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Atılım University
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EDUCATION

1992-1999	Middle East Technical University, Mechanical Engineering, Ph.D.
1989-1992	Middle East Technical University, Mechanical Engineering, M.S.
1985-1989	Middle East Technical University, Mechanical Engineering, B.S.

ACADEMIC POSITIONS

10/2017-	Assoc. Prof. Dr., Dept. of Mechatronics Engineering, Atılım University, Turkey
04/2017-	Assoc. Prof. Dr., ÜAK, Turkey
02/2009-09/2017	Asst. Prof. Dr., Dept. of Mechatronics Engineering, Atılım University, Turkey
06/2006-01/2009	Asst. Prof. Dr., Dept. of Manufacturing Engineering, Atılım University, Turkey
09/1999-05/2006	Asst. Prof. Dr., Dept. of Industrial Engineering, Atılım University, Turkey
03/1999-08/1999	Instructor, Dept. of Industrial Engineering, Atılım University, Turkey
02/1998-02/1999	Instructor, Dept. of Industrial Engineering, Çankaya University, Turkey
09/1997-01/1998	Instructor (Part Time), School of Applied Technology and Management, Bilkent University, Turkey
03/1991-09/1997	Research Assistant, Dept. of Mechanical Engineering, Middle East Technical University, Turkey

INDUSTRIAL EXPERIENCE

08/1989-02/1991	Design Engineer, R&D Mechanical Design Directorate, ASELSAN, Turkey
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ADMINISTRATIVE DUTIES

12/2013 - 10/2017	Vice Chair, Dept. of Mechatronics Engineering, Atılım University
2011 -	Accreditation Coordinator, Dept. of Mechatronics Engineering, Atılım University
2011 -	Coordinator of Transfer Students, Dept. of Mechatronics Engineering, Atılım University
2010 -	Founding Member, Robotic Technologies Research and Application Center (RoTAM), Atılım University
2009 -	Founding Member, Electrical Discharge Machining Technologies Research Center (EeTAM) , Atılım University
02/2007 – 09/2008	Academic Board Member, Dept. of Modeling and Design of Engineering Systems (MODES), Graduate School of Natural and Applied Sciences, Atılım University

2005 - 2006	Faculty Board Member, Faculty of Engineering, Atılım University
2002 - 2006	Academic Advisor, Industrial Engineering Student Club, Atılım University
2006 – 2008	Coordinator of Transfer Students, Dept. of Manufacturing Engineering, Atılım University
2000 - 2006	Double Major Program Coordinator, Dept. of Industrial Engineering, Atılım University
2013 -	Member, Atılım University Library Advisory Board

RESEARCH INTERESTS

1	Engineering Design Methodology
2	Modular Design Methodology for Social Robots
3	Petri Nets in Design Modelling
4	Behaviour Based Design
5	Bio-Inspired Design

PROFESSIONAL SERVICE

09/2015 -	Mechatronics Engineering Program Evaluator, Association for Evaluation and Accreditation of Engineering Programs (MÜDEK)
	Referee for the following journals: IEEE Transactions on Systems, Man and Cybernetics- Part A: Systems and Humans, Research in Engineering Design, International Journal of Advanced Robotic Systems, Journal of Advances in Mechanical Engineering, Paladyn. Journal of Behavioural Robotics, Inderscience, International Journal of Design Engineering, Gazi University Journal of Science, Turkish Journal of Electrical Engineering and Computer Sciences, Makina Tasarım ve İmalat Dergisi, Çankaya University, Journal of Arts and Sciences
	IPC Member, 9 th International Conference on Simulation and Modelling Methodologies, Technologies and Application (SIMULTECH 2019), July 29-31, Prague, Czech Republic.
	TPC Member, 11 th International Conference on Advances in System Simulation (SIMUL 2019), November 24-28, 2019, Valencia , Spain.
	IPC Member, 8 th International Conference on Simulation and Modelling Methodologies, Technologies and Application (SIMULTECH 2018), July 29-31, Porto, Portugal.
	TPC Member, 10 th International Conference on Advances in System Simulation (SIMUL 2018), October 14-18, Nice, France,
	TPC Member, 14 th International Conference on Natural Computation, Fuzzy Systems and Knowledge Discovery (ICNC-FSKD 2018), July 28-30, Huanshan, China
	IPC Member, 7 th International Conference on Simulation and Modelling Methodologies, Technologies and Application (SIMULTECH 2017), July 26-28, Madrid, Spain.
	TPC Member, 9 th International Conference on Advances in System Simulation (SIMUL 2017), October 8-12, Athens , Greece
	TPC Member, 13 th International Conference on Natural Computation, Fuzzy Systems and Knowledge Discovery (ICNC-FSKD 2017), July 29-31, Guilin, China
	IPC Member, 6 th International Conference on Simulation and Modelling

	Methodologies, Technologies and Application (SIMULTECH 2016), July 29-31, Lisbon, Portugal.
	TPC Member, 8 th International Conference on Advances in System Simulation (SIMUL 2016), August 21-25, Rome , Italy
	TPC Member, 12 th International Conference on Natural Computation, Fuzzy Systems and Knowledge Discovery (ICNC-FSKD 2016), August 13-15, ChangSha, China.
	IPC Member, 5 th International Conference on Simulation and Modelling Methodologies, Technologies and Application (SIMULTECH 2015), July, 21-23, Colmar, Alsace, France.
	TPC Member, 11 th International Conference on Natural Computation (ICNC 2015) / the 2015 12th International Conference on Fuzzy Systems and Knowledge Discovery (FSKD 2015), August 15-17, Zhangjiajie, China.
	Organizing Committee Member&Proceedings Editor, 6 th National Mechatronics Engineering Student Conference (MeMÖK 2015), June 13, 2015, Atılım University, Ankara, Turkey.
	TPC Member, 11 th International Conference on Fuzzy Systems and Knowledge Discovery (FSKD 2014) , August 19-21, Xiamen, China.
	Organizing Committee Member&Proceedings Editor, 5 th National Mechatronics Engineering Student Conference (MeMÖK 2014), May 24, 2014, Atılım University, Ankara, Turkey.
	TPC Member, 10 th International Conference on Fuzzy Systems and Knowledge Discovery (FSKD 2013) , July 23-25, Shenyang, China.
	Organizing Committee Member&Proceedings Editor, 20 th International Conference on Mechatronics and Machine Vision in Practice (M2VIP 2013), September 20, 2013, Ankara, Turkey.
	Organizing Committee Member&Proceedings Editor 4 th National Mechatronics Engineering Student Conference (MeMÖK 2013), June 8, 2013, Atılım University, Ankara, Turkey.
	TPC Member, 7 th International Conference on Natural Computation (ICNC 2011) / 8 th International Conference on Fuzzy Systems and Knowledge Discovery (FSKD 2011), July 26-28, Shanghai, China.
	IPC Member, 9 th Mechatronics Forum International Conference (Mechatronics 2004), August 30-September 1, 2004, Ankara, Turkey.
	Organizing Committee Member&Proceedings Editor, 6 th International Conference on Mechatronic Design and Modelling (MDM 2002), Cappadocia, Turkey, 2002.
	Editor, Proceedings of the 5 th International Conference on Mechatronic Design and Modelling (MDM 2001), Konya, Turkey, 2001.
	Organizing Committee Member&Proceedings Editor, 6 th International Conference on Mechatronics and Machine Vision in Practice (M2VIP 99), Ankara, Turkey, September 1-3, 1999.

PUBLICATIONS

1	Erden, Z. , "Development of Behavioural Modules for Mechatronic Product Families Using the 3D Design Structure Matrix Approach", <i>Transactions of the SDPS: Journal of Integrated Design and Process Science</i> , 23(1), 141-160, 2019 (DOI 10.3233/JID190011)
2	Erden, Z. , Araz, M., "Robot Tasarımı için Geliştirilen Petri Ağları ile Davranış Modellemesi Yaklaşımının Bir Malzeme Taşıma Robotu Modeline Uygulanması", <i>Fırat Üniversitesi Mühendislik Bilimleri Dergisi</i> , 31(1), 2019 (In Turkish)
3	Erden, Z. , Aized, T., "Modelling and Simulation of AGVs Using Petri Nets", <i>Robotics and Automation Engineering Journal</i> , 3(5), DOI: 10.19080/RAEJ.2018.03.555622, 2018.
4	Araz, M., Erden, Z. , "Behavioural Representation and Simulation of Design Concepts for Systematic Conceptual Design of Mechatronic Systems Using Petri Nets", <i>International Journal of Production Research</i> , 52(2), 563-583, 2014.
5	Erden, Z. , "State-Based Conceptual Design in Mechatronics via Petri Nets: A Case Study for an Educational Robot", <i>Control Engineering and Applied Informatics</i> , 13(2), 70-75, 2011.
6	Konez Eroğlu, A., Erden, Z. , Erden, A., "Biological System Analysis in Bioinspired Conceptual Design (BICD) for Bioinspired Robots", <i>Control Engineering and Applied Informatics</i> , 13 (2), 81-86, 2011.
7	Erden, Z. , Konez Eroğlu, A. ve Erden, A., "Kavramsal Mekatronik Tasarımda Davranış Tabanlı Modelleme Yaklaşımı ve Biyobenzetim Robot Tasarımına Uygulanması", <i>Mühendis ve Makina</i> , 52 (618), 50-59, 2011. (In Turkish)
8	Erden, Z. , "A New Perspective to Design Education in Industrial Engineering: Product Design Projects at Freshman", <i>MMO Endüstri Mühendisliği Dergisi</i> , 19 (1), 19-32.
9	Erden, Z. , "Ürün Tasarımında Bilgi Akışındaki Belirsizliklerin Sezgisel Bulanık Önermeler Yaklaşımı ile Modellenmesi", <i>Makina Tasarım ve İmalat Dergisi</i> , 8 (2), 80-91, 2006. (In Turkish)
10	Erden, Z. , Erden, A., Erkmen, A. M., "A Petri Net Approach to Behavioral Simulation of Design Artifacts with Application to Mechatronic Design", <i>Research in Engineering Design</i> , 14(1), 34-46, 2003.
11	Erden, Z. , Erkmen A. M., Erden, A., "Kavramsal Tasarım Otomasyonunda Petri Net ve Melez Otomat Sentezi", <i>Makina Tasarım ve İmalat Dergisi</i> , 4 (1), 33-46, 2001. (In Turkish)
12	Erden, Z. , Erkmen, A. M., Erden, A., "A Petri Net Based Design Network with Applications to Mechatronic Systems", <i>Transactions of the SDPS: Journal of Integrated Design and Process Science</i> , 2(3), 32-48,1998.

PROJECTS

1	Project Title: Development of fundamental behavioral modules for modular mechatronic design, Project No: ATÜ-LAP-A-1617-06 Supported by: Atılım University LAP Project Duration: 15.11.2016-31.08.2017 Project Coordinator
2	Project Title: Behavior based modeling for conceptual robot design and desktop design of educational robots, Project No: ATÜ-BAP-1011-07

	Supported by: Atılım University BAP Project Duration: 01.02.2011-01.02.2013 Project Coordinator
3	Project Title: Development of biomimetic design methodology with reverse engineering in cognitive recognition and control of biomimetic robots, Project No: 109M379 Supported by: TÜBİTAK (The Scientific and Technological Research Council of Turkey)-ANCS (National Authority for Scientific Research of Romania) A joint project between the Department of Mechatronics Engineering, Atılım University, Turkey and University of Craiova, Romania Project Duration: 01.07.2010-01.07.2012 Researcher
4	Project Title: Development of techniques for the design of intelligent machines and design of two technology demonstrators Project No: Modisa 7 Supported by: TÜBİTAK (The Scientific and Technological Research Council of Turkey) Project Duration: 1992-1994 Researcher

CONFERENCE PRESENTATIONS

1	Özer, İ., Erden, Z. "Systematic Generation of a 3D DSM by Extracting Social Robot Behaviors from Literature", <i>Proceedings of the Design Society: 22th International Conference on Engineering Design (ICED 2019)</i> , 1(1), August 5-8, Delft, The Netherlands, pp.3731-3740 (doi:10.1017/dsi.2019.380), 2019.
2	Erden, Z. , "Development and Implementation of Behavioural Modules for Platform-Based Mechatronic Design", <i>12th International Symposium on Tools and Methods of Competitive Engineering (TMCE 2018)</i> , Las Palmas de Gran Canaria, Spain, 2018.
3	Özer, İ., Erden, Z. "Literature-Based Identification of Behavioural Modules for Social Robots Using Design Structure Matrix", <i>18th International Conference on Machine Design and Production (UMTIK 2018)</i> , Eskişehir, Turkey, 2018.
4	Erden, Z. , "Smazzle: A Demonstrative Case Study for Modular Design of Mechatronic Products", <i>International Conference on Engineering Technologies (ICENTE '17)</i> , Konya, Turkey, 2017.
5	Erden Z. , Araz, M., "Petri Net Modeling and Simulation of Walking Behaviour for Design of a Bioinspired Robot Dog", <i>6th International Conference on Simulation and Modeling Methodologies, Technologies and Applications</i> , Lisbon, Portugal, 2016.
6	Ayhan, E., Erden, Z. , "Implementation of Function Structure Heuristics for Modular Design of an Educational Mechatronic Product Family", <i>17th International Conference on Machine Design and Production (UMTIK 2016)</i> , Bursa, Turkey, 2016.
7	Erden, Z. , "Conceptual Structuring of Modular Design Methodology for Mechatronic Systems: Behaviour Based Design Perspective", <i>16th International Conference on Machine Design and Production (UMTIK 2014)</i> , İzmir, Turkey, 2014.
8	Konez Eroğlu, A., Erden, Z. , Erden, A., "Bioinspired Transformation for Design of Biorobots", <i>16th International Conference on Machine Design and Production (UMTIK 2014)</i> , İzmir, Turkey, 2014.
9	Konez Eroğlu, A., Erden, Z. , Erden, A., "Developing an Analysis Process for Biological Systems to Design Biorobots - A Case Study of Human Hand Gripping Motion", <i>20th International Conference on Mechatronics and Machine Vision in Practice (M2ViP2013)</i> , Ankara, Turkey, 2013.
10	Erden, Z. , Araz, M., "Development of a Desktop Design Setup for MechatronicsEngineering Education at Sophomore Level", <i>The 2nd International Engineering Education Conference (IEEC 2012)</i> , Antalya,

	Turkey, 2012.
11	Araz, M., Erden, Z. , "A Case Study on Behavior Based Modelling of Educational Robots at Conceptual Design: Behavioral Simulation of a Pick Packing AGV Using Petri Nets", <i>15th International Conference on Machine Design and Production (UMTIK 2012)</i> , Pamukkale-Denizli, Turkey, 2012.
12	Konez Erođlu, A., Güner, E., Gürel, C., Erden, Z. , Erden, A., "Design and Manufacturing of a Cockroach Biorobot for Implementation of a Bioinspired Conceptual Design (BICD) Methodology", <i>15th International Conference on Machine Design and Production (UMTIK 2012)</i> , Pamukkale-Denizli, Turkey, 2012.
13	Konez Erođlu, A., Erden, Z. , Erden, A., "Bioinspired Conceptual Design (BICD): Conceptual Design of a Grasshopper-Like Jumping Mechanism as a Case Study", <i>18th International Conference on Engineering Design (ICED 11)</i> , Copenhagen, Denmark, 2011.
14	Konez Erođlu, A., Erden, Z. , Erden, A., "Bioinspired Conceptual Design (BICD) Approach for Hybrid Bioinspired Robot Design Process", <i>IEEE International Conference on Mechatronics (ICM 2011)</i> , İstanbul, Turkey, 2011.
15	Erden, Z. , Erden, A., "An Incremental Approach to Teach Mechatronics Design at the Sophmore Level of Mechatronics Engineering Education", <i>12th International Workshop on Research and Education in Mechatronics (REM 2011)</i> , Kocaeli, Turkey, 2011.
16	Erden, Z. , "Representation of the Operational Behaviour of an Educational Robot at Conceptual Design Using Petri Nets", <i>ASME 2010 10th Biennial Conference on Engineering Systems Design and Analysis (ESDA 2010)</i> , İstanbul, Turkey, 2010.
17	Erden, Z. , "Behaviour Based Modelling Approach for the Conceptual Design of Mechatronic Systems Using Discrete Event System Specification (DEVS) Formalism", <i>14th International Conference on Machine Design and Production (UMTIK 2010)</i> , Güzelyurt, KKTC (Turkish Republic of Northern Cyprus), 2010.
18	Konez Erođlu, A., Erden, Z. , Erden, A., "Towards Development of a New Biomimetic/Bioinspired Design Methodology", <i>14th International Conference on Machine Design and Production (UMTIK 2010)</i> , Güzelyurt, KKTC (Turkish Republic of Northern Cyprus), 2010.
19	Erden, Z. , Konez Erođlu, A., "Towards Modelling the Behaviour of Biological Systems Using Coloured Petri Nets for Biomimetic Robot Design: A Case Study", <i>13th International Conference on Machine Design and Production (UMTIK 2008)</i> , İstanbul, Turkey, 2008.
20	Erden, Z. , "A Coloured Petri Net Approach for Modelling Information, Material and Energy Flows Through a Design Artefact at the Conceptual Level", <i>11th International Conference on Machine Design and Production (UMTIK 2004)</i> , Antalya, Turkey, 2004.
21	Gürođlu, S., Erden, Z. , Erden, A., "Implementation of Petri Net Based Design Network on the Automation of Mechatronic Design", <i>The International Conference on Engineering Design (ICED 01)</i> , 21-23 Ağustos, Glasgow-Scotland, UK, 2001.
22	Erden, Z. , Gürođlu, S., Erden, A., "Functional Synergy in Mechatronic Design by Integrating Petri Nets and Hybrid Automata", <i>7th Mechatronics Forum International Conference (Mechatronics2000)</i> , Atlanta, USA, 2000.
23	Erden, Z. , Erkmen, A. M., Erden, A., "Handling Uncertainty in Design Automation Using Intuitionistic Fuzzy Propositions", <i>12th International Conference on Engineering Design (ICED 99)</i> , Munich, Germany, 1999.
24	Gürođlu, S., Erden, Z. , Erkmen, A. M., Erden, A., "The Design Network Simulator (DNS): An Implementation Software for a Petri Net-Based Design Network Applied to Mechatronic Design", <i>6th International Conference on Mechatronics and Machine Vision in Practice (M2VIP 99)</i> , Ankara, Turkey, 1999.

25	Erden, Z. , Erkmen, A. M, Erden, A., "A Petri Net-Based Inference Network for Design Automation Under Nondeterminism Applied to Mechatronic Systems", <i>6th UK Mechatronics Forum International Conference (Mechatronics 98)</i> , Skövde, Sweden, 1998.
26	Erden, Z. , Erkmen, A. M, Erden, A., "Structuring of the SMDMnet: A Design Inference Network for Mechatronic Systems", <i>2nd International Symposium on Intelligent Manufacturing Systems</i> , Sakarya, Turkey, 1998.
27	Erden, Z. , Erkmen, A. M., Erden, A., "Modelling Job-Resource Interactions in Mechatronic Design Process by Petri Nets", <i>11th International Conference on Engineering Design (ICED 97)</i> , Tampere, Finland, 1997.
28	Erden, Z. , Erkmen, A. M, Erden, A., "Generation of Functional Cells for a Mechatronic Design Network", <i>5th UK Mechatronics Forum International Conference (Mechatronics 96) with the 3rd International Conference on Mechatronics and Machine Vision in Practice (M2VIP 96)</i> , Guimaraes, Portugal, 1996.
29	Erden, Z. , Erkan, M, Erden, A., "A Computer Based Design Support System for Automated Access to the F.E.M. Rules in a Crane Design Procedure", <i>7th International Conference on Machine Design and Production (UMTIK96)</i> , Ankara, Turkey, 1996.
30	Kendi, C., Öztürk, D., Ünsal (Erden), Z. , Erden, A., "Development of Prototype Mobile Robots as Technology Demonstrators", <i>6th International Conference on Machine Design and Production (UMTIK94)</i> , Ankara, Turkey, 1994.
31	Ünsal (Erden), Z. , Erden, A., "Computer Automated Access to the F.E.M. Rules for Crane Design", <i>The International Conference on Engineering Software (ICES 93)</i> , Staffordshire-England, UK, 1993.
32	Ünsal (Erden), Z. , Erden, A., "Design Note: A Simulation Software for an Intelligent Area Sweeping Machine", <i>Mechatronic Design and Modelling Workshop</i> , Ankara, Turkey, 1993.
33	Ünsal (Erden), Z. , Erden, A., "Development of a Design Automation Software for Crane Design with F.E.M. Rules", <i>1992 ASME International Computers in Engineering Conference and Exposition</i> , San Francisco, USA, 1992.

CITATIONS

Sum of times cited without self-citations (ISI Web of Science):	12
H-index (ISI Web of Science):	2

COURSES GIVEN (in the Dept. of Mechatronics Engineering, Atılım University)

1	MECE 101 Fundamentals of Engineering
2	MECE 102 Fundamentals of Mechatronics Engineering
3	MECE 202 Principles of Engineering Design
4	MECE 203/ME 211 Statics and Mechanics of Materials (Engineering Mechanics I)
5	MECE 206 Product Development
6	MECE 304 Mechanical Machine Elements
7	ME 316 Machine Elements
8	MECE 401 Mechatronics Design I

9	MECE 407 Undergraduate Research Projects I
10	MECE 408 Undergraduate Research Projects II
11	MECE 425 Behaviour Based Engineering Design
12	MECE 441 Artificial Intelligence
13	MECE 702 Mechatronics for Electrical/Electronics Engineers

THESES SUPERVISED

1	PhD Thesis, Aylin Konez Erođlu, "A bioinspired conceptual design methodology for biorobots", Atılım University, 2013 (As a co-supervisor).
2	MS Thesis, Macit Araz, "Behavior based modeling at conceptual robot design and desktop design of educational robots", Atılım University, 2012.
3	MS Thesis, Emre Ayhan, "Design of a modular educational set-up for mechatronics engineering", Atılım University ,2013.
4	MS Thesis, Amir Nobahar, "System Design of a Guide/Guard Robot", Atılım University , 2014 (As a co-supervisor).
5	MS Thesis, İlayda Özer, "Development of Behavioural Modules for Social Robot Product Families", Atılım University (Ongoing)
6	MS Thesis, R. Atakan Arslan, "Petri Net Based Modelling of Material Flow and Production Line for a Smart Factory with Collaborative Robots", Atılım University (Ongoing)