

## **Prof. Dr. Sadık KARA**

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Institute of Biomedical Engineering  
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### **EDUCATION**

Technician: Erciyes University, Kayseri, TR, Vocational Collage, Electrical Dept., 1980.

BSc: Erciyes University, Kayseri, TR, Electronics Eng., 1988.

MSc: Erciyes University, Kayseri, TR, Electronics Eng., 1991.  
MSc project: Sensing of ECG signals and Imaging at the Computer in Real Time.

PhD: Erciyes University, Kayseri, TR, Electronics Eng., 1995.  
Doctoral thesis: A study of Mitral and Tricuspid Valve Blood Flows by Autoregressive Spectral Analysis Method and Doppler Unit.

### **FOREIGN EXPERIENCE & COURSES**

“International Summer School on Program Design Calculi”, *NATO Advanced Study Institutes*, Munich, July 28-August 9, 1992.

“International Course in Flow and Image Cytometrie”, *NATO Advanced Study Institute*, Paris, 15-19 May 1995.

“Basic course in laboratory animals science”, *Erciyes University School of Medicine*, Kayseri, 4-5 June 2005

“Intensive language Program for academic purposes”, *University of Maryland*, USA, June 21-August 5, 2005.

“Fundamentals of Biomedical Engineering”, *ERASMUS, University of Miskolc*, Hungary, 6-12 January 2008.

“Investigation of the Biomedical Education and Research Applications in EU Countries-IBERA”, EU Leonardo da Vinci Project, Norway-Oslo, 15-21 June 2008.

### **DOMESTIC EXPERIENCE & COURSES**

“National course in Education of the instructives”, *Public awarding Soot*, 3-5 March 2003.

### **ADMINISTRATIVE & ORGANIZATIONAL EXPERIENCE**

Chief of Electric-Electronics team, Kayseri Electric Company, Kayseri, TR. 1979-1981.

Chief of electronics maintenance team, Birlik Mensucat Textile Factory, Kayseri, TR. 1981-1982.

Supervisor of electronics repair shop, Military Factory, Kayseri, TR. 1982-1991

Research assistant, Electronics Eng. Department, Erciyes University, TR. 1991-1995.

Assistant Professor, Electronics Eng. Department, Erciyes University, TR. 1995-2000

Involved in teaching, student supervision, consultancy and various research.

Head of Fine Arts Department, Erciyes University Presidency, TR, 1995-2004

Member of student activity comission, Erciyes University, TR, 1995-2004

Head of Music Department, Fine Arts Faculty, Erciyes University, TR, 2000 – 2003

Associate Professor, Electronics Eng. Department, Erciyes University, TR. 2000- 2006.

Involved in teaching, supervision of biomedical signal processing and instrumentation, consultancy and various research.

Associate Dean of Fine Arts Faculty, Erciyes University, TR, 2000 – 27 September 2005.

Member of Fine Arts Faculty Committee Erciyes University, TR, 2002 – 26 September 2005

Member of purchase commission of the Technology Research and Implem. Center, E. U. TR, 2002  
Member of Engineering Faculty Board, Erciyes University, TR, 2004 - current  
Member of Foreign citizen academican commission, Erciyes University, TR, 2005 –  
Professor, Electrical/Electronics Eng. Department, Erciyes University, TR. 23 June 2006 – 2008  
Professor, Electrical/Electronics Eng. Department, Fatih University, TR. 01 February 2008 -

### **Professional Qualifications**

Member of International federation for Medical and Biological Engineering, 2005.  
Member of Biomedical Engineering Society-BMES, 2003  
Member of Editorial Advisory Board\_of Recent Patents on Engineering Journal, 2007 –  
Member of Editorial Advisory Board of The Open Biomedical Engineering Journal, 2007 –  
Member of Editorial Advisory Board of The Open Nanoscience Journal, 2007 –  
International Journal of Biomedical Engineering and Consumer Health Informatics 2008 -

### **Counselling for Company and Foundations**

The Scientific and Technological Research Council of Turkey - TÜBİTAK, TR  
Istikbal A.Ş.- Boyteks A.Ş., TR

### **Refereed for International Journal and Conferences**

Annals of Biomedical Engineering  
IEEE Transactions on Information Technology in Biomedicine  
Medical & Biological Engineering & Computing  
Medical Science Monitor  
Biomedical Signal Processing and Control  
Digital Signal Processing  
Computer Methods and Programs in Biomedicine  
Experimental Techniques  
Expert Opinion on Drug Discovery  
Information Sciences  
Investigative Ophthalmology & Visual Science  
Journal of Computational and Applied Mathematics  
Journal of Medical Systems  
International Symposium on Innovations in Intelligent Systems and Applications-INISTA 2005, 2007  
Independent Referee for EU Life Long Learning Program  
Applied Thermal Engineering

## **COURSES BEING TAUGHT**

### **Undergraduate**

Material science for Electronics Engineering  
Electric-Electronics Science  
Digital Electronics  
Medical Electronics

## **Graduate**

Ultrasonic Energy and Its usage in Medicine

Medical instrumentation I, II

## **TECHNICAL SKILLS**

**Operating systems:** Windows

**Programming languages:** MATLAB

**Packages/design software:** Office

## **RESEARCH INTERESTS**

Biomedical signal processing and instrumentation

Signal detection and estimation

Analysis and classification of Doppler signals

Analysis and classification of Electrophysiological signals such as ECG, EMG, EGG, EOG, PERG and VEP.

Applications of the Electronic Nose

## **PROJECTS**

### **Fullfilled**

- 1997-1997: Acoustic noise elimination in industry area,  
*Technology Research and Developing Center, Erciyes University,*
- 2001-2003: PC based electrophysiologic stimulator design,  
*Technology Research and Developing Center, Erciyes University,*
- 2004- 2006 : Determination of the some eye diseases using electrophysiological signals based on ANN,  
*Institute of Science, Erciyes University*
- 2004- 2006 : Diagnosing of the vascular diseases from Doppler signals using analyzing techniques,  
*Institute of Science, Erciyes University*
- 2003- 2006 : Classification of fungus causing infections using electronic-nose technology,  
*T.R. Prime Ministry State Planning Organization*
- 2004- 2006 : Design of the EMG signal analysis and classification system,  
*Technology Research and Developing Center, Erciyes University,*
- 2004- 2006 : Diagnosis of Cirrhosis in Early Stages from Ultrasonographic Liver Images,  
*T.R. Prime Ministry State Planning Organization*
- 2007- 2008 : Classification and evaluation of Umbilical arterial Doppler signals belongs the pregnant Women using spectral analysis methods.  
*Technology Research and Developing Center, Erciyes University,*
- 2007-2008 : Investigation of the Biomedical Education and Research Applications in EU Countries,  
*European Union - Life Long Learning Program Leonardo Da Vinci Iii*

## Continous

2007- : The Muscular Activity Analysis of Circumoral and Jaw-Closing Muscles Response to the Trainer on Patients With Class II Malocclusion Using Electromyogram, *The Scientific & Technological Research Council of Turkey – TÜBİTAK.*

## **Awards and Honours**

- International Summer School on Program Design Calculi Grant, NATO Advanced Study Institutes, 28/07/1992
- International Course in Flow and Image Cytometrie Grant, NATO Advanced Study Institutes, 15/05/1995
- Scientific publication honour award, Erciyes University, Engineering Faculty, 05/07/2000
- Scientific publication honour award, Erciyes University, Engineering Faculty, 01/05/2005
- Scientific publication honour award for 2006, Erciyes University President, 18/11/2007
- Scientific publication honour award for 2007, Erciyes University President, 17/12/2008
- Scientific publication honour award for 2006, Erciyes University, Engineering Faculty, 18/11/2007
- Scientific publication honour award for 2007, Erciyes University, Engineering Faculty, 17/11/2008
- Scientific and Encouragement honour award on the Electric-Electronic Disipline, Popular Scientific, 24/03/2008.

## **PUBLICATIONS**

### *International Journal articles*

1. Güler İ, Kıymık M.K., **Kara S**, Yüksel, M.E. “Application of Autoregressive analysis to 20 Mhz Pulsed Doppler Data in real time”, *International Journal of Biomedical Computing*, Vol. 31, p.247-256, 1992.
2. Güler İ, **Kara S**, Güler N.F, Kıymık K, “ Application of Autoregressive and Fast Fourier Transform spectral analysis to tricuspid and mitral valve stenosis”, *Computer Methods and Programs in Biomedicine*, Vol. 49, p.29-36, 1996. [**B sınıfı**]
3. **Kara S**, Okandan M, Usta G, Tezcaner T, “Investigation of a new heart contractility power parameter, *Computer Methods and Programs in Biomedicine*, Vol. 76, p.177-180, 2004. [**B sınıfı**]
4. Dirgenali F, **Kara, S**, Erdoğan N, Okandan M, “Comparison of the Autoregressive modeling and Fast Fourier Transformation in demonstrating Doppler spectral waveform changes in the early Phase of atherosclerosis”, *Computers in Biology and Medicine*, Vol. 35, p.57-66, 2005.
5. **Kara S**, Kemalöglü S. “Determination of femoral artery occlusion using Principal Component Analysis to Doppler signals”, *Instrumentation Science and technology*, Vol. 33(3), p. 329-338, 2005.
6. **Kara S**, Dirgenali F, Okkesim Ş, “Estimating the gastric rhythm differences using wavelet method from electrogastrogram of normal and diabetic subjects”, *Instrumentation Science and Technology*, Vol. 33(5), p. 519-532, 2005.
7. Dirgenali F, **Kara S**, “Comparison of Eigenvector MUSIC Method with Classical FFT and Model Based AR Methods in Analysis of Mitral Valve Doppler Signals”, *Instrumentation Science and Technology*, Vol. 33(5), p. 575-595, 2005.
8. **Kara S**, Kemalöglü S, Güven A, “Detection of femoral artery occlusion from spectral density of Doppler

- signals using the artificial neural network”, *Expert Systems with Applications*, Vol. 29(4), p. 945-952, 2005.
9. Güven A, Kara S, “Diagnosis of the Macular diseases from pattern electroretinography signals using artificial neural networks”, *Expert Systems with Applications*, Vol. 30(2), p. 361–366, 2006,
  10. Dirgenali F, **Kara S**, “Recognition of early phase of atherosclerosis using principles component analysis and artificial neural networks from carotid artery Doppler signals”, *Expert Systems with Applications*, Vol. 31(4), 2006.
  11. **Kara S**, Dirgenali F, Okkesim Ş, “Detection of gastric dysrhythmia using WT and ANN in diabetic gastroparesis patients”, *Computers in Biology and Medicine*, Vol. 36(3), p. 276–290, 2006.
  12. **Kara S**, Güven A, Öner A.Ö, “Utilization of Artificial Neural Networks in the diagnosis of optic nerve diseases”, *Computers in Biology and Medicine*, Vol. 36(4), p. 428-437, 2006.
  13. Güven A, **Kara S**, Classification of Electro-Oculogram Signals Using Artificial Neural Network, *Expert Systems with Applications*, Vol. 31(1), p. 199–205, 2006.
  14. **Kara S**, Dirgenali F, “A System to Diagnose Atherosclerosis via Wavelet Transforms, Principal Component Analysis and Artificial Neural Networks *Expert Systems with Applications*. Vol. 32(2) March 2007.
  15. **Kara S**, Kemaloğlu S, Erdoğan N, “Comparison of Fast Fourier Transformation and Autoregressive modelling as a diagnostic tool in analysis of Lower extremity venous signals”, *Computers in Biology and Medicine*, Vol 36/5 pp 484-494, 2006.
  16. Kemaloğlu S, Erdoğan N, **Kara S**, “Discontinuous Doppler signals simulating respiratory misregistration: Effect on Autoregressive frequency spectra”, *Computers in Biology and Medicine*, Vol 36/5 pp 465-472, 2006.
  17. Dirgenali F, **Kara S**, Okkesim Ş, “Estimation of Wavelet and Short Time Fourier Transform sonograms of normal and diabetic subjects’ electrogastrogram”, *Computers in Biology and Medicine*, Vol 36/12, pp 1289–1302, 2006.
  18. Ceylan M, Ceylan R, Dirgenali F, **Kara S**, Özbay Y, “Classification of Carotid Artery Doppler Signals in the Early Phase of Atherosclerosis Using Complex-Valued Artificial Neural Network”, *Computers in Biology and Medicine*, Vol.37(1), pp.28 – 36, 2007.
  19. **Kara S**, Güven A, “Training a Learning Vector Quantization Network Using the Pattern Electroretinography Signals”, *Computers in Biology and Medicine*, Vol.37(1), pp.77-82, 2007.
  20. **Kara S**, Güven A, Okandan M, Dirgenali F, “Utilization of artificial neural networks and autoregressive modeling in diagnosing mitral valve stenosis”, *Computers in Biology and Medicine*. Vol 36/5 pp 473-483, 2006.
  21. İçer S, **Kara S**, Güven A, “Comparison of multilayer perceptron training algorithms for portal venous Doppler signals in the cirrhosis disease”, *Expert Systems with Applications*. Vol 31/2 pp 406-413, 2006.
  22. **Kara S**, Dirgenali F, “Detection of atherosclerosis using autoregressive modelling and principles component analysis to carotid artery Doppler signals”, *Bio-Medical Materials and Engineering*. Vol 16/4, pp. 269-277, 2006.
  23. Kara S., “Classification of Mitral Stenosis From Doppler Signals Using Short Time Fourier Transform And Artificial Neural Networks”, *Expert Systems with Applications*. Vol 33/2 pp, October 2007. [A sınıfı]
  24. Latifoğlu F, Şahan S, **Kara S**, Güneş S., “Diagnosis of atherosclerosis from Carotid Artery Doppler Signals as a real-world medical application of artificial immune systems”, *Expert Systems with Applications*. Vol 33/3 pp, November 2007.
  25. Kodaz H, **Kara S**, Latifoğlu F, Güneş S., “A New Hybrid Classifier System: Information Gain Based Artificial Immune Recognition System (IG-AIRS)”, *Experimental Techniques*, Vol.31(6), p.36-43, 2007.
  26. **Kara S**, Güven A, İçer S, “Classification of Macular and Optic Nerve Disease By Principal Component Analysis”, *Computers in Biology and Medicine*. Vol.37 pp. 836-841, 2007.
  27. Polat K, **Kara S**, Latifoğlu F, Güneş S, “A novel Approach to Resource Allocation Mechanism in Artificial Immune Recognition System: Fuzzy Resource Allocation Mechanism and Application to

- Diagnosis of Atherosclerosis Disease”, *Lecture Notes in Computer Science- LNCS*, pp. 244–255, September 2006.
28. Latifoğlu F, Kodaz H, **Kara S**, Güneş S, “Medical Application of Artificial Immune Recognition System (AIRS): Diagnosis of Atherosclerosis from Carotid Artery Doppler Signals”, *Accepted for publication in Computers in Biology and Medicine*. Vol. pp.
  29. **Kara S**, Latifoğlu F, Karahan O.İ, Kahrıman G, “Spectral analysis of portal vein Doppler signals using STFT and AR modeling in the cirrhotic portal hypertension patients”, *Experimental Techniques*, Vol.31 (2), pp. 51-56, March/April 2007.
  30. İçer S, **Kara S**, “Spectral Analysing of Portal Vein Doppler Signals In The Diagnosing Cirrhosis Patients”, *Accepted for publication in Computers in Biology and Medicine*. Vol. pp.
  31. Polat K, **Kara S**, Güven A, Güneş S, “A Hybrid Automated Detection System Based on Least Square Support Vector Machine Classifier and k-NN Based Weighted Pre-processing for Diagnosing of Macular Disease”, *Lecture Notes in Computer Science- LNCS*, pp. 338 – 345, 2007.
  32. Özbay Y, **Kara S**, Latifoğlu F, Ceylan R, Ceylan M, “Complex-Valued Wavelet Artificial Neural Network for Doppler Signals Classifying”, *Artificial Intelligence in Medicine*, Vol.40, pp. 143–156, 2007
  33. Polat K, **Kara S**, Latifoğlu F, Güneş S, “Pattern Detection of Atherosclerosis from Carotid Artery Doppler Signals Using Fuzzy Weighted Pre-Processing and Least Square Support Vector Machine (LSSVM)”, *Annals of Biomedical Engineering*, Vol. 35(5) pp. 724–732, 2007.
  34. **Kara S**, Okandan M, “Atrial Fibrillation Classification with Artificial Neural Networks”, *Accepted for publication in Pattern Recognition*, Vol. pp.
  35. Latifoğlu F, Polat K, **Kara S**, Güneş S, “Medical diagnosis of atherosclerosis from Carotid Artery Doppler Signals using principal component analysis (PCA), k-NN based weighting pre-processing and Artificial Immune Recognition System (AIRS)”, *Journal of Biomedical Informatics*, Vol.41(1), p.15–23, 2008.
  36. **Kara S**, Güven A, “Neural Network Based Diagnosing For Optic Nerve Disease From Visual Evoked Potential”, *Journal of Medical Systems*, Vol.31, pp.391-396, 2007.
  37. Güven A, Polat K, **Kara S**, Güneş S, “The Effect of Generalized Discriminate Analysis (GDA) to the Classification of Optic Nerve Disease from VEP Signals”, *Computers in Biology and medicine*, Vol.38(1), pp. 62 – 68, January 2008.
  38. Polat K, Kara S, Güven A, Güneş S, “Comparison of different classifier algorithms to diagnosing of macular and optic nerve diseases”, *Expert Systems (Special Issue on Advances in Medical Decision Support Systems*. scheduled to appear in October 2008.
  39. Kara S, Latifoğlu F, Güney M, Determining Fractal Dimension Of Umbilical Artery Doppler Signals Using Hurst Exponent”, *Accepted for publication in Journal of Medical Systems*.
  40. **Kara S**, İçer S, Erdoğan N, “Spectral broadening of lower extremity venous Doppler signals using STFT and AR modeling”, *Digital Signal Processing*, , Vol 18(4), pp. 669-676, 2008.
  41. Özşen S, **Kara S**, Latifoğlu F, Güneş S., A New Supervised Classification Algorithm in Artificial Immune Systems with Its Application to Carotid Artery Doppler Signals to Diagnose Atherosclerosis, *Computer Methods and Programs in Biomedicine*. Vol, 88, pp. 246–255, 2007
  42. **Kara S**, İçer S, Akdemir B, Polat K, “Intelligent Detection System to Diagnose of Cirrhosis Disease: Combining Generalized Discriminant Analysis and Artificial Immune Recognition System”, *Proceedings of the International Conference on Life System Modeling and Simulation (LSMS 2007)*, Published as a supplementary volume to Dynamics Of Continuous Discrete And Impulsive Systems-Series B-Applications & Algorithms, p. 28-32, ISSN 1492-8760, September 2007.
  43. Polat K, Latifoğlu F, **Kara S**, Güneş S, Usage of Novel Similarity Based Weighting Method to Diagnose the Atherosclerosis from Carotid Artery Doppler Signals, *Medical & Biological Eng. & Computing* Vol, 46, pp.353–362, 2008.
  44. Akdemir B, **Kara S**, Polat K, Güven A, Güneş S, “Ensemble adaptive network-based fuzzy inference system with Weighted Arithmetical Mean and Application to Diagnosis of Optic Nerve Disease from Visual-evoked potential Signals”, *Artificial Intelligence In Medicine*, Vol.43(2), pp. 141—149, 2008.

45. **Kara S**, Latifoğlu F, İmal E, Güney M, “Spectral Analysis Of Umbilical Artery Doppler Signals During Gestation Via Discrete Wavelet Transform”, *Accepted for publication in Experimental Technique*.
46. Polat K, **Kara S**, Güven A, Güneş S, “Usage of class dependency based feature selection and fuzzy weighted pre-processing methods on classification of macular disease”, *Expert Systems With Applications*, Volume 36, (Issue 2, Part 2), March 2009.
47. Ceylan M, Ceylan R, Özbay, Y, Kara S, “Application of Complex Discrete Wavelet Transform in Classification of Doppler Signals using Complex Valued Artificial Neural Network”, *Accepted for publication in Artificial Intelligence in Medicine*.
48. **Kara S**, Aksebzeci B.H, Kodaz H, Güneş S, Kaya E, Özbilge H, “Medical Application of Information Gain Based Artificial Medical Application of Information Gain Based Artificial Immune Recognition System (IG-AIRS): Classification of Bacteria Species”, *Accepted for publication in Expert Systems With Applications*, (paper should appear in 42(3) of the journal)
49. Polat K, Kara S, Güven A, Güneş S, “Utilization of Discretization Method on the Diagnosis of Optic Nerve Disease”, *Computer Methods and Programs in Biomedicine*, Vol 91(3), pp. 255-264, 2008.
50. Güler İ, **Kara S**, “A low-cost biotelemetry system for long time monitoring of physiological data”, *Journal of Medical Systems*, Vol. 20, No.3, 1996.
51. **Kara S**, İstek D, Okandan M, “Low cost instrumentation for the diagnosis of Hirschsprung’s disease”, *Journal of Medical Systems*, 27 (2): 157-162, April 2003.
52. **Kara S**, Okandan M, “Sphincter muscle stimulator to be used before treating anal atresia”, *Journal of Medical Systems*, 27 (5): 475-478, October 2003.
53. **Kara S**, Kemaloğlu S, Şener F, Okandan M, Erkan M.A, “Portable stimulator design aimed at differentiating facial nerves from normal tissues”, *J.of Medical Systems*, 28(2): 177-182, 2004.
54. **Kara S**, Okandan M, Şener F, Yıldırım M, “Imaging system for visualization and numerical analysis of cancer at stomach and skin tissues”, *Journal of Medical Systems*, Vol. 29 (2): 179-186, April 2005.
55. **Kara S**, Kemaloğlu S, Kırbaş Ş, “Low-Cost Compact ECG With Graphic LCD and Phonocardiogram System Design”, *Journal of Medical Systems*. Vol. 30 (3): 205–209, June 2006.

### International Conferences

56. Güler İ, **Kara S**, Yüksel M.E., “Measurement of Carotid Doppler Spectra Using Autoregressive Spectrum Analyzer”, *Proceeding of International Biomedical Engineering Days*, p. 93-95, Istanbul, August 1992.
57. Güler İ., **Kara S.**, “Detection of Mitral Stenosis by a Pulsed Doppler Flowmeter and Autoregressive Spectral Analysis Method”, *IEEE Engineering in Medicine and Biology Society. 14<sup>th</sup> Annual Conference of the Biomedical Engineering Society of India*, 2.91-2.92, New Delhi, February, 1995.
58. Kaplan A., Özer Ş., **Kara S.**, “A Comparison of Model Order Selection Criteria To Reduce Computing Time In Doppler Blood Flow Signal From Mitral and Tricuspid Valves Using AR Modeling”, *European Conference on Circuit Theory and Design*, Istanbul, Turkey, 27-31 August 1995.
59. Yüksel M.E, **Kara S**, Taşpınar N, “Time-dependent ARMA Modelling of continuous wave ultrasonic Doppler signals”, *8<sup>th</sup> IEEE International Workshop On Statistical Signal And Array Processing*, 260-263, Corfu, Greece, 24-26 June 1996.
60. Yüksel M.E, **Kara S**, Taşpınar N, “Time-varying parametric modelling and simulation of ultrasonic Doppler signals”, *3<sup>rd</sup> IEEE International Symposium on Time-Frequency and Time-scale Analysis*, 157-160, Paris, France, 18-21 June, 1996.
61. **Kara S**, Ertaş G, “Computer supported Pourcelot’s Resistance Index and S/D ratio measurement of blood flow”, *2<sup>nd</sup> International Biomedical Engineering Days*, 23-26, , Istanbul, Turkey, 20-22 May 1998.
62. **Kara S**, Güven A, “The design of a system by which some of the air parameters are transmitted between air and ground station using a model aircraft”, *International Council of The Euronaopital Sciences (22<sup>nd</sup>*

ICAS Congress), 722.1-722.5, Harrogate, U.K. 28 August -1 September 2000.

63. Kemalöglu S, **Kara S**, “Case follow-up study the patients undergoing metallic heart valves replacement through phonocardiographic analysis”, *23<sup>rd</sup> Annual Conference (IEEE/EMBS)*, 71-72, İstanbul, Turkey, October 2001.
64. Kemalöglu S, **Kara S**, “Bioelectrical impedance analysis present status and future directions”, *IXth International Symposium on Biomedical Science & Technology-BIOMED*, 83, Antalya, Turkey, September 2002.
65. **Kara S**, İstek D, Okandan M, “Rectoanal inhibitory reflex manometer design”, *2<sup>nd</sup> European Medical & Biological Engineering Conference (EMBE’02)*, 974-975, Vienna, Austria, December 2002.
66. **Kara S**, Güven A, Okandan M, “Diagnosis Mitral and Tricuspid Stenosis with the help of artificial neural Networks Built on the Fast Fourier Transformation Sonogram”, *1st International IEEE EMBS Conference on Neural Eng.*, 340-343, 20-22, Italy, 2003.
67. **Kara S**, Okandan M, “Anorectal sphincter muscle stimulator design”, *5th International Conference on Simulations in Biomedicine (BIOMEDICINE 2003)*, 375-378, Ljubljana, Slovenia, April 2003.
68. **Kara S**, Güven A, Okandan M, Dirgenali F, “Diagnosis of hearth valve stenosis through the use of artificial neural networks”, *5th International Conference on Simulations in Biomedicine (BIOMEDICINE 2003)*, 453-457, 2-4, Ljubljana, Slovenia, April 2003.
69. **Kara S**, Şener F, Kemalöglu S, Okandan M, “Simulation of intravenous pumps’ operation”, *5th International Conference on Simulations in Biomedicine (BIOMEDICINE 2003)*, 517-521, 2-4, Ljubljana, Slovenia, April 2003.
70. **Kara S**, Dirgenali F, Erdoğan N, Okandan M, “Development of fast Fourier transformation sonograms built on the Doppler responses recorded at the carotid arterials” *International XII. Turkish Symposium on Artificial Intelligence and Neural Networks (TAINN)*, Çanakkale, Turkey, July 2003.
71. **Kara S**, Usta G, Okandan M, Tezcaner T, “Derivation Of Heart Contractility Rate From The Arterial Blood Pressure Curve” *International XII. Turkish Symposium on Artificial Intelligence and Neural Networks (TAINN)*, Çanakkale, Turkey, July 2003.
72. Güven A, **Kara S**, Okandan M, “Application of artificial neural networks in the pattern elektoretinographical diagnosis of eye diseases”, *International XII. Turkish Symposium on Artificial Intelligence and Neural Networks (TAINN)*, Çanakkale, Turkey, July 2003.
73. **Kara S**, Dirgenali F, Erdoğan N, Okandan M, “Investigation of the curve-fitted Fast Fourier Transformation sonograms obtained from Doppler data of carotid arterials with four new indexes”, *25th Annual International Conference Of The IEEE Engineering In Medicine And Biology Society*, Cancun, Mexico, September 2003.
74. Erdoğan N, **Kara S**, Dirgenali F, Okandan M, “Estimating the arterial compliance in early stages of atherosclerosis: Evaluation of a new index on the curve-fitted Doppler sonograms” *ECR 2004/European Congress of Radiology*, Vienna, 5-9 March 2004.
75. İçer S, **Kara S**, “Detection of Cirrhosis by Short Time Fourier Transform Using Portal Vein Doppler Signals” *International Symposium on Innovations in Intelligent Systems and Applications-INISTA 2005*, p.17-20, 15-18 June 2005, İstanbul.
76. **Kara S**, Dirgenali F, Okkesim Ş, “Use of Discrete Wavelet Transform in The Detection of Gastric Rhythm Differences from Normal and Diabetic Subjects’ Electrogastrogram” *International Symposium on Innovations in Intelligent Systems and Applications-INISTA 2005*, p.21-24, 15-18 June 2005, İstanbul.
77. **Kara S**, Güven A, “Analysis of the Pattern Electroretinography Signals with the Learning Vector Quantization Network” *International Symposium on Innovations in Intelligent Systems and Applications-INISTA 2005*, p.25-28, 15-18 June 2005, İstanbul.
78. **Kara S**, İçer S, “Analysis of the Discontinuous Doppler Signals Simulating Respiratory Misregistration” *International Symposium on Innovations in Intelligent Systems and Applications-INISTA 2005*, p.54-57, 15-18 June 2005, İstanbul.
79. **Kara S**, Dirgenali F, Okkesim Ş, “Detection of Gastric Dysrhythmia from Sonograms Using Electrogastrogram” *International Symposium on Innovations in Intelligent Systems and Applications-INISTA 2005*, p.58-61, 15-18 June 2005, İstanbul.
80. Dirgenali F, **Kara S**, “Analysis of Carotid Artery Doppler Signals in the Early Phase of Atherosclerosis” *International Symposium on Innovations in Intelligent Systems and Applications-INISTA 2005*, p. 166-169,

15-18 June 2005, İstanbul.

81. **Kara S**, Dirgenali F, “Classification of Carotid Artery Doppler Signals by Principles Component Analysis and Artificial Neural Network in Atherosclerosis” *International Symposium on Innovations in Intelligent Systems and Applications-INISTA 2005*, p. 346-349, 15-18 June 2005, İstanbul.
82. **Kara S**, Güven A, “Detection of Pathologic Conditions from Electro-Oculogram Signals Using Artificial Neural Network” *International Symposium on Innovations in Intelligent Systems and Applications-INISTA 2005*, p. 354-357, 15-18 June 2005, İstanbul.
83. **Kara S**, Dirgenali F, Okkesim Ş, “A different method to the diagnosis of gastric dysrhythmia from the electrogastrogram”, *3 rd European medical & Biological Engineering Conference-EMBEC’05*, November 20-25, 2005, Prague, Czech Republic.
84. **Kara S**, Dirgenali F, “An expert system to diagnose the atherosclerosis from Doppler signals of carotid artery”, *3 rd European medical & Biological Engineering Conference-EMBEC’05*, November 20-25, 2005, Prague, Czech Republic.
85. İçer S, **Kara S**, “Analysis of lower extremity venous Doppler signals using spectral broadening index” , *3 rd European medical & Biological Engineering Conference-EMBEC’05*, November 20-25, 2005, Prague, Czech Republic.
86. **Kara S**, Güven A, “Classifying optic nerve disease from the pattern Electroretinography signals”, *3 rd European medical & Biological Engineering Conference-EMBEC’05*, November 20-25, 2005, Prague, Czech Republic.
87. Dirgenali F, **Kara S**, “Detection of atherosclerosis in early phase using power spectral densities of carotid artery Doppler signals”, *3 rd European medical & Biological Engineering Conference-EMBEC’05*, November 20-25, 2005, Prague, Czech Republic.
88. **Kara S**, Güven A, “Prediction of the Optic Nerve Disease From Visual Evoked Potential Signals Using An Artificial Neural Network”, *5th European Symposium on Biomedical Engineering-ESBME 2006*, 7th-9th July 2006, Patras, Greece.
89. Güven A, **Kara S**, İçer S, “Analysis of Pattern Electroretinography Signals To Designate Of Optic Nerve Disease Using Principal Component Analysis”, *5th European Symposium on Biomedical Engineering-ESBME 2006*, 7th-9th July 2006, Patras, Greece.
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