

ÖZGEÇMİŞ

İletişim Bilgileri

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3- Ünvanı : Profesör
4- Öğrenim durumu : Doktora

Derece	Alan	Üniversite	Yıl
Lise	Elektrik	Bursa Demirtaşpaşa Teknik Lisesi	1980
Lisans	Elektronik ve Haberleşme	Yıldız Teknik Üniversitesi	1984
Y. Lisans	Elektronik ve Haberleşme	Yıldız Teknik Üniversitesi	1987
Doktora	Biyomedikal Mühendisliği	Leicester Üniversitesi (UK)	1994

5- Akademik Ünvanlar

- Profesör : Bahçeşehir Üniversitesi (2006 – Devam ediyor)
Doçent : Bahçeşehir Üniversitesi (2004 –2006)
Snr. Research Fellow : Edinburgh Üniversitesi (2001-2004)
Research Fellow : Londra Üniversitesi (1998-2001)
Doçent : Gebze Yüksek Teknoloji Enstitüsü (1998-1999)
Yrd Doçent : Gebze Yüksek Teknoloji Enstitüsü (1995-1998)
Dr. : Leicester Üniversitesi (1990-1994)
Arş. Görevlisi : Yıldız Teknik Üniversitesi (1986-1989)

6- Yönetilen Yüksek Lisans ve Doktora Tezleri

20 Adet Bitirme Tez Danışmanlığı (1995-2006)

7- Yayınlar

Yazılan uluslararası kitaplar veya kitaplarda bölümler

- Aydin N**, "Venous Air Embolism: Detection via Wavelet Transform," In *Wiley Encyclopedia of Biomedical Engineering* , Ed: Metin Akay, John Wiley & Sons, Inc., Hoboken, 2006
- 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.

Uluslararası hakemli dergilerde yayınlanan makaleler

- Temel T, Morgul A, **Aydin N**, " A novel signed higher-radix full-adder algorithm and implementation with current-mode multi-valued logic circuits ". *IEE Proc.-Circuits Devices Syst.*, Vol. 153, No. 5, 489-496, October 2006.

4. **Aydin N**, Arslan T, Cumming DRS, "A Direct Sequence Spread-spectrum Communication System for Integrated Sensor Microsystems". *IEEE Trans Inf Tech Biomed.* 9, 1, 4-12, 2005.
5. **Aydin N**, Marvasti F, Markus HS, "Embolitic Doppler ultrasound signal detection using discrete wavelet transform". *IEEE Trans Inf Tech Biomed.* 8, 2, 182-190, 2004.
6. 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.
7. **Aydin N**, Markus HS, "Time-scale analysis of quadrature Doppler ultrasound signals". *IEE Proceedings - Science, Measurement and Technology.* 148, 1, 15-22, 2001.
8. **Aydin N**, Markus HS, "Directional wavelet transform in the context of complex quadrature Doppler signals". *IEEE Signal Processing Letters.* 10, 7, 278-280, 2000.
9. **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.
10. **Aydin N**, "Time varying filtering approach for simulation of ultrasonic Doppler signals". *Journal of Computer Simulation & Modelling in Medicine.* 1, 1, 67-76, 2000.
11. **Aydin N**, Padayachee S, Markus HS, "The use of the wavelet transform to describe embolic signals". *Ultrasound Med Biol.* 25, 6, 953-958, 1999.
12. **Aydin N**, Markus HS, "The use of the wavelet transform to describe embolic signals". *Cerebrovasc Dis.* 9, suppl. 2, S7, 1999.
13. 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.
14. **Aydin N**, Evans DH, "A computerised arterial graft monitoring system". *Journal of Vascular Investigation.* 1, 2, 68-74, 1995.
15. Thrush AJ, **Aydin N**, Nydahl S and Evans DH, "A new on - line automated system for monitoring lower limb bypass grafts". *Journal of Ultrasound in Medicine*, 14, suppl. 3, S35, March 1995.
16. **Aydin N**, Fan L, Evans DH, "Quadrature-to-directional format conversion of Doppler signals using digital methods". *Physiol Meas*, 15, 181-199, 1994.
17. **Aydin N**, Evans DH, "Implementation of directional Doppler techniques using a digital signal processor". *Med Biol Eng Comput*, 32, S157-S164, 1994.

Uluslararası bilimsel toplantılarda sunulan ve bildiri kitabında basılan bildiriler

18. **Aydin N**, "Processing of Complex Quadrature Signals". *ECSIS Symposium on Intelligent Systems for Defense and Security (ISDS)*, Iasi, September 2006.
19. Kaleli F, **Aydin N**, "A Region based thresholding Algorithm for Segmenting of Axial MR Breast Images ". *European Conference on Intelligent Systems and Technologies (ECIT 2006)*, Iasi, September 2006.
20. 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.

21. **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
22. 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 2006)*, Kos, May 2006.
23. **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.
24. **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.
25. 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.
26. 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.
27. 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.
28. **Aydin N**, Astaras A, Wang L, Arslan T, Murray AF, Beaumont 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.
29. **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.
30. **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.
31. **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.
32. **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.
33. **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.

34. 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.
35. 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. (Atf: 1)
36. **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.
37. **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.
38. **Aydin N**, Purdy J, Dark P, "Localizing systolic ejection within a trans-esophageal CW Doppler ultrasound aortovolographic vaweform". *Proc. 24th Annual International Conference of the IEEE Engineering in Medicine and Biology Society*, Houston, 1315-1316, 2002.
39. **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.
40. **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.
41. 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.
42. **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.
43. **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.
44. **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.
45. **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.

46. **Aydin N**, Markus HS, "Analysis of low intensity embolic signals using wavelet transform". *Proc. 3rd International Workshop on Biosignal Interpretation (BSI99)*, Chicago, 257-260, 1999.
47. **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.
48. Seker H, **Aydin N**, Yazgan E, "Wavelet based signal reconstruction for quadrature signals in Doppler ultrasound". *Proc. the IEEE 2nd International Conference, Biomedical Engineering Days*, Istanbul, 60-61, May 1998.
49. **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.
50. 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.

Ulusal bilimsel toplantılarda sunulan ve bildiri kitabında basılan bildiriler

51. 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.
52. 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.
53. 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.
54. 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.
55. **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.
56. **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.
57. **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.
58. **Aydin N**, "Design and implementation of a computerised arterial graft monitoring system". *Proc. Biyomut 95, National Biomedical Engineering Meeting*, Istanbul, 130-133, 1995.

Diğer yayınlar

59. 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.

60. **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.
61. **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.
62. **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.
63. **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.
64. 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.

Doktora tezi

65. **Aydin N**, "Computerised graft monitoring". Ph.D.dissertation, Dept. Med. Phys., University of Leicester, Leicester, UK, 1994.

9- Projeler

- Collaborative immersive visualization techniques for the interpretation of cardiovascular function in critical care medicine, EPSRC (GR/S82190), 2004-2006. (In collaboration with Dr. P. Dark (University of Manchester), Dr. P. Chapman (University of Hull), and Dr. J. Purdy (Computer Science Department, University of Hull)).
- Developing and evaluating an automated embolic signal detection system based on wavelet processing, British Heart Foundation (PG/99064), 1999-2002. (In collaboration with Prof. H. Marcus (St Georges Hospital, Department of Clinical Neuroscience, University of London), and Dr. F. Marvasti (Electronics Engineering Department, Kings College London)).
- Fuzzy C-Means Based Clustering Algorithms Approach to Magnetic Resonance Image Segmentation, Gebze Institute of Technology, University Research Committee, 1997-1998. (In collaboration with Dr. M. Esin and H. Seker).
- Development and implementation of multi-frequency Doppler System, Gebze Institute of Technology, University Research Committee, 1995-1997.

8- İdari Görevler

Bölüm Başkanı

Bahçeşehir Üniversitesi, Mühendislik Fakültesi, Yazılım Mühendisliği Bölümü, Ekim 2005 ten beri.

Bahçeşehir Üniversitesi, Mühendislik Fakültesi, Bilgisayar Mühendisliği Bölümü, Ekim 2004-Ekim 2005.

Associate Editor

IEEE Transaction on Information Technology in Biomedicine, Ocak 2003 ten beri.

Akademik Senato Üyesi

University of Edinburgh, Ekim 2002 - Temmuz 2004.

Bölüm Başkan Yardımcısı

Gebze Yüksek Teknoloji Enstitüsü, Mühendislik Fakültesi, Elektronik Mühendisliği Bölümü, Gebze, Şubat 1995 - Mart 1998.

9- Bilimsel kuruluşlara üyelikler

Turkish Chapter of IEEE Signal Processing Society, 1995 den beri.

Turkish Chapter of IEEE Computer Society, 1995 den beri.

IEEE Signal Processing Society, 1992 den beri.

IEEE Engineering in Medicine and Biology Society, 1992 den beri.

Elektrik Mühendisleri Odası, 1985 ten beri.

10- Uluslararası yayın, konferans ve proje değerlendirmede yapılan hakemlikler

Organizasyon Komitesi Başkanı: First NASA/ESA Conference on Adaptive Hardware and Systems

IEEE Transactions on Biomedical Engineering

IEEE Transaction on Information Technology in Biomedicine

IEEE Transaction on Dielectrics and Electrical Insulation

IEEE Signal Processing Letters

IEE Proceedings, Science, Measurement and Technology

Medical Engineering and Physics

Computers & Electrical Engineering

IEEE ASIC/SOC Conference 2003

IEEE SOC Conference 2004

IEEE ISCASS Conference 2003

IEEE ISCASS Conference 2004

IEEE ISCASS Conference 2005

IEEE ISCASS Conference 2006

Engineering and Physical Sciences Research Council (EPSRC), UK

Türkiye Bilimsel ve Teknik Araştırma Kurumu (TÜBİTAK)

11- Ödüller

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.

Milli Eğitim Bakanlığı yurt dışı doktora bursu, 1989 – 1994.

Türk Petrol Vakfı bursu, 1980 – 1987.

12- Verdiği bazı dersler

Lisans

Electronic Circuits & Systems

Circuit Theory

Advanced Microprocessors

Digital Circuits & Design

Fundamentals of Logic and Microprocessors

Electrical & Electronics measurements & systems

Introduction to Computer Sciences and Information Technology

Microprocessors

Computer Organization
Introduction to Bioinformatics

Yüksek Lisans

Applied Digital Signal Processing
Statistical Signal Processing
Image Processing Fundamentals
Principles of Doppler Ultrasound
Principles of Computerized Tomographic Imaging
Numerical Methods Using MAPLE
Technical English
Bioinformatics
Bilgisayar Donanımı