murray AF, Flynn BW, Arslan T, Beaumont SP, Cumming DRS, and Cooper JM, "An ingestible electronic pill for real time analytical measurements of the gastrointestinal tract". Proc.of the mTAS 2002 Symposium, Japan, 181-183, 2002.

120. **Aydin N**, Arslan T, Cumming DRS, "Design and implementation of a spread spectrum based communication system for an ingestible capsule". Proc. 24th Annual International Conference of the IEEE Engineering in Medicine and Biology Society, Houston, 1773-1774, 2002.

121. **Aydin N**, Marvasti F, Markus HS, "Effect of wavelet denoising on time-frequency and time-scale analysis of quadrature embolic signals". Proc. 24th Annual International Conference of the IEEE Engineering in Medicine and Biology Society, Houston, 80-81, 2002.

122. **Aydin N**, Purdy J, Dark P, "Localizing systolic ejection within a trans-esophageal CW Doppler ultrasound aortovelographic vaweform". Proc. 24th Annual International Conference of the IEEE Engineering in Medicine and Biology Society, Houston, 1315-1316, 2002.

123. **Aydin N**, Arslan T, Cumming DRS, "A spread spectrum based communication system for an integrated sensor microsystem". Proc. 15th Annual IEEE International ASIC/SOC Conference, Rochester, 336-340, 2002.

124. **Aydin N**, Marvasti F, Markus HS, "Detection and estimation of embolic Doppler signals using discrete wavelet transform". Proc. IEEE ICASSP 2001, Salt Lake City, 1049-1052, 2001.

125. Seker H, Evans DH, Yazgan E, **Aydin N**, Naguip RG, "Intelligent detection of abnormal neonatal cerebral haemodynamics in a neonatal intensive care environment". Proc. 23rd Annual International Conference of the IEEE Engineering in Medicine and Biology Society, Istanbul, 1612 -1614, 2001.

126. **Aydin N**, Markus HS, "Time-frequency and time-scale analysis of embolic signals". Proc. 5th IMA International Conference on Mathematics in Signal Processing, Warwick, December 2000.

127. **Aydin N**, Markus HS, "A comparison of time-frequency and time-scale analysis of embolic signals". Proc. 14TH International Conference on Systems Engineering (ICSE 2000), Coventry, 28-30, 2000.

128. **Aydin N**, Markus HS, "Optimisation of processing parameters for the analysis and detection of embolic signals". Proc. 14TH International Conference on Systems Engineering (ICSE 2000), Coventry, 31-35, 2000.

129. **Aydin N**, Markus HS, "Wavelet analysis of quadrature Doppler ultrasound signals". Proc. IEE International Conference on Medical Signal and Information Processing (MEDSIP '2000). Bristol, 251-256, 2000.

130. **Aydin N**, Markus HS, "The use of the wavelet transform to describe embolic signals". Cerebrovasc Dis. 9, supl. 2, S7, 1999. European Society of Neurosonology and Cerebral Hemodynamics 4th Meeting, Venice, April 1999 https://doi.org/10.1159/000047546

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132. **Aydin N**, Markus HS, "Detection of embolic signals using wavelet transform". Proc. IEEE-EURASIP Workshop on Non-linear Signal and Image Processing (NSIP'99), vol 2, Antalya, 774-778, 1999.

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134. **Aydin N**, Evans DH, "A fast frequency domain algorithm for decoding quadrature Doppler signals". Proc. 18th Annual International Conference of the IEEE Engineering in Medicine and Biology Society, Amsterdam, vol 18, 993-994, 1996.

135. Evans DH, **Aydin N**, Thrush AJ and Nydahl S, "A computerised arterial graft monitoring system". Proc. 5th International Conference on Biomedical Engineering, Singapore, 294-296, December 1994.

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139. Ceylan M, Özbay Y, **Aydin N**, "Kompleks Değerli Yapay Sinir Ağı Kullanılarak Embolik Doppler Ultrason Sinyallerinin Dedeksiyonu". Proc. Biyomut 2006, National Biomedical Engineering Meeting, Istanbul, May 2006.

140. Ceylan M, Özbay Y, **Aydin N**, "Kompleks Değerli Yapay Sinir Ağı Kullanılarak Doppler Sinyallerinden Yön Bilgisinin Çıkarılması". Proc. Biyomut 2005, National Biomedical Engineering Meeting, Istanbul, May 2005.

141. Ardogan M, **Aydin N**, "Simulation of time varying filter implementation". Proc. IEEE Turkish Chapter Signal Processing and Applications Conference (SIU'98), Ankara, 519-524, 1998.

142. Kisacik M, **Aydin N**, "Maximum frequency envelope detection from Doppler ultrasound sonograms". Proc. IEEE Turkish Chapter Signal Processing and Applications Conference (SIU'98), Ankara, 1998.

143. **Aydin N**, "Decoding directional information encoded in quadrature signals in frequency domain". Proc. IEEE Turkish Chapter Signal Processing and Applications Conference (SIU'97), Kusadasi, 190-195, 1997.

144. **Aydin N**, "A geometric method for detection of maximum frequency envelope". Proc. IEEE Turkish Chapter Signal Processing and Applications Conference (SIU'97), Kusadasi, 110-114, 1997.

145. **Aydin N**, Gedikbey B, Aydin OB, Ardogan M, "Digital signal processing methods for decoding quadrature Doppler signals". Proc. IEEE Turkish Chapter Signal Processing and Applications Conference (SIU '96), Kemer, 269-274, 1996.

146. **Aydin N**, "Design and implementation of a computerised arterial graft monitoring system". Proc. Biyomut 95, National Biomedical Engineering Meeting, Istanbul, 130-133, 1995.

147. **Aydin N**. Advances in Biomedical Signal Processing. AIHLS2013. 2013 Sep 9:90.

148. Astaras A, Ahmadian M, **Aydin N**, Farooq I, Holgate M , Johannessen E, Tang TB, Wang L, Arslan T, Beaumont SP, Casey J, Cooper JM, Dickman P, Flynn BW, Murray AF, "IDEAS: Miniature Lab-in-a-pill sensor system", The SET for Britain Conference, 2001.

149. **Aydin N**, Markus HS, "Analysis of low intensity embolic signals using continuous wavelet transform". St George's Cardiovascular Research Group 6th Research Open Day, London, October 2000.

150. **Aydin N**, Marvasti F, Markus HS, "Embolic signal detection and classification using discrete wavelet transform". St George's Cardiovascular Research Group 6th Research Open Day, London, October 2000.

151. **Aydin N**, Ardogan M, "Time varying filtering approach for simulation of ultrasonic Doppler signals". Simulation and Modelling Techniques Applied to Medicine Meeting, London, November 1999.

152. **Aydin N**, Markus HS, "Detection of embolic signals using wavelet transform". Wavelets: The Key to Intermittent Information, Discussion Meeting, The ROYAL SOCIETY, London, February 1999.

153. Thrush AJ, **Aydin N**, Nydahl S and Evans DH, "A new on - line automated system for monitoring lower limb bypass grafts". EURODOP 94, Oxford, 1994.

Technical Reports

154. **Aydin N**, A Review of Detection and Classification of Embolic Signals, Kings College School of Medicine and Dentistry, Department of Clinical Neurosciences, London, UK, 1998.

155. **Aydin N**, Acquisition and Processing of Embolic Signals Already Recorded on DAT Tapes, Kings College School of Medicine and Dentistry, Department of Clinical Neurosciences, London, UK, 1998.
156. **Aydin N**, Detection of Solid Emboli Using RF Echoes, Kings College School of Medicine and Dentistry, Department of Clinical Neurosciences, London, UK, 1998.
157. **Aydin N**, Applications of Wavelet Transform to Doppler Ultrasound, Kings College School of Medicine and Dentistry, Department of Clinical Neurosciences, London, UK, 1998.
158. **Aydin N**, A Quantitative Comparison of Wavelet and Fourier Transforms for Detection of Embolic Signals, Kings College School of Medicine and Dentistry, Department of Clinical Neurosciences, London, UK, 1998.
159. **Aydin N**, Effect of the Window Size on the Analysis of Embolic Signals, Kings College School of Medicine and Dentistry, Department of Clinical Neurosciences, London, UK, 1998.
160. **Aydin N**, Choice of the FFT Parameters for the Analysis of Embolic Signals, Kings College School of Medicine and Dentistry, Department of Clinical Neurosciences, London, UK, 1999.
161. **Aydin N**, Directional Continuous Wavelet Transform in the Context of Complex Quadrature Doppler Signals, Kings College School of Medicine and Dentistry, Department of Clinical Neurosciences, London, UK, 1999.
162. **Aydin N**, Characterization of Embolic Signals, Artifacts and Doppler Speckle Using Discrete Wavelet Transform, Kings College School of Medicine and Dentistry, Department of Clinical Neurosciences, London, UK, 2000.
163. **Aydin N**, Statistical Evaluation of the DWT Analysis and Detection System, St George's Hospital Medical School Division of Clinical Neuroscience, London, UK, 2000.
164. **Aydin N**, Preliminary Results for Embolic Signal Detection and Classification Using Discrete Wavelet Transform, St George's Hospital Medical School Division of Clinical Neuroscience, London, UK, 2000.
165. **Aydin N**, Use of Discrete Wavelet Transform to Detect Embolic Signals, St George's Hospital Medical School Division of Clinical Neuroscience, London, UK, 2000.

Theses

166. **Aydin N**, [Computerized Graft Monitoring](#), PhD Thesis, Department of Medical Physics, University of Leicester, Leicester, UK, 1994.
   During my PhD research, I have designed and implemented a Computerized Arterial graft Monitor. It involved in designing and implementing a Doppler demodulator plug in board for PC (board consisted of mixers, filters, and an Altera FPGA), developing and implementing novel digital demodulation and FFT algorithms for DSP32C (produced by Lucent (then AT&T)) floating point processor, and developing and implementing user interface in C for the complete system.
167. **Aydin N**, Design and implementation of data-acquisition system for IBM-PC, MSc Thesis, Electronics & Telecommunication Engineering, Yildiz Technical University, Istanbul, TR, 1987.
   The data-acquisition system was based on ICL7109 ADC chip and was designed as plug in board for IBM-PC.
168. **Aydin N**, Design and implementation of auto-test device to measure engine performance, BSc final year project, Electronics & Telecommunication Engineering, Yildiz Technical University, Istanbul, TR, 1984.

INVITED TALKS/SEMINARS

- An Engineering Perspective on Complex Analysis and Transform Domain Processing of Quadrature Signals, MODERN PROBLEMS OF INNOVATIVE TECHNOLOGIES IN OIL AND GAS PRODUCTION AND APPLIED MATHEMATICS, Baku, Azerbaijan, December 2018.

- Processing of Quadrature Doppler Ultrasound Signals-An Engineering Perspective of Complex Analysis, International Conference on Mathematical Advances and Applications (ICOMAA2018), Istanbul, Turkey, December 2018.

- From Signal to Image – Can Stroke Be Predicted? Abant İzzet Baysal University, Bolu, Turkey, 03 April 2018.

- Biomedical Signal and Image Processing, Hindustan University, Chennai, India, September 2017.

- Advances in Biomedical Signal Processing, International Conference on Power, Control, Signals & Instrumentation Engineering (ICPCSI), Chennai, India, September 2017.

- Advances in Biomedical Signal Processing, The International Conference on Applied Informatics for Health and Life Sciences (AIHLS 2013), Istanbul, Turkey, September 9, 2013.

- Processing Complex Quadrature Signals- An example: Analysis and Detection of Embolic Signals, Shenzhen Institutes of Advanced Technology, Shenzhen, China, January, 2012.

- Detection and Analysis of Embolic Signals, 9th National Neuroscience Congress, University of Yeditepe, Istanbul, Turkey, April 13-17, 2010.

- Processing Complex Quadrature Signals, Erciyes University, Kayseri, Turkey, April 10, 2008.

- Processing Dynamic Time Series Signals Using Wavelet Transform, University of Westminster, London, UK, November 15, 2006.

- Identification and Detection of Embolic Doppler Signals Using DWT and Fuzzy Logic, De Montfort University, Leicester, UK, November 17, 2006.

- Processing Complex Quadrature Signals, Aristotle University of Thessaloniki, Thessaloniki, Greece, October 25, 2006.

- Complex Wavelet Transform for Processing Complex Quadrature Doppler Signals, International Workshop on Applications of Wavelets to Real World Problems(IWW 2005), Istanbul, Turkey, July 2005.

- Design of Optimized Programmable Transmitter and Receiver Architectures for an Integrated Sensor Microsystem, Boğaziçi University, Istanbul, Turkey, March 2005.

- Time-Frequency and Time-Scale Analysis of Embolic Signals, Leicester University, Leicester, UK, June 1999.

RESEARCH PROJECTS

- Synchronized Diabetes Monitoring System, researcher, TUBITAK 1003, Turkey, 713290 TL, 2018 - … .

- Implementation of the Cortical Measurement System to be used in the Diagnosis and Treatment of Neuropathic Pain, PI, Yildiz Technical University, Scientific Research Funding, Turkey, 15000 TL, 2016 - … .

- Design and Implementation of a Hardware System for Analysis and Monitoring Motile Objects in Biomedical Images, PI, Yildiz Technical University, Scientific Research Funding, Turkey, 15000 TL, 2016 - 2018.

- Infrastructure Development for Biomedical Imaging and Diagnostic Systems, Consultant, Turkish Ministry of Development, Turkey, 2650000 TL, 2016 - … .

- Real Time Implementation of Dual Tree Complex Wavelet Transform in FPGAs for Parallel Processing Multi-channel Doppler Ultrasound Signals, PI, Yildiz Technical University, Scientific Research Funding, Turkey, 15000 TL, 2014 - 2016.

- Pose Estimation of Objects for Computer Vision Based Robotic Systems, PI, Turkish Ministry of Industry (SAN-TEZ) project, Turkey, 74410 TL, 2013 - 2014.

- State Water Works (DSİ) Water Database Project - DSI / SVT, researcher, State Planning Organization (DPT), 332240400 TL, 2006 - 2008

- Collaborative immersive visualization techniques for the interpretation of cardiovascular function in critical care medicine, co-PI, EPSRC (GR/S82190), UK, 85000 GBP, 2004 - 2006.

- IDEAS - Integrated Diagnostics for Environmental and Analytical Systems, researcher, SHEFC Research Development Grant 130, Scotland, UK, 3500000 GBP, 2001 – 2004

- Developing and evaluating an automated embolic signal detection system based on wavelet processing, researcher, British Heart Foundation (PG/99064), UK, 80000 GBP, 1999 - 2002.

- Fuzzy C-Means Based Clustering Algorithms Approach to Magnetic Resonance Image Segmentation, co-PI, Gebze Institute of Technology, University Research Committee, 15000 TL, 1997-1998.

- Development and implementation of multi-frequency Doppler System, PI, Gebze Institute of Technology, Scientific Research Funding, 15000 TL, 1995-1997.

STUDENT SUPERVISISONS

	PhD	MSc	Undergraduate
Completed	9	22	>50
In-progress	9	-	10

In the Computer Engineering Department, Yildiz Technical University, Turkey (2009 - to date):

- Cafer Avcı, PhD (completed, 2018), Development and implementation of intelligent traffic management system in main arteries.

- Halil Hakan Tarhan, PhD (completed, 2017), Development of an enterprise resource planning software and intelligent decision support system tools.

- Hamza Osman İlhan, PhD (completed, 2017), A system implementation for analysis and tracking motile objects in biomedical images.

- Elnaz Pashaei, PhD (completed, 2017), Meta-analysis of microRNA and gene selection using machine learning.

- Elham Pashaei, PhD (completed, 2017), Splice site detection using machine learning.

- Alyaa Abdulhussein Mahdi Alrwstim, MsC, (completed, 2017), Blind audio source separation using independent component analysis and independent vector analysis methods.

- Ferhat Canbay, PhD (completed, 2016), Implementation of complex discrete wavelet transform on reconfigurable architectures.

- Gorkem Serbes, PhD (completed, 2014), Time-frequency and time-scale analysis of non-stationary biomedical signals.

- Zeyneb Kurt, PhD (completed, 2013), Comparison of various gene regulatory network inference methodologies.

- Ahmet Elbir, PhD (current), Implementation of a music recommendation system based on acoustic features.

- Hacer Bayıroglu, PhD (current), Biomedical applications of speech processing techniques.

- Özlem Batur Dinler, PhD (current), Automatic speaker verification system using deep learning methods.

- Coşkun Kazma, PhD (current), A measurement system implementation for neuropathic pain diagnosis and treatment.

- Fatih Kaleli, PhD (current), Pose Estimation of Objects for Computer Vision Based Robotic Systems.

- Jamal Esenkanova, PhD (current), Investigation of Kalman Filter Based Methods for Inference of Gene Regulatory Networks.

- Mustafa Yankayış, PhD (current), Processing Embolic Doppler Ultrasound Signals Using Complex Wavelet Transform.

- Mecit Yüzkat, PhD (current), Wavelet Transform-Based Neural Spike Detection and Sorting.

- Mehmet Taha Aras, PhD (current), Creating and Implementing Fraud Detection Model in Aviation with Deep Learning Methods.

In the Computer Engineering Department, Bahcesehir University, Turkey (2004 - 2009):

- Sinem Şentürk, MSc (completed, 2009), Applied genetic algorithms approach to curve fitting problems.

- Görkem Serbes, MSc (completed, 2009), Analysis of quadrature Doppler signals with a modified dual-tree complex wavelet transform.

- Şakir Çağlar Toklu, MSc (completed, 2008), Nonlinear displacement analysis of trusses using ant colony optimization.

- İnci Zaim Gökbay, MSc (completed, 2007), Machine learning techniques in breast cancer detection.

- Fatih Kaleli, MSc (completed, 2007), Computer aided diagnosis of breast cancer.

- Türkalp Kücür, MSc (completed, 2007), Data mining techniques in emboli detection.

- Baycan Kaçan, MSc (completed, 2007), Comparison of the automated and non-automated methods in GSM for cellular network management.

- Bülent Çobanoğlu, MSc (completed, 2005), Implementation of Taylor method by the use of microcontrollers.

In the Institute for System Level Integration (Livingstone) and School of Engineering and Electronics, the University of Edinburg, UK (2002 - 2004):

- Design and implementation of low-power reconfigurable discrete complex wavelet transform algorithms for biomedical and telecommunications applications. (MSc)

- Low power implementation of quadrature digital oscillators. (MSc)

- Implementation of low power coding architectures/IPs for an integrated microsensor. (MSc)

- Reconfigurable Blocks For Discrete Cosine Transform Applications. (MSc)

- High Performance Reconfigurable Low Power SoC Architecture for Mobile Platforms. (MSc)

- System Integration of Reconfigurable Blocks (DCT and Motion Estimation Reconfigurable blocks with microprocessor based platform). (MSc)

- Design and Implementation of a Complex Continuous Wavelet Transform on a Reconfigurable Platform for Real-time Operation. (MSc)

- VHDL based FPGA design for a Laser/Tracker detector system. (MSc)

In Electrical and Electronics Engineering, Gebze Institute of Technology, Turkey (*1995 - 1998*):

- Ömer Baybora Aydın, MSc (completed, 1998), Time-Frequency Analysis of Doppler Signals.

- Musa Ardoğan, MSc (completed, 1998), A real time Doppler signal simulator.

- Hüseyin Babayiğit, MSc (completed, 1998), Comparison of maximum frequency envelope detectors for Doppler signals.

- Mete Kısacık, MSc (completed, 1998), Wavelet Transform applications to analyse Doppler ultrasound signals from lower limb arteries.

- Cüneyt Fırat, MSc (completed, 1996), Continuous wave Doppler blood flow monitoring system.

III. TEACHING PROFILE

My teaching experience covers a broad range of disciplines such as Computer Engineering, Software Engineering, Electrical Engineering, Electronics Engineering and Biomedical Engineering. The courses I thought in various universities are listed below. These courses, given to both the undergraduate and graduate levels, were lectured mostly in English. Almost all materials in these courses were prepared by myself. I developed contents for the courses given. Besides regular semester courses, I also gave a number of short intensive courses at some universities in overseas. More recent courses I thought can be accessed at the following link:
http://www.yildiz.edu.tr/~naydin/na_teaching.htm

SOME COURSES TAUGHT

Undergraduate
- Circuit Theory
- Introduction to Bioinformatics
- Statistical Data Analysis
- Signals and Systems
- Computer Organization & Architecture
- Digital Signal Processing
- Technical English
- Medical Informatics
- Biosignals & Systems
- Biomedical Instrumentation
- Electronic Circuits & Systems
- Digital Circuits & Design
- Microprocessors
- Electrical & Electronics Measurements & Systems
- Introduction to Computer Sciences and Information Technology
- Computing Systems
- Management Information Systems
- System Analysis & Design

Graduate
- Advanced Digital Signal Processing
- Advanced Computer Architecture
- Computer Organization
- Advanced System Analysis &Design
- Applied Digital Signal Processing
- Statistical Signal Processing
- Image Processing Fundamentals
- Principles of Doppler Ultrasound
- Principles of Computerized Tomographic Imaging
- EMC Fundamentals
- Numerical Methods
- Technical English

IV. SERVICES PROFILE

I have been involved in several university committees at the University, Faculty and Department levels. These include a number of administrative assignments and advisory committees. In addition, I held several national and international committees. For instance, the organization and program committees of reputed international conferences, the review of highly regarded international journal papers and the evaluation of grant and scholarship applications of national and international agencies.

UNIVERSITY OFFICES AND COMMITTEES

- Member, University Senate, 2014-2016
- Member, University Executive Board, 2014-2016
- Member, Graduate School Council, 2011 - 2017
- Member, Ethical Committee, 2013-2017
- Member, Academic Promotion and Evaluation Committee, 2013 - to date
- Coordinator of Graduate Students studying abroad on a scholarship, 2017- to date
- Member, the Senatus Academicus, University of Edinburgh, UK, 2002-2004

FACULTY OFFICES AND COMMITTEES

- Dean, Faculty of Electrical Engineering & Electronics, 2014 - 2016
- Member, Faculty Executive Board, 2011 - to date
- Member, Faculty Council, 2011 - 2017
- Chair, Academic Promotion and Evaluation Committee, 2013 - to date
- Member, Faculty Executive Board (Bahcesehir University), 2007 – 2009

DEPARTMENTAL OFFICES AND COMMITTEES

- Head, Computer Engineering Department (Yildiz Technical University), 2011 - 2017
- Head, Computer Science Division (Computer Engineering Department, YTU), 2016 - to date
- Member, Department Executive Committee, 2011- to date
- Member, Computer Engineering Curriculum Committee, 2011- to date
- Member, PhD Qualifying Exam Committee, 2011- to date
- Member, Graduate Studies and Curriculum Committee, 2011- to date
- Member, Undergraduate Curriculum Committee, 2011- 2017
- Member, Hiring Committee, 2011 – to date
- Founding Head, Software Engineering Department (Bahcesehir University), 2006 - 2008
- Head, Computer Engineering Department (Bahcesehir University), 2004 - 2006
- Deputy HoD, Electronic Engineering Department (Gebze Technical University), 1995 - 1998

GRADUATE THESES COMMITTEES

- 9 international, >30 national

OTHER OFFICES AND COMMITTEES

- Associate Editor, Turkish Journal of Electrical Engineering and Computer Sciences, 2010 – to date
- Associate Editor, IEEE Transactions on Information Technology in Biomedicine, 2003 – 2010

- Member, Advisory Board, Electrical, Electronics and Information Research Group, the Scientific and Technological Research Council of Turkey (TÜBİTAK), 2013 - 2016
- Member, Advisory Board, Directorate of Science Fellowships and Grant Programmes (BİDEB), The Scientific and Technological Research Council of Turkey (TÜBİTAK), 2017 – to date
- Member, Evaluation Board, Small and Medium Enterprises Development Organization of Turkey (KOSGEB), 2013 – to date
- Grant Reviewer, Engineering and Physical Sciences Research Council (EPSRC), UK), 2003 - 2004
- Grant Reviewer & Panel Member, Electrical, Electronics and Information Research Group, The Scientific and Technological Research Council of Turkey (TÜBİTAK), 2004 - to date

Roles in TUBITAK Project Evaluation System	Total
Panellist / external consultant	76
Moderator	36
Project controller and consultant	14
Rapporteur	53

CONFERENCE ORGANIZATION

Conference organiser:

- 1st NASA/ESA Conference on Adaptive Hardware and Systems (AHS-2006), June 2006, Bahcesehir University, Istanbul, TR.

- E-Learning '07 Conference, August 2007, Bahcesehir University, Istanbul, TR

Conference Scientific Co-chair:

- International Research/Expert Conference - Trends in the Development of Machinery and Associated Technologies (TMT 2007), September 2007.

- International Research/Expert Conference - Trends in the Development of Machinery and Associated Technologies (TMT 2006), Barcelona, September 2006.

- International Research/Expert Conference - Trends in the Development of Machinery and Associated Technologies (TMT 2005), Antalya, September 2005.

Local arrangement chair:

- VLSI-SoC: At the Crossroads of Emerging Trends: 21st IFIP WG 10.5/IEEE International Conference on Very Large Scale Integration, VLSI-SoC 2013, Istanbul, Turkey.

Social events co-chair:

- The 2011 International Conference on High Performance Computing & Simulation (HPCS 2011) July 4 – 8, 2011 Bahcesehir University Istanbul, Turkey.

Program Committee Co-chair:

- NASA/ESA Conference on Adaptive Hardware and Systems (AHS-2007), August 2007, University of Edinburgh, Scotland, UK.

Program-Scientific Committee:

- 13th IEEE International Conference on Design & Technology of Integrated Systems in Nanoscale Era - DTIS 2018, April 10-12, 2018, Taormina, Italy

- MODERN PROBLEMS OF INNOVATIVE TECHNOLOGIES IN OIL AND GAS PRODUCTION AND APPLIED MATHEMATICS, Baku, Azerbaijan, December 2018.

- NASA/ESA Conference on Adaptive Hardware and Systems – AHS (2008, 2009, 2010, 2011, 2012, 2013, 2014, 2015, 2016, 2017, 2018)

- Wireless Mobile Communication and Healthcare – MobiHealth (2010, 2011, 2012, 2014, 2015, 2016, 2017, 2018)

- IEEE International Conference on Emerging Security Technologies (2010, 2011, 2012, 2013, 2014, 2015, 2017, 2018, 2019)

- The Genetic and Evolutionary Computation Conference – GECCO (2008, 2009, 2010, 2011, 2012, 2013, 2014, 2015, 2016, 2017, 2018, 2019)

- International Conference on Bio-inspired Systems and Signal Processing - BIOSIGNALS (2008, 2009, 2010, 2011, 2012, 2013, 2014, 2015, 2016, 2017, 2018)

- Tip Teknolojileri Ulusal Kongresi (National Conference on Medical Technologies) – TIPTEKNO (2011, 2012, 2013, 2014, 2015, 2017, 2018)

- National Meeting of the Biomedical Engineering – BIYOMUT ((2010, 2012, 2014, 2016, 2018)

- ECSIS Symposium on Intelligent Systems for Defense and Security (ISDS), September 2006, Iasi, Romania.

- International Symposium on INnovations in Intelligent SysTems and Applications (INISTA 2007), June 2007, İSTANBUL, TURKEY.

- The International Workshop on Applications of Wavelets to Real World Problems (IWW2007). Istanbul, June 2007.

- Symposium on Bio-inspired Learning and Intelligent Systems for Security (BLISS, 2007, 2008, 2009).

- 3rd National Software Engineering Symposium and Exhibition, September 2007, Bilkent University, Ankara, TR.

- The 2nd International Conference on Information Security and Assurance, April 2008, Busan, Korea.

- 4th International Conference on Global E-Security, June 2008, University of East London (UeL), Docklands, London, UK.

- 2008 ECSIS Symposium on Bio-inspired Learning and Intelligent Systems for Security (BLISS-2008), August 2008, Edinburgh, UK.

- WSEAS International Conference on COMPUTATIONAL INTELLIGENCE, MAN-MACHINE SYSTEMS and CYBERNETICS (CIMMACS '09).

- The First International Conference on Computational and Systems Biology and Microbiology (BIOSYSCOM 2010), March 7-13, 2010 - Cancun, Mexico.

- 2010 10th IEEE International Conference on Information Technology and Applications in Biomedicine - ITAB (2010, 2012).

- MEDICON2010 (12th Mediterranean Conference on Medical and Biological Engineering and Computing), 2010

- ICHI2013 (IFMBE International Conference on Health Informatics), 2013

- 3RD GLOBAL CONFERENCE ON COMPUTER SCIENCE, SOFTWARE, NETWORKS

AND ENGINEERING ISTANBUL AYDIN UNIVERSITY, ISTANBUL, TURKEY 19 – 21 NOVEMBER 2015.

- 11th International Conference on Design & Technology of Integrated Systems in Nanoscale Era, April 12-14, 2016, Istanbul, Turkey
- CICN 2017 (9th International Conference on Computational Intelligence and Communication Networks).
- The 2017 International Conference on Science and Engineering in Biology, Medical and Public Health (BIOMEDPUB 2017).
- 2017 6th International Conference on Intelligent Information Processing (ICIIP 2017).
- 2019 3rd International Conference on Cloud and Big Data Computing (ICCBDC 2019), Oxford, UK, August 28-30, 2019.
- 2019 8th International Conference on Intelligent Information Processing (ICIIP 2019), Oxford, UK, August 28-30, 2019.

Book Reviews

- Medical Data Sharing, Harmonization and Analytics, Elsevier, 2018
- Computer Vision Applications, John Wiley & Sons, 2017
- Behavioral Biometrics: a Remote Access Approach, John Wiley & Sons, 2007

Refereed for International Journals

- IEEE Transactions on Circuits and Systems
- IEEE Transactions on Biomedical Engineering
- IEEE Transaction on Information Technology in Biomedicine
- IEEE Transaction on Dielectrics and Electrical Insulation
- IEEE EMBS Magazine
- IEEE Communications Magazine
- IEEE Signal Processing Letters
- IEE Proceedings, Science, Measurement and Technology
- Medical Engineering and Physics
- Computers & Electrical Engineering
- Journal of Medical Systems
- Medical & Biological Engineering & Computing
- Journal of Biomedicine and Biotechnology
- ETRI Journal
- Physiological Measurement
- PLOS One
- Biomedical Signal Processing and Control
- BioMed Research International
- Journal of Biomedical and Health Informatics
- The AIMS Medical Science Online
- Journal of Neuroscience Methods
- Computational and Mathematical Methods in Medicine
- Engineering Applications of Artificial Intelligence
- Journal of Computer and System Sciences
- International Journal of Electronics
- International Journal of Electronics Letters
- Bioinformatics

- The Scientific World Journal
- Digital Signal Processing
- Heliyon
- BMC Bioinformatics
- Measurement
- Concurrency and Computation: Practice and Experience
- Royal Society Open Science
- Proceedings of the Royal Society A: Mathematical, Physical and Engineering Sciences
- TURKISH JOURNAL OF ELECTRICAL ENGINEERING & COMPUTER SCIENCES
- Reviews in Biomedical Engineering
- Image Analysis & Stereology
- Microprocessors and Microsystems
- Computers and Electronics in Agriculture

V. MEMBERSHIPS, AWARDS AND DISTINCTIONS

PROFESSIONAL AFFILIATIONS

- Member of Turkish Chapter of IEEE Signal Processing Society, since 1995.
- Member of Turkish Chapter of IEEE Computer Society, since 1995.
- Member of IEEE Signal Processing Society, since 1992.
- Member of IEEE Engineering in Medicine and Biology Society, since 1992.
- Member of Turkish Chamber of Electrical Engineers, since 1985.

AWARDS & ACHIEVEMENTS

- The IEE the Institute Premium Award for 2000/2001, awarded by the Institute of Electrical Engineers, UK.

- Best Presentation Award, St George's Cardiovascular Research Committee, London, October 2000.

- PhD Scholarship, awarded by the Turkish Ministry of Education for graduate studies, 1989 – 1994.

- Graduate Scholarship, awarded by the Turkish Petroleum Foundation for graduate studies, 1985 – 1987.

- Undergraduate Scholarship, awarded by the Turkish Petroleum Foundation for undergraduate studies, 1980 – 1984.