

## Curriculum Vita

**Name and Title:** Aydın Ersak, Prof.Dr.

**Date and Place of Birth:** May 19,1945, Canakkale

**Address:** Electrical and Electronics Engineering Department,  
Middle East Technical University,  
Ankara

**Phone:** +90 312 2102310

**E-mail:** ayersak@metu.edu.tr

### Academic Background:

Ph.D. in Electrical Engineering, 1979, METU, Ankara

M.S. in Electrical Engineering, 1970, METU, Ankara

B.S. in Electrical Engineering, 1968, METU, Ankara

### Employment:

Worked for several companies as Electrical Engineer during 1968-1970 then joined EEE Department of METU in 1970. He was with ABB company, Baden, Switzerland in 1982 and with EEE Department of University of Florida, Gainesville, USA in 1983.

### Teaching Experience:

EE 361 Electromechanical Energy Conversion I

EE 362 Electromechanical Energy Conversion II

EE 463 Static Power Conversion I

EE 464 Static Power Conversion II

EE 561 Advanced Static Power Conversion

EE 587 Introduction to Robot Manipulators

EE 642 Mathematical Bases of Computer Graphics

### Research Interests:

*Power Electronics; Vector Control of Induction Motors*

*Robotics ;*

- Collision-free Path Planning,

- Autonomous Mobile Robots,

- Sensory Data Fusion

### Publications

#### Journal Papers:

1. S.Çak, E.N.Dizdar, A.Ersak; "A Fuzzy Colour Quantizer for Renderers", Displays, 19, pp.:61-65, Elsevier, 1998

2. A.J.Koivo, M.C.Ramos, M.Bodur, A.Ersak; "Development of Motion Equations for Excavators and Backhoes", International Journal of Intelligent Mechatronics; Design and Production, Vol.1, No:1, pp.:46-55, September 1994
3. E.Akpinar, P.Pillay, A.Ersak; "Calculation of the Overlap Angle in Slip Energy Recovery Drives Using a d,q/abs Model" IEEE Trans. on Energy Conversion, Vol.8, No:2, pp.:229-235, June 1993
4. E.Akpinar, P.Pillay, A.Ersak; "Starting Transients in Slip Energy Recovery Induction Motor Drives: Part 1: Formulation and Modeling" IEEE Trans. on Energy Conversion, Vol.7, No:1, pp.:238-244, March 1992
5. E.Akpinar, P.Pillay, A.Ersak; "Starting Transients in Slip Energy Recovery Induction Motor Drives: Part 2: Flowchart and Performance" IEEE Trans.on Energy Conversion, Vol.7, No:1, pp.:245-251, March 1992

*Conference Papers:*

1. A.Uskarcı, A.A.Alatan, M.S.Dindaroğlu, A.Ersak; "Robot Mimicking: A Visual Approach for Human Machine Interaction", ISCIS XVIII 2003, Lecture Notes in Computer Science, Vol.: LNCS 2869, pp.: 474 - 481, Antalya, Turkey, Nov. 3 - 5, 2003
- 2.Ö.Gebizlioglu, A.Ersak;"Supervisory Control of the PUMA Mark II 700 Series Robot", Proc. of Intl. Conf. on Signal Processing, ICSP 2003, Intl.J. of Computational Intelligence Vol.1, 2, ISSN:1304-4508, Canakkale, Turkey, Sept. 24-26, 2003
- 3.B.Akin, U.Orguner, A.Ersak;"State Estimation of Induction Motor Using Unscented Kalman Filter", Proceedings of 2003 IEEE Conference on Control Applications, CCA 2003, Vol.2, pp.:915-919, Istanbul, Turkey, June 23-25, 2003
- 4.M.Fettahlioglu, A.Ersak;"System Design and Control Framework for an Autonomous Mobile Robot Application on Predefined Ferromagnetic Surfaces", Intelligent Problem Solving; Methodologies and Approaches, pp.:705-710, Springer, Proc. of 13th Intl. Conf. on Industrial and Engineering Applications of Artificial Intelligence and Expert Systems, IEA/AIE 2000, New Orleans, Louisiana, USA, June 2000
5. K.K.Aydin, E.Kocaoglan, A.Ersak; "Increasing Overall Manipulator Reliability Through Kinematic Redundancy", Proceedings of 1999 International Conference on Computational Intelligence for Modelling, Control and Automation, CIMCA'99, pp.:325-330, Vienna, Austria, Feb. 17-19, 1999
6. K.K.Aydin, E.Kocaoglan, A.Ersak; "Effects of Joint Limits on the Fault Tolerant Work Space for Planar Manipulators", Proceedings of 1999 International Conference on Computational Intelligence for Modelling, Control and Automation, CIMCA'99, pp.:281-286, Vienna, Austria, Feb. 17-19, 1999
7. M.N.Altuntas, A.Ersak; "Incorporating RGB and HLS Color Space Attributes to a Local Lighting Model for Ray Tracing", Proceedings of the 12th International Symposium on Computer and Information Sciences, ISCIS-XII, pp.:228-235, Antalya, Turkey, October 27-29, 1997
8. S.Çak, E.N.Dizdar, A.Ersak; "An Ergonomic Rendering System for Industrial Design", Proc. Of the 7th Intl. Conf. on Human-Computer Interaction, HCI Intl.'97, Vol.:"Advances in Human Factors/Ergonomics, 21A", pp.:603-606, ELSEVIER, San Fransisco, CA, USA, Aug. 24-29, 1997
9. S.Çak, A.Ersak; "Fuzzy C-Means Clustering Based on Color Selection in Ray Tracing", Proceedings of the 11th International Symposium on Computer and Information Sciences, ISCIS-XI, Vol/2, pp.:745-748, Antalya, Turkey, November 6-8, 1996

10. M.Bodur, H.Zontul, A.Ersak;"Rule Based Cognitive Force Control for Automation of Excavators",Proceedings of the 3rd International Symposium on Mine Planning and Equipment Selection, pp.:563-569, Istanbul, Turkey, October 18-20, 1994
11. E.Akpınar, A.Ersak; "Closed-Loop Control of a Slip-Energy Recovery System:Practical Results", Proceedings of 1994 IEEE Southeastcon'94, pp.:30-34, Miami, Florida, USA, April 10-13,1994
12. H.Kiragi, A.Ersak; "Object Recognition and Localization with Ultrasonic Scanning", Proceedings of 7th Mediterranean Electrotechnical Conference, IEEE Melecon'94, Vol.3, pp.:1185-1188, Antalya,12-14 April 1994
13. H.Zontul, A.Ersak; "Object-Oriented Representation of a Robot Manipulator", Proceedings of 7th Mediterranean Electrotechnical Conference, IEEE Melecon'94, Vol.2, pp.:363-366, Antalya,12-14 April 1994
14. A.S.Yücel, A.Ersak; "Design of a Variable Five-Axes Adjustable Configuration Robot Manipulator", Proceedings of 7th Mediterranean Electrotechnical Conference, IEEE Melecon'94, Vol.2, pp.:695-702, Antalya,12-14 April 1994
15. M.Bodur, H.Zontul, A.Ersak, A.J.Koivo, H.O.Yurtseven, E.Kocaoglan, G.Papamehmetoglu; "Dynamic Cognitive Force Control for an Automatic Land Excavation Robot", Proceedings of 7th Mediterranean Electrotechnical Conference, IEEE Melecon'94, Vol.2, pp.:703-706, Antalya,12-14 April 1994
16. A.T.Islier, A.Ersak; "Harmonic Minimization in a Three-Phase Asymmetrical PWM Rectifier", Proceedings of 7th Mediterranean Electrotechnical Conference, IEEE Melecon'94, Vol.2, pp.:829-832, Antalya,12-14 April 1994
17. M.Bodur, A.Ersak; "Design of a Redundant Manipulator and Inverse Kinematics Solution by Least Squares", Proceedings of IEEE International Workshop on Robot and Human Communication, RO-MAN'93, pp.:108-113, Tokyo, Japan
18. H.Zontul, A.Ersak, "Robot Kol Kinematik, Dinamik ve Denetiminin Nesneye Yönelik Tanımı", Elektrik Mühendisliği 5. Ulusal Kongresi, Bildiriler Kitabı, Cilt 1, S: 165-170, Eylül 1993, Trabzon
19. A.S.Yücel, A.Ersak, "Degisken 5-Eksenli Ayarlanabilir Yapılı Robot Kol Tasarımı", Elektrik Mühendisliği 5. Ulusal Kongresi, Bildiriler Kitabı, Cilt 1, S: 177-182, Eylül 1993, Trabzon
20. L.Yenilmez, A.Ersak, "Mobil Robotlar için Engel Sakınma", Elektrik Mühendisliği 5. Ulusal Kongresi, Bildiriler Kitabı, Cilt 1, S: 171-176, Eylül 1993, Trabzon
21. H.Kiragi, A.Ersak, "Ultrasonik Görüntüleme ve Görüntü Isleme",Elektrik Mühendisliği 5. Ulusal Kongresi, Bildiriler Kitabı Cilt 1, S: 183-188, Eylül 1993, Trabzon
22. T.H.Atis, M.Bodur, A.Ersak; "Design of a Redundant Manipulator and Inverse Kinematics Solution by Least Square Estimation Method", COMCONEL 91 International Conference on Communication, Control, Computers, Energy and Electronics Proceedings, Cairo, Egypt, Dec. 19-22, 1991
23. E.Akpınar, A.Ersak, P.Pillay; "Predicting Torque Pulsations in a Slip-Energy Recovery Induction Motor Drive", EPE'91 European Power Electronics Conference Proceedings, Vol.2, pp.:326-330, Firenze, Italy, Sept. 3-6, 1991
24. T.H.Atis, M.Bodur, A.Ersak; "Sekiz Hareket Dereceli Robot Kolu Tasarımı ve Gerçekleştirilmesi", Elektrik Mühendisliği 4. Ulusal Kongresi, Bildiriler Kitabı, Cilt 1, S:212-214, 16-22 Eylül 1991, Izmir, Turkey (Turkish)
25. K.K.Aydin, A.Ersak; "Sayısal Sistemlerin Testedilebilirliklerinin ve Optimum Test-Vektör Dizilimlerinin Paralel Olarak Gelistirilmesi", Elektrik Mühendisliği 4. Ulusal Kongresi, Bildiriler Kitabı, Cilt 2, S:540-543, 16-22 Eylül 1991, Izmir, Turkey (Turkish)

26. E.Çandarlıoğlu, A.Ersak; "Robot Eklemlerinin Kiyici Sürücülü D.A. Servomotor ve Bilgisayar ile Denetimi", Elektrik Mühendisliği 4. Ulusal Kongresi, Bildiriler Kitabı, Cilt 1, S:204-207, 16-22 Eylül 1991, İzmir, Turkey (Turkish)
27. E.Çandarlıoğlu, A.Ersak; "Robot Eklemleri için Kiyici Sürücülü D.A. Servomotorla Pozisyon Denetimi" Elektrik Mühendisliği 3. Ulusal Kongresi, Bildiriler Kitabı, Cilt 2, S:712-715, İstanbul, Turkey, 25-30 Eylül 1989 (Turkish)
28. A.Ersak; "Shaft Position Control in Induction Motors", 17.IASTED International Symposium Simulation and Modelling, Proceedings, pp.:56-59, Lugano, Switzerland, 19-22 June 1989
29. Ö.U.Sahin, A.Ersak; "Resolverden Sayisala İzleyen Çevirici", Elektrik Mühendisliği 2. Ulusal Kongresi, Bildiriler Kitabı, Cilt 1, S:159-162, Ankara, Turkey, Eylül 23-25, 1987 (Turkish)
30. E.Tulunay, M.Askar, A.Ersak, Ö.Yüksel "A Study on Engineering Education - Industry Collaboration in Turkey" WAITRO Int. Seminar on Interaction of R & D Institutes With Local Industry, JTI Aarhus, Danemark, 22-25 Sept. 1986
31. A.Ersak, "On the Transient Performance of Induction Motor Under High Accuracy Requirements", International MOTORCON'83 Conference Proceedings, pp.:301-6, Orlando, Florida, USA, 19-21 April 1983
32. A.Ersak, Ö.H.Oral, "A Controller Design for the Multivariable Controlled Induction Motor", International IFAC Workshop on Computer Aided Design of Projects and Development Policies", Proceedings, pp.:406-23, METU, Ankara, Turkey, June 22- 24,1982
33. B.Kiliçaslan, A.Ersak, "Darbe Genislik Bindirimli Evirgeç Sürücülü Endüksiyon Motorlarında Döndürü-Kuvvet ve Hiz Salınımları", TÜBİTAK VII. Bilim Kongresi, Bildiriler Kitabı, S:423-34, Kusadasi, Turkey, 29 Eylül - 3 Ekim 1980 (Turkish)
34. B.Kiliçaslan, A.Ersak, "Analysis of a PWM Inverter Driven Induction Machine", International Conference on Electrical Machines, Proceedings, Vol. 2, pp.:678-688, Athens, Greece, 15-17 Sept. 1980.
35. A.Ersak, Ö.H.Oral, "On the Multivariable Controlled Induction Motors", International Conference on Electrical Machines, Proceedings, Vol. 2, Paper No: E2/3, Brussel, Belgium, Sept.11-13, 1978.
36. M.A.Gündüz, A.Ersak, "Kesintisiz Güç Kaynağı Tasarımı", TÜBİTAK VI. Bilim Kongresi, Bildiriler Kitabı, S:281- 295, Çesme, İzmir, Turkey, Ekim 24-28, 1977 (Turkish)
37. A.Ersak, "Speed Control of Induction Motors Using Triacs", 3rd Power Electronics Conference, Proceedings, Vol. 1, Paper No.1.12, Budapest, Hungary, Oct. 17-22,1977.