

Murat Özbayoğlu

Curriculum Vitæ

TOBB University of Economics and Technology
Department of Computer Engineering
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Areas of Interests

- Applied Computational Intelligence (for Finance, Manufacturing, Chemical Processes, Materials Science)
- Machine Learning and Pattern Recognition
- Data Science, Big Data Analytics
- Computer Vision and Image Processing
- Evolutionary Computation

Education

- 1993
1996
PhD Engineering Management, *Missouri University of Science & Technology*, formerly known as University of Missouri-Rolla, **GPA: 3.82/4.0**, Rolla, MO, USA.
Thesis: Hierarchical Fingerprint Identification based on an Unsupervised Neural Network
- 1992
1993
M.S. Engineering Management, *Missouri University of Science & Technology*, **GPA: 3.91/4.0**, Rolla, MO, USA.
Emphasis on Information Technology, also completed 5 courses in Computer Science.
- 1987
1991
B.S. Electrical Engineering, *Middle East Technical University*, Ankara, Turkey.
Emphasis on Telecommunications and Computer

Employment History

- 2005
Assistant Professor, *Faculty of Engineering*, Department of Computer Engineering. TOBB University of Economics and Technology (TOBB ETU), Ankara, Turkey
- 2001
2005
Senior Programmer/Analyst, *Manufacturing MIS Department*, St. Peters Plant. MEMC Electronic Materials, Inc., St. Louis, MO, USA
- 2001
Software/Database Engineer, *Vizyonsoft*, contracted to ARIA Mobile Services. Istanbul, Turkey
- 1997
2001
Software Engineer/Consultant, *Beyond Inc.*, contracted to MEMC Electronics. St. Peters, MO, USA
- 1996
1997
Product Development Engineer, *Beyond Inc.*, St. Peters, MO, USA.
- 1995
1996
Industrial Engineer, *Marathon Electric Co.*, West Plains, MO, USA.
- 1992
1995
Graduate Research Assistant, *Smart Engineering Systems Lab*. University of Missouri-Rolla, Rolla, MO, USA
- 1991
Technical Department Manager, *Apple Center Senkron*, Ankara, Turkey.
- 1992
1990
Intern Electrical Engineer, *Vega Electric*, Ankara, Turkey.
- 1989
Intern Electrical Engineer, *Gold Fields of South Africa*, Johannesburg, RSA.

Teaching Experience

Undergraduate courses at TOBB ETU

BIL 001	Introduction to Computer Engineering	Fall '05
BIL 102	Programming with Java	Fall '05, Spring '06,'07,'08
BIL 106	Database Management	Spring '18
BIL 114	Programming with C/C++	Spring '12, Summer '12
BIL 132	Discrete Mathematics	Spring '07,'08,'09,'14,'15,'16, '17, '18, Summer '14,'15,'16,'17, '18
BIL 331	Analysis of Algorithms	Fall '07,'08,'09, Spring '10,'11,'13,'14, Summer '11,'12
BIL 441	Artificial Intelligence	Fall '07,'08, Spring '10, Summer '13
BIL 442	Artificial Neural Networks	Summer '16
BIL 443	Pattern Recognition	Fall '06,'09, Spring '09,'12, Summer '14,'17, '18
BIL 467	Image Processing	Fall '10, Spring '08

Graduate courses at TOBB ETU

BIL 531	Design and Analysis of Algorithms	Fall '07, Spring '06
BIL 574	Computational Intelligence in Finance	Spring '12,'15,'17

Online courses (for Ahmet Yesevi University)

TBIL 403	Database Design and Management	Fall '12, Spring '13
TBIL 503	Graduation Design Project	Fall '12
	Artificial Intelligence (for Kazakhstan campus)	Fall '12

Invited talks / Tutorials / Short courses

2018	Algorithmic Trading with Evolutionary Algorithms and Deep Learning , TOBB University, Ankara, 18 January 2018.
2017	Machine Learning & Pattern Recognition Course , STM Inc., Ankara, 15-22 November 2017.
2017	Open Data Analytics with Deep Learning , National Workshop on Big and Open Data, Ministry of Telecommunications, Ankara, 23 May 2017.
2016	Evolutionary Algorithms in Finance , Department of Computer Engineering Seminars, TOBB University of Economics & Technology, Ankara, 16 November 2016.
2016	Data Science in Cyber Environments , 3 rd Int. Cyber Security Workshop, Gelisim University, Istanbul, 10-14 October 2016.
2016	Data Science with Big Data , Data Science Meetup, Bilkent Univ., Ankara, 25 January 2016.
2015	Design and Development of an Ontology based Multi Agent Virtual Enterprise (OMAVE) System , Engineering Management and Systems Engineering Webex seminars, Missouri University of Science and Technology, Rolla, MO, USA, 13 February 2015.
2014	Pattern Recognition Course , Baskent Elektrik, ENERJISA Inc., Ankara, 4 September 2014.
2012	Applications of Neural Networks , Department of Mathematics Seminars, Ankara, 15 May 2012.

R&D and Project Experience

Principal Investigator

2016

A Multi-Agent Simulation and Backtesting workbench software for Deep Learning and Evolutionary Algorithm based Options Trading Strategy Optimization,
The Scientific and Technological Council of Turkey, TUBITAK 1001 project
Project No: 215M248, Duration: 36 months.

Team 1 Principal Investigator, 1 consultant, 2 PhD students, 4 graduate students

Description Analysis and optimization of different option strategies for various market conditions using deep learning and evolutionary computation methodologies

Keywords Deep learning, financial markets, stock and option trading, multi-agent systems, evolutionary computation, options strategy optimization

2014
2016

ATM User Profiling and Menu Optimization,
Ministry of Science, Industry and Technology SANTEZ project with PROVUS, A.S
Project No: STZ-0367-2013.2, Duration: 21 months.

Team 1 Principal Investigator, 1 researcher, 2 graduate students

Description Creating customized user ATM menus optimized for faster navigation and efficiency.

Keywords Menu optimization, ETL, clustering, machine learning, evolutionary computation, computational intelligence, Hadoop Mapreduce, transaction forecasting

2008
2011

Determination Of Cuttings Transport Properties Of Gasified Drilling Fluids,
The Scientific and Technological Council of Turkey, TUBITAK 1001 project
Project No: 108M106, Duration: 30 months.

Team 1 Principal Investigator, 1 researcher, 2 PhD students, 1 graduate student

Description Analysis of multiphase gas-liquid-cuttings flow in eccentric annuli for extracting flow characteristics using image processing and computational intelligence techniques

Keywords Gas-liquid-cuttings flow, image processing, machine learning, computational intelligence, liquid holdup estimation, pressure drop estimation, horizontal or inclined annuli

Researcher

2018

Development of Advanced Machining Monitoring and Prediction Algorithms using Deep Learning for Industry 4.0,
The Scientific and Technological Council of Turkey, TUBITAK 1001 project
Project No: 118M414, Duration: 24 months.

Team 1 Principal Investigator, 1 researcher, 1 PhD and 1 graduate student

Description Develop deep learning based prediction models between process control and monitoring parameters and process consequences such as tool wear, tool breakage, and chatter for preventive maintenance

Keywords Deep learning, advanced process monitoring, computational intelligence, tool condition monitoring, Industry 4.0

2015

Establishing Crop Information System for Wheat Production to Sustain Food Security,
The Scientific and Technological Council of Turkey, TUBITAK 3001 project
Project No: 115O850, Duration: 36 months.

Team 1 Principal Investigator, 3 researchers, 1 graduate student

Description Analysis of wheat crop data using classical and machine learning techniques and provide a crop information system and database with a web interface

Keywords Crop information system, computational intelligence, field yield estimation, GIS

2013
2016

ECOMANINDUSTRY,

European Union FP7-LEAD-ERA Project, Duration: 36 months.

Team 3 international partners, 6 researchers, 2 programmers, 2 graduate students

Description Creating a web based software for data collection and identifying clean production and industrial symbiosis potentials for companies

Keywords Clean Production, Industrial Symbiosis, software development, database, GIS

2012
2015

A Virtual Factory Framework for SMEs,

Ministry of Science, Industry and Technology SANTEZ project with OSTIM Teknoloji, A.S, Duration: 36 months.

Team 1 Principal Investigator, 3 researchers, 1 PhD student, 3 graduate students

Description Development of an Ontology based Multi-Agent Operational Virtual Factory Framework for Production High Value Added Products by SMEs

Keywords Virtual Enterprise, ontology, multi-agent systems, partner selection, high value added products manufacturing

2009
2010

SIMOD - Simulation and Modelling for Coal Gasification,

Turkish Coal Industries Research project, Duration: 9 months.

Team 1 Principal Investigator, 4 researchers

Description Identifying and optimizing coal gasification parameters and modelling different coal gasification setups with Matlab and MFIX

Keywords Coal gasification, process optimization

Consultant

2016
2017

CyDecSys - Advanced Cybersecurity Decision Support System Development,

The Scientific and Technological Council of Turkey, TUBITAK TEYDEB project with STM A.Ş, Duration: 14 months.

Team STM team & 2 consultants from TOBB ETU

Description Development of rule-based and machine learning algorithms for vulnerability classification, pre-condition and postcondition analysis, attack graph generation

Keywords Machine Learning, Cybersecurity Vulnerability Classification

2015
2017

Big Data Analytics, STM Technology , Duration: 24 months.

Team STM R&D Department Researchers and Engineers

Description Technical consultancy in Big Data Analytics projects

Keywords Traffic Flow Analysis, Social Network Analysis, Forecasting Models, Data Science, User profiling

2014
2017

SEAS - Smart Energy Awareness System, Budget: 3,5 Million Euro

European Union H2020 Project, Duration: 36 months.

Team 21 international partners, 3 consultants from TOBB ETU

Description Developing a framework for smart grids for energy efficiency in producer-consumer networks and demonstrating the system on a micro-grid located in Ankara.

Keywords Smart Grid, Energy Efficiency, ontology, pattern recognition

2010
2011

Telegraph-A recommendation system for Interactive TV,

The Scientific and Technological Council of Turkey, TUBITAK TEYDEB project with ANEL-ARGE A.Ş, Duration: 10 months.

Team ANEL-ARGE team & 3 consultants from TOBB ETU

Description Development of a web-based interactive TV application providing a user information and recommendation system

Keywords Interactive TV, recommendation systems, software development

Books

2015

Akın Ömer and **Özbayoğlu A. Murat**. *Ayrık Matematik ve Uygulamaları - Translation of Discrete Mathematics and its Applications, 7th edition by Kenneth Rosen*. Palme Yayıncılık.

2007

Yazıcı Ali, Doğdu Erdoğan, **Özbayoğlu A.Murat**, Erten Y.Murat, and Ergin Oğuz. *Introduction to Java Programming (in Turkish)*. Palme Yayıncılık.

Book Chapters

2017

A. Murat Özbayoğlu. "Open Data Analytics with Deep Learning". In: ed. by Şeref Sağıroğlu Orhan Koç. *Big Data and Open Data Analytics: Methods and Applications (in Turkish)*. Grafiker. Chap. 7, pp. 115–130.

SCI Journal Publications

2018

Karimov, J., **Ozbayoglu, A.M.**, and Tavlı, B. "Menu Optimization for Multi-Profile Customer Systems on Large Scale Data". *Informatica*, under review.

2018

Ozbayoglu, A.M., Akbaş, A., Yıldız, H.U., and Tavlı, B.B. "Neural Network based Instant Parameter Prediction for Wireless Sensor Network Optimization Models". *Wireless Networks*, 1–14, DOI:10.1007/s11276–018–1808–y.

2018

Ozbayoglu, A.M., Durlu, N., and Çalışkan, N.K. "Automated Image Analysis and Contiguity Estimation for Liquid Phase Sintered Tungsten Heavy Alloys". *Powder Metallurgy and Metal Ceramics*, under review.

2018

Ozbayoglu M.E., Erge, O., and **Ozbayoglu, A.M.** "Predicting the pressure losses while the drillstring is buckled and rotating using artificial intelligence methods". *Journal of Natural Gas Science and Engineering* 56, 72–80, DOI:10.1016/j.jngse.2018.05.028.

2018

Seyfioğlu, M.S., **Ozbayoglu, A.M.**, and Gürbüz, S.Z. "Deep Convolutional Autoencoder for Radar-Based Classification of Similar Aided and Unaided Human Activities". *IEEE Transactions on Aerospace and Electronic Systems* 54.4, 1709–1723, DOI: 10.1109/TAES.2018.2799758.

2018

Sezer, Ö.B., Dogdu, E., and **Ozbayoglu, A.M.** "Context Aware Computing, Learning and Big Data in Internet of Things: A Survey". *IEEE Internet of Things Journal* 5.1, 1–27, DOI: 10.1109/JIOT.2017.2773600.

2018 Sezer, Ö.B. and **Ozbayoglu, A.M.** "Algorithmic Financial Trading with Deep Convolutional Neural Networks: Time Series to Image Conversion Approach". *Applied Soft Computing* 70, 525–538, DOI:10.1016/j.asoc.2018.04.024.

2018 Sezer, Ö.B. and **Ozbayoglu, A.M.** "Financial Trading Model with Stock Bar Image Time Series with Deep Convolutional Neural Networks". *Intelligent Automation and Soft Computing*, in press.

2018 Tombul, H., **Ozbayoglu, A.M.**, and Ozbayoglu M.E. "Computational Intelligence Models for PIV based Particle (Cuttings) Direction and Velocity Estimation in Multi-Phase Flows". *Journal of Petroleum Science and Engineering*, in press, DOI:10.1016/j.petrol.2018.09.071.

2017 Sadigh, B. Lotfi, Nikghadam, S., **Ozbayoglu, A.M.**, Unver, H.O., Dogdu, E., and Kilic, S.E. "An ontology-based multi-agent virtual enterprise system (OMAVE): part 2: partner selection". *International Journal of Computer Integrated Manufacturing*, DOI:10.1080/0951192X.2017.1285424, 31 January 2017.

2016 Sadigh, B. Lotfi, Nikghadam, S., Unver, H.O., **Ozbayoglu, A.M.**, and Kilic, S.E. "An ontology-based multi-agent virtual enterprise system (OMAVE): part 1: domain modelling and rule management". *International Journal of Computer Integrated Manufacturing*, DOI: 10.1080/0951192X.2016.1145811, 19 February 2016.

2015 Nikghadam, S., Sadigh, B.Lotfi, **Ozbayoglu, A.M.**, Unver, H.O., and Kilic, S.E. "A survey of partner selection methodologies for virtual enterprises and development of a goal programming-based approach". *International Journal of Advanced Manufacturing Technology*, 1–22, DOI 10.1007/s00170–015–8068–0, 12 November 2015.

2015 Osgouei, R.E., Özbayoğlu, E., **Özbayoğlu, M.**, and Yüksel, E. "A new model to determine the two phase drilling Fluid Behaviors through Horizontal Eccentric Annular Geometry, Part A: Flow Pattern Identification and Liquid Holdup Estimation". *Energy Sources, Part A: Recovery, Utilization, and Environmental Effects* 37.15, 1663–1673, DOI: 10.1080/15567036.2011.574192, 13 July 2015.

2015 Osgouei, R.E., Özbayoğlu, E., **Özbayoğlu, M.**, and Yüksel, E. "A new model to determine the two phase drilling Fluid Behaviors through Horizontal Eccentric Annular Geometry, Part B: Frictional Pressure Losses Estimation". *Energy Sources, Part A: Recovery, Utilization, and Environmental Effects* 37.16, 1756–1765, DOI: 10.1080/15567036.2011.561275, 15 July 2015.

2015 Osgouei, Reza Etehadi, **Özbayoğlu, A. Murat**, Ozbayoglu, Evren M., Yuksel, Ertan, and Eresen, Aydin. "Pressure drop estimation in horizontal annuli for liquid–gas 2 phase flow: Comparison of mechanistic models and computational intelligence techniques". *Computers & Fluids* 112, 108–115, DOI: 10.1016/j.compfluid.2014.11.003, 2 May 2015.

2014 Sorgun, Mehmet, **Özbayoğlu, A Murat**, and Ozbayoglu, M Evren. "Support Vector Regression and Computational Fluid Dynamics Modeling of Newtonian and Non-Newtonian Fluids in Annulus With Pipe Rotation". *Journal of Energy Resources Technology* 137.3, 5 pages, paper No 032901, DOI: 10.1115/1.4028694, 21 October 2014.

2013

Özbayoğlu, AM, Kasnakoglu, C, Gungor, A, Biyikoglu, A, and Uysal, BZ. "A Two-Stage Water-Gas Shift Reactor Model To Obtain Desired Synthesis Gas Characteristics With Adjustable Reactor Parameters". *Journal of The Faculty of Engineering And Architecture of Gazi University* 28.2, 339–351, June 2013.

2013

Sorgun, Mehmet, Osgouei, Reza E, Ozbayoglu, M Evren, and **Özbayoğlu, A Murat**. "Gas-Liquid Flow Through Horizontal Eccentric Annuli: CFD and Experiments Compared". *Energy Sources, Part A: Recovery, Utilization, and Environmental Effects* 35.10, 891–899, DOI: 10.1080/15567036.2011.559524, 8 April 2013.

2012

Gungor, Afsin, **Özbayoğlu, Murat**, Kasnakoglu, Cosku, Biyikoglu, Atilla, and Uysal, Bekir Zuhtu. "A parametric study on coal gasification for the production of syngas". *Chemical Papers* 66.7, 677–683, DOI: 10.2478/s11696–012–0164–0, July 2012.

2012

Özbayoğlu, A Murat and Yuksel, H Ertan. "Analysis of gas–liquid behavior in eccentric horizontal annuli with image processing and artificial intelligence techniques". *Journal of Petroleum Science and Engineering* 81.1, 31–40, DOI: 10.1016/j.petrol.2011.12.008, January 2012.

2012

Ozbayoglu, Mehmet, Osgouei, Reza, **Özbayoğlu, Murat**, and Yuksel, Ertan. "Hole Cleaning Performance of Gasified Drilling Fluids in Horizontal Well Sections". *SPE Journal* 17.3, 912–923, DOI: 10.2118/131378–PA, September 2012.

2009

Ozbayoglu, E.M. and **Özbayoğlu, A M**. "Estimating flow patterns and frictional pressure losses of two-phase fluids in horizontal wellbores using artificial neural networks". *Petroleum Science and Technology* 27.2, 135–149, DOI: 10.1080/10916460701700203, 27 January 2009.

2008

Özbayoğlu, Gülhan, **Özbayoğlu, A Murat**, and Özbayoğlu, M Evren. "Estimation of Hardgrove grindability index of Turkish coals by neural networks". *International Journal of Mineral Processing* 85.4, 93–100, DOI: DOI: 10.1016/j.minpro.2007.08.003, 31 January 2008.

Other Journals

2017

Adalı, S.F., Demirci, M.F., and **Ozbayoglu, A.M**. *Automated Image Matching and New Readings for Cyrus the Great's 547 BC Campaign in the Nabonidus Chronicle (BM 35382 = ABC 7)*. *Die Welt des Orients* vol. 47, (2), pp. 153–185.

2016

Agca, M. Akif, Atac, Senol, Yucesan, M. Mert, Kucukayan, Gokhan Y., **Ozbayoglu, A. Murat**, and Dogdu, Erdogan. *Opinion Mining of Microblog Texts on Hadoop Ecosystem*. Ed. by 2nd IBM Cloud Academy Conference. *International Journal of Cloud Computing* vol. 5.1-2, 79–90, DOI: 10.1504/IJCC.2016.075096.

2015

Nikghadam, S., Lotfi Sadigh, B., **Ozbayoglu, A. M**, Unver, H. O., and Kilic, S. E. *Evaluation of Partner Companies based on Fuzzy Inference System for Establishing Virtual Enterprise Consortium*. *Lecture Notes in Computer Science – CCIS Communications in Computer Science* vol. 577, 104–115, DOI: 10.1007/978–3–319–27680–9_7, 15 Dec 2015.

2014

Adalı, Selim F., Demirci, M. Fatih, **Özbayoğlu, A. Murat**, and Ergin, Oğuz. *Why the Names? Anubanini and His Clan in the Cuthaeen Legend. Journal of the Ancient History and Cultures of the Eastern Mediterranean* vol. 11, pp. 15–29.

2011

Güngör, A., **Ozbayoglu, A.M.**, Kasnakoglu, C., Biyikoglu, A., and Uysal, B.Z. *Determination of Air/Fuel and Steam/Fuel Ratio for Coal Gasification Process to Produce Synthesis Gas. Journal of Environmental Science and Engineering* vol. 5.5, pp. 799–804.

Conference Publications

2018

Aksu, U., Bıçakçı, K., Dilek, H., and **Ozbayoglu, A.M.** “Automated Generation Of Attack Graphs Using NVD”. *CODASPY '18 Eighth ACM Conference on Data and Application Security and Privacy*. Tempe, AZ, 19-21 March, 2018, 135–142, DOI:10.1145/3176258.3176339.

2018

Dogdu, E., **Ozbayoglu, A.M.**, Yazıcı, A., and Karakaya, Z. “Perceptions, Expectations and Implementations of Big Data in Public Sector”. *UBMK 18, International Conference on Computer Engineering*. 20-23 September, Sarajevo, Bosnia-Herzegovina.

2018

Güdelek, U., Çırak, C., Arın, E., Sezgin, E., **Ozbayoglu, A.M.**, and Göl, M. “Load and PV generation Forecast based Cost Optimization for Nanogrids with PV and Battery”. *53rd International Universities Power Engineering Conference (UPEC)*. 4-7 September, Glasgow, Scotland.

2018

Sarı, M. and **Ozbayoglu, A.M.** “Classification of Turkish Documents using Paragraph Vector”. *International Artificial Intelligence and Data Processing Symposium*. 27-28 September, Malatya, Turkey.

2018

Sarıkan, S.S. and **Ozbayoglu, A.M.** “Anomaly Detection in Vehicle Traffic with Image Processing and Machine Learning”. *Complex Adaptive Systems 2018*. 5-7 November, Chicago, IL, USA.

2018

Ufuk, D.U., Temizel, A., and **Ozbayoglu, A.M.** “Optimized GPU Implementation of JPEG 2000 for Satellite Image Decompression”. *CSE 2018, 21st IEEE International Conference on Computational Science and Engineering*. 29-31 October, Bucharest, Romania.

2017

Arın, Efe, Güdelek, U., and **Ozbayoglu, A.M.** “Quora Duplicate Query Elimination”. *LTC '17, 8th Language and Technology Conference*. Poznan, Poland, 17-19 November 2017.

2017

Güdelek, M.U., Bölük, S.A., and **Ozbayoglu, A.M.** “A Deep Learning based Stock Trading Model with 2-D CNN Trend Detection”. *IEEE Computational Intelligence in Financial Engineering (IEEE CIFE 2017) in IEEE Symposium Series on Computational Intelligence (IEEE SSCI 2017)*. 27 November - 1 December, Honolulu, HI, USA.

2017

Kahya, M., Serin, G., **Ozbayoglu, A.M.**, and Ünver, H.Ö. “Investigation of rough milling of Ti6Al4V using response surface methodology”. *8th International Symposium on Machining*. Antalya, Turkey, 02-04 November 2017.

2017 Önal, A.C., Sezer, Ö.B., **Ozbayoglu, A.M.**, and Dogdu, E. "Weather Data Analysis and Sensor Fault Detection Using An Extended IoT Framework with Semantics, Big Data, and Machine Learning". *IEEE International Conference on Big Data, 2017*. Boston, MA, USA, 11-14 December 2017.

2017 Sarıkan, S.S., **Ozbayoglu, A.M.**, and Zilci, O. "Automated Vehicle Classification with Image Processing and Computational Intelligence". *Procedia Computer Science, Complex Adaptive Systems, CAS 2017*. Vol. 114. Chicago, IL, USA, 30 October-1 November, 2017, pp. 515–522.

2017 Serin, G., Güdelek, M.U., **Ozbayoglu, A.M.**, and Ünver, H.Ö. "Estimation of parameters for the free-form machining with deep neural net". *IEEE International Conference on Big Data, 2017*. Boston, MA, USA, 11-14 December 2017.

2017 Serin, G., Kahya, M., **Ozbayoglu, A.M.**, and Ünver, H.Ö. "An artificial neural network based power prediction model for rough cutting of AISI 304". *8th International Symposium on Machining*. Antalya, Turkey, 02-04 November 2017.

2017 Seyfioğlu, M.S., Gürbüz, S.Z., **Ozbayoglu, A.M.**, and Yüksel, M. "Deep learning of micro-Doppler features for aided and unaided gait recognition". *2017 IEEE Radar Conference*. Seattle, WA, USA, 8-12 May 2017, pp. 1125–1130.

2017 Sezer, Ö.B., **Ozbayoglu, A.M.**, and Dogdu, E. "A Deep Neural-Network Based Stock Trading System Based on Evolutionary Optimized Technical Analysis Parameters". *Procedia Computer Science, Complex Adaptive Systems, CAS 2017*. Vol. 114. Chicago, IL, USA, 30 October-1 November, 2017, pp. 473–480.

2017 Sezer, Ö.B., **Ozbayoglu, A.M.**, and Dogdu, E. "An Artificial Neural Network-based Stock Trading System Using Technical Analysis and Big Data Framework". *ACM Southeast Conference, ACMSE 2017*. Kennesaw State University, GA, April 13-15, 2017, pp. 223–226.

2016 Kulcu, S., Dogdu, E., and **Ozbayoglu, A.M.** "A Survey on Semantic Web and Big Data Technologies for Social Network Analysis". *IEEE International Conference on Big Data, 2016*. Washington, DC, 5–8 December, 2016, pp. 1768–1777.

2016 **Ozbayoglu, A.M.**, Küçükayan, G., and Dogdu, E. "A Real-Time Autonomous Highway Accident Detection Model Based on Big Data Processing and Computational Intelligence". *IEEE International Conference on Big Data, 2016*. Washington, DC, 5–8 December, 2016, pp. 1807–1813.

2016 Nikghadam, S., **Özbayoğlu, A.M.**, Ünver, H. O., and Kilic, S. E. "Design of a Customer's Type Based Algorithm for Partner Selection Problem of Virtual Enterprise". *Procedia Computer Science, Complex Adaptive Systems, CAS 2016*. Vol. 95. Los Angeles, CA, USA, 2-4 November, 2016, 467–474, DOI:10.1016/j.procs.2016.09.323.

2016 Sezer, O.B., Dogdu, E., **Ozbayoglu, A.M.**, and Onal, A.C. "An Extended IoT Framework with Semantics, Big Data, and Analytics". *IEEE International Conference on Big Data, 2016*. Washington, DC, 5–8 December, 2016, pp. 1849–1856.

- 2015 Demiray, Y.S., **Özbayoğlu, A.M.**, and Taş, B.K.O. "Estimation of the Number of Participants in Government Tenders with Computational Intelligence". *3rd Workshop on Social and Algorithmic Issues in Business Support (SAIBS) 2015*. Poznan, Poland, 27-29 November 2015, pp. 433–437.
- 2015 Karimov, J., **Özbayoğlu, M.**, and Dogdu, E. "k-means Performance Improvements with Centroid Calculation Heuristics both for Serial and Parallel environments". *2015 IEEE Big Data Congress*. New York, NY, 27 June-2 July 2015, 444–451, DOI: 10.1109/BigDataCongress.2015.72.
- 2015 Karimov, Jeyhun and **Ozbayoglu, A Murat**. "Clustering Quality Improvement of K-means Using a Hybrid Evolutionary Model". *Procedia Computer Science, Complex Adaptive Systems, CAS 2015*. Vol. 61. San Jose, CA, 2-4 November, 2015, 38–45, DOI:10.1016/j.procs.2015.09.143.
- 2015 Karimov, Jeyhun and **Ozbayoglu, A Murat**. "High quality clustering of big data and solving empty-clustering problem with an evolutionary hybrid algorithm". *IEEE International Conference on Big Data, 2015*. Santa Clara, CA, 29 October - 1 November 2015, pp. 1473–1478.
- 2015 Karimov, Jeyhun, **Özbayoğlu, A Murat**, Tavlı, Bülent, and Doğdu, Erdoğan. "Generic Menu Optimization for Multi-profile Customer Systems". *IEEE International Symposium on Systems Engineering, ISSE 2015*. Rome, Italy, 28-30 September 2015, 163–169, DOI: 10.1109/SysEng.2015.7302750.
- 2015 Nikghadam, S., Sadigh, B.Lotfi, **Ozbayoglu, A. M.**, Unver, H. O., and Kilic, S. E. "Partner selection in formation of virtual enterprises using fuzzy logic". *International Conference on Operations Research and Enterprise Systems, ICORES 2015*. Lisbon, Portugal, 10-12 January 2015, pp. 82–88.
- 2015 Ucar, I., **Ozbayoglu, M.**, and Ucar, M. "Developing a Two Level Options Trading Strategy Based on Option Pair Optimization of Spread Strategies with Evolutionary Algorithms". *IEEE Congress on Evolutionary Computation, CEC 2015*. Sendai, Japan, May 25-28 2015, 2526–2531, DOI: 10.1109/CEC.2015.7257199.
- 2014 Agca, M. Akif, Atac, Senol, Yucesan, M. Mert, Kucukayan, Gokhan Y., **Özbayoglu, A. Murat**, and Dogdu, Erdogan. "Opinion Mining of Microblog Texts on Hadoop Ecosystem". *2nd IBM Cloud Academy Conference, ICA CON 2014*. Atlanta, GA, 8-9 May, 2014.
- 2014 Doğdu, Erdogan, **Özbayoğlu, A. Murat**, Benli, Okan, Erdener Akınç, Hülya, Erol, Erdeniz, Atasoy, Tugrul, Gurec, Ozan, and Erçin, Özden. "Ontology-centric data modelling and decision support in smart grid applications a distribution service operator perspective". *Proc. of the 2014 IEEE International Conference on Intelligent Energy and Power Systems (IEPS)*. Kyiv, Ukraine, June 2-6, 2014, 198–204, DOI: 10.1109/IEPS.2014.6874179.
- 2014 Gumus, Tuna, Hugli, Christoph, Hengevoss, Dirk, Kılıç, Engin, Massard, Guillaume, **Özbayoğlu, Murat**, and Unver, Ozgur. "Conceptualization of a Web-based Software Platform that enables Clean Production and Industrial Symbiosis". *16th International Conference on Machine Design and Production, UMTIK 2014*. İzmir, Turkey, 30 June - 2 July 2014.

2014

Sadigh, B Lotfi, Arikan, F, **Ozbayoglu, AM**, Unver, HO, and Kilic, SE. "A Multi-agent System Model for Partner Selection Process in Virtual Enterprise". *Procedia Computer Science, Complex Adaptive Systems, CAS 2014*. Vol. 36. Philadelphia, PA, 3-5 November 2014, 367–372, DOI:10.1016/j.procs.2014.09.007.

2014

Sahin, Ugur and **Ozbayoglu, A Murat**. "TN-RSI: Trend-normalized RSI Indicator for Stock Trading Systems with Evolutionary Computation". *Procedia Computer Science, Complex Adaptive Systems, CAS 2014*. Vol. 36. Philadelphia, PA, 3-5 November 2014, 240–245, DOI:10.1016/j.procs.2014.09.086.

2013

Osgouei, R.E., Özbayoğlu, M.E., **Özbayoğlu, A.M**, and Eren, T. "Three phase flow characteristics in Inclined Eccentric Annuli". *2013 IADC/SPE Drilling Technology Conference and Exhibition (MEDT)*, Dubai, UAE, 7-9 October 2013, 1–23, DOI: 10.2118/166687–MS.

2013

Osgouei, Reza Etehad, Ozbayoglu, Mehmet Evren, **Ozbayoglu, Murat**, and Yuksel, Ertan H. "The Determination of Two Phase Liquid-Gas Flow Behavior Through Horizontal Eccentric Annular Geometry by Modification of Beggs & Brill and Lockhart & Martinelli Models". *ASME 2013 Fluids Engineering Division Summer Meeting*. Incline Village, NV, 7-11 July 2013, 1–9, DOI:10.1115/FEDSM2013–16206.

2013

Ucar, Mustafa, Bayram, Ilknur, and **Ozbayoglu, A Murat**. "A Two-Level Cascade Evolutionary Computation Based Covered Call Trading Model". *Procedia Computer Science, Complex Adaptive Systems, CAS 2013*. Vol. 20. Baltimore, MD, 13-15 November 2013, 472–477, DOI:10.1016/j.procs.2013.09.305.

2012

Guven, Erhan and **Ozbayoglu, A Murat**. "Note and Timbre Classification by Local Features of Spectrogram". *Procedia Computer Science, Complex Adaptive Systems, CAS 2012*. Vol. 12. Washington D.C., 14-16 November 2012, 182–187, DOI:10.1016/j.procs.2012.09.051.

2012

Ozbayoglu, A.Murat, Ozbayoglu, M.Evren, and Ozbayoglu, Gulhan. "Comparison of Gross Calorific Value Estimation of Turkish Coals using Regression and Neural Networks Techniques". *XXVIth International Mineral Processing Congress (IMPC 2012)*, Paper No: 420. New Delhi, India, 24-28 September 2012, pp. 4011–4023.

2012

Özbayoğlu, A Murat and Bozer, Recep. "Estimation of the Burned Area in Forest Fires Using Computational Intelligence Techniques". *Procedia Computer Science, Complex Adaptive Systems, CAS 2012*. Vol. 12. Washington D.C., 14-16 November 2012, 282–287, DOI:10.1016/j.procs.2012.09.070.

2012

Osgouei, Reza Etehad, Ozbayoglu, Mehmet Evren, and **Ozbayoglu, Murat**. "A Mechanistic Model to characterize the Two Phase Drilling Fluid Flow through inclined Eccentric Annular Geometry". *SPE Oil and Gas India Conference and Exhibition*. Mumbai, India, 28-30 March 2012, 1–14, DOI: 10.2118/155147–MS.

2012

Sorgun, Mehmet, **Ozbayoglu, Murat**, and Ozbayoglu, Evren. "Estimation of Frictional Pressure Losses in Annulus with Pipe Rotation Using Neural Networks and Computational Fluid Dynamics". *10th International Conference on Advances in Civil Engineering, ACE 2012*. Ankara, Turkey, 17-19 October 2012.

2011

Imamoglu, N, Eresen, A, and **Ozbayoglu, AM**. "Hierarchical rule-based neural network for multi-object classification using invariant features". *2011 International Symposium on Innovations in Intelligent Systems and Applications (INISTA)*. Istanbul, Turkey, 15-18 June 2011, 296-299, DOI: 10.1109/INISTA.2011.5946079.

2011

Ozbayoglu, A Murat and Yuksel, H Ertan. "Estimation of Multiphase Flow Properties using Computational Intelligence Models". *Procedia Computer Science, Complex Adaptive Systems, CAS 2011*. Vol. 6. Chicago, IL, 31 October-2 November 2011, 493-498, DOI:10.1016/j.procs.2011.08.091.

2011

Sorgun, Mehmet, **Ozbayoglu, A.Murat**, and Ozbayoglu M.Evren. "Gas-Liquid Flow Through Horizontal Eccentric Annuli: CFD and Experiments Compared". *ASME-JSME-KSME Joint Fluids Engineering Conference 2011*. Hamamatsu, Japan, 24-29 July 2011, 1-6, DOI:10.1115/AJK2011-24007.

2010

Biyikoğlu, Atilla, Güngör, Afşin, Kasnakoğlu, Coşku, **Özbayoğlu, Murat**, and Uysal, Zühtü. "Effect of Operation Parameters on Gasification For The Production of Synthesis Gas". *27th Annual International Pittsburgh Coal Conference*. İstanbul, Turkey, 11-14 October 2010.

2010

Gungor, Afsin, **Ozbayoglu, Murat**, Kasnakoglu, Cosku, Biyikoglu, Atilla, and Uysal, Bekir Zuhtu. "Determination of Air/Fuel and Steam/Fuel ratio for Coal Gasification process to produce Synthesis Gas". *2nd International Conference on Nuclear and Renewable Energy Sources, Ankara, Turkey, 4-7 July 2010*.

2010

Gungor, Afsin, **Özbayoğlu, Murat**, Kasnakoglu, Cosku, Biyikoglu, Atilla, and Uysal, Bekir Zuhtu. "A Parametric Study on Coal Gasification For The Production Of Syngas". *8th European Conf. On Coal Research and Its Applications-ECCRIA-8, Leeds Univ., 6-8 September 2010*.

2010

Ozbayoglu, A.Murat and Erkut, Umur. "Stock Market Technical Indicator Optimization by Genetic Algorithms". *Artificial Neural Networks for Engineering 2010 (ANNIE 2010)*. St. Louis, MO, 1-3 November 2010, 589-596, DOI: 10.1115/1.859599.paper73.

2010

Ozbayoglu, Murat, Kasnakoglu, Cosku, Gungor, Afsin, Biyikoglu, Atilla, and Uysal, Bekir Zuhtu. "An Analysis of Water Gas-Shift Reactor Battery System for Synthesis Gas Refinement". *11th International Combustion Symposium, Sarajevo, Bosnia-Herzegovina, 24-27 June 2010*.

2010

Özbayoğlu, A.M., Özbayoğlu, M.E., and Özbayoğlu, G. "Regression Techniques and Neural Network for the Estimation of Gross Calorific Value of Turkish Coals". *XIIth International Mineral Processing Symposium*. Cappadocia-Nevşehir, Turkey, 6-8 October 2010, pp. 1175-1180.

2010

Osgouei, R.E., Ozbayoglu, M.E., **Ozbayoglu, A.M**, and Yuksel, E. "Hole Cleaning Performance of Gasified Drilling Fluids in Horizontal Well Sections". *SPE International Oil and Gas Conference & Exhibition, Paper SPE 131378*. Beijing, China, 8-10 June 2010, 1-18, DOI: 10.2118/131378-MS.

2010

Osgouei, Reza Etehad, Ozbayoglu, ME, **Ozbayoglu, MA**, and Yuksel, E. "Flow pattern identification of gas-liquid flow through horizontal annular geometries". *Paper SPE 129123, SPE Oil and Gas India Conference and Exhibition*. Mumbai, India, 20-22 January 2010, 1-9, DOI: 10.2118/129123-MS.

2010

Ozbayoglu, Mehmet Evren, Osgouei, Reza Etehad, **Ozbayoglu, Ahmet Murat**, and Yuksel, Ertan. "Estimation of "Very-Difficult-to-Identify" Data for Hole Cleaning, Cuttings Transport and Pressure Drop Estimation in Directional and Horizontal Drilling". *IADC/SPE Asia Pacific Drilling Technology Conference and Exhibition (APDT)*. Ho Chi Minh City, Vietnam, 1-3 November 2010, 1–18, DOI: 10.2118/136304-MS.

2009

Imamoglu, N, Eresen, A, Yağcı, A, and **Ozbayoglu, A.M.** "Performance Analysis of Moments in Invariant Object Classification". *Intelligent Engineering Systems Through Artificial Neural Networks*. Vol. 19. St. Louis, MO, 2-4 November 2009, 447–454, DOI: 10.1115/1.802953.paper56.

2008

Ozbayoglu, A.M and Bahadır, I. "Comparison of Bayesian Estimation and Neural Network Model in Stock Market Trading". *Intelligent Engineering Systems Through Artificial Neural Networks*. Vol. 18. St. Louis, MO, 9-12 November 2008, 581–586, DOI: 10.1115/1.802823.paper73.

2008

Ozbayoglu, A.Murat, Aydiner, Z, Kasnakoğlu, C, and Ozbayoglu, M.E. "Neural network and genetic programming in pressure loss estimation in eccentric pipe flow". *Intelligent Engineering Systems Through Artificial Neural Networks*. Vol. 18. St. Louis, MO, 9-12 November 2008, 163–170, DOI: 10.1115/1.802823.paper21.

2008

Özbayoğlu, A.M. and Özbayoğlu, G. "Hardgrove Grindability Index Estimation using Neural Networks". *XI. International Mineral Processing Symposium (IMPS 2008)*. Antalya, Turkey, 21-23 October 2008, pp. 621–626.

2007

Ozbayoglu, AM and Ozbayoglu, ME. "Using Neural Networks For Flow Pattern And Frictional Loss Estimation For Aerated Drilling Fluids". *Canadian International Petroleum Conference*. Calgary, Canada, 12-14 June 2007, 1–10, DOI: 10.2118/2007–211.

2007

Ozbayoglu, A.Murat. "Neural based Technical Analysis in Stock Market Forecasting". *Intelligent Engineering Systems Through Artificial Neural Networks*. St. Louis, MO, 11-14 November 2007, 261–266, DOI: 10.1115/1.802655.paper40.

2007

Ozbayoglu, M.Evren and **Ozbayoglu, A.Murat**. "Flow pattern and frictional-pressure-loss estimation using neural networks for UBD operations". *IADC/SPE Managed Pressure Drilling & Underbalanced Operations*. Galveston, TX, 28-29 March 2007, 1–9, DOI: 10.2118/108340-MS.

2006

Strauss, H., **Ozbayoglu, A.M.**, and Ozbayoglu, M.E. "Estimation of Foam Stability Properties Using Image Processing and Artificial Neural Networks". *5th North American Conference on Multiphase Technology*. Banff, Canada, 31 May - 2 June 2006, pp. 353–361.

1997

Ozbayoglu, AM and Dagli, CH. "Unsupervised hierarchical fingerprint matching". *IEEE International Conference on Neural Networks, 1997*. Vol. 3. Houston, TX, 9-12 June 1997, 1439–1442, DOI: 10.1109/ICNN.1997.614006.

1995

Enke, D., Lee, H.C., **Özbayoğlu, A.M.**, Thammano, A., and Dağlı, C.H. "SimNet: An application to speaker identification". *Intelligent Engineering Systems through Artificial Neural Networks*. Vol. 5. ASME Press, New York, 1995, pp. 69–76.

- 1995 Lee, HC, Dagli, CH, Ercal, F, and **Ozbayoglu, AM**. "SimNet: A Parallel Neuro-Fuzzy Paradigm for Data Clustering". *Ohio Aerospace Institute Neural Networks Symposium and Workshop (OAINN'95)*. Athens, OH, 23-24 August, 1995.
- 1994 Burkett, K, **Ozbayoglu, Murat A**, and Dagli, Cihan H. "Automated visual inspection system based on HAVNET architecture". *Proceedings of SPIE, Machine Vision Applications, Architectures, and Systems Integration III*. Vol. 2347. Boston, MA, 31 October-2 November 1994, 361-371, DOI: 10.1117/12.188757.
- 1994 **Ozbayoglu, MA**, Dagli, CH, and Fulkerson, B. "A hierarchial neural network implementation for forecasting". *IEEE World Congress on Computational Intelligence., 1994 IEEE International Conference on Neural Networks*. Vol. 5. Orlando, FL, 28 June-2 July 1994, 3184-3189, DOI: 10.1109/ICNN.1994.374744.
- 1993 Rosandich, Ryan G, **Ozbayoglu, Murat A**, Roddiger, Eric W, and Dagli, Cihan H. "Autonomous parts assembly: comparison of ART and Neocognitron". *Proceedings of SPIE, Applications of Neural Networks IV*. Vol. 1965. Orlando, FL, 12-16 April 1993, 480-490, DOI: 10.1117/12.152548.

Poster Presentations

- 2013 Adali, Selim F., Demirci, M. Fatih, **Özbayoğlu, A. Murat**, and Uçar, Mustafa. *Towards the Automated Autograph and the Recognition of Cuneiform Signs: Preliminary Results 2013. Law and (Dis)order in the Ancient Near East 59th Rencontre Assyriologique Internationale, pp. 1-2, 15-19 July 2013, Ghent University, Belgium.*

Publications in Turkish

- 2018 Ufuk, D.U., Açıkgoz, I.S., Teke, M., and **Ozbayoglu, A.M.** "Satellite Image Band Registration with Dynamic Time Warping and Discrete Wavelet Transform". In: *IEEE Conference on Signal Processing and Communications Applications (SIU 2018), 2-5 May, Cesme, Izmir, Turkey*, DOI: 10.1109/SIU.2018.8404249.
- 2016 Güneş, U., Elbir, Ö., and **Özbayoğlu, A.M.** "Yapay Sinir Ağları ile Kullanıcı Profilleme ve Konfor Seviyesi Tahmini". In: *International Artificial Intelligence and Data Processing Symposium (IDAP-16)*. İnönü Üniversitesi, Malatya, Türkiye, 413-418, 17-18 September 2016.
- 2013 Tuğçi, R., Çelen, B., and **Özbayoğlu, A.M.** "Comparison of Classifiers for Chatter Detection (in Turkish) - Pürüz Tespiti için Sınıflandırıcıların Karşılaştırılması". In: *IEEE Sinyal İşleme ve İletişim Uygulamaları Konferansı (SIU 2013)*. DOI: 10.1109/SIU.2013.6531300, Girne, TRNC, 24-26 April 2013.
- 2011 **Özbayoğlu, A.M** and Kök, İ.Ş. "Comparison of Indoor Localization Models based on Relative Signal Strength (in Turkish) - Sinyal Gücüne Bağlı Bina içi Konum Tespiti Modelleri Karşılaştırılması". In: *Fırat Üniversitesi Elektrik-Elektronik Bilgisayar Sempozyumu (FEEB 2011)*. Vol. 2. Elazığ, Turkey, 99-104, 5-7 October 2011.

2010

Bıyıköğlü, Atilla, Kasnakoğlü, Coşku, **Özbayoğlü, A. Murat**, Güngör, Afşin, Özgür, D.Ö, and Uysal, B. Zühtü. "Determination of Coal Gasification parameters for the production of Synthesis Gas (in Turkish) Sentez Gazı Üretimine Yönelik Kömür Gazlaştırma Parametrelerinin Tayini". In: *9th National Chemical Engineering Congress (UKMK-9)*. Gazi University, Ankara, Turkey, 22–25 June 2010.

2007

Özbayoğlü, A.M. "Implementations of Intelligent Agents in e-Health (in Turkish) - Akıllı araçların e-sağlıkta kullanımı: Hastalık teşhis modelleri". In: *2. E-Sağlık Çalıştayı*. Antalya, Turkey, 18–20 October 2007.

2007

Yazıcı, Ali, Erten, Murat, **Özbayoğlü, Murat**, and Tavlı, Bülent. "CS0: Introduction to Computer Engineering in TOBB ETU (in Turkish) - CS0: TOBB ETÜ'de Bilgisayar Mühendisliğine Giriş Dersi". In: *Akademik Bilişim 2007*. Dumlupınar University, Kütahya, Turkey, 31 January –2 February 2007.

2006

Özbayoğlü, A.M. "A Stock Market Forecasting Application using Neural Networks (in Turkish) - Yapay Sinir Ağları kullanarak hazırlanan bir Hisse senedi değer tahmini uygulaması". In: *TOK 06, Otomatik Kontrol Ulusal Toplantısı*. TOBB, ETU, Ankara, Turkey, 149–152, 6–8 November 2006.

2005

Özbayoğlü, A.M. "An Automated Fingerprint Classification and Identification System based on Directional Band Pass Filtering and Neural Networks (in Turkish) - Yönel Bant geçiren filtre ve yapay sinir ağları yardımıyla otomatik parmak izi sınıflandırma ve tanıma işlemi". In: *II. Polis Bilişim Sempozyumu*. Ankara, Turkey, 234–237, 14–15 April 2005.

1995

Özbayoğlü, A.M., Lee, H.C, Dağlı, C.H., Erçal, F., and Enke, D. "SimNet: An Artificial Neural Network for Classification Applications (in Turkish) - SimNet: Sınıflandırma uygulamaları için bir yapay sinir ağı". In: *XVIIth National Conference on Operational Research and Industrial Engineering Conference*. METU, Ankara, Turkey, 10–11 July 1995.

1995

Sönmezer, O, Özbayoğlü, G, Atalay, Ü, **Özbayoğlü, M.**, and Dağlı, C. "Grinding Stage Modeling by Using Artificial Neural Networks (in Turkish) - Öğütme Devresinin Yapay Sinir Ağları ile Modellenmesi". In: *Madencilikte Bilgisayar Uygulamaları Sempozyumu*. İzmir, Turkey, 211–217, 28–29 September 1995.

Abstracts / Extended Abstracts

2017

Karamüftüoğlü, A., Bozbey, A., and **Ozbayoğlü, A.M.** *Development of Superconductor Integrated Logic Circuit Design with Artificial Neural Network Structure*. International Conference on Condensed Matter and Materials Science, ICCMMS-2017, 11-15 October 2017, Adana, Turkey, pp:60.

2016

Özbayoğlü, A.Murat and Yavuz, M.H. *Algorithmic music composition with stochastic processes and genetic algorithms (in Turkish) - Rastlantısal Süreç ve Genetik Algoritmalar ile Algoritmik Kompozisyon*. International Conference on Mathematics and Mathematics Education (ICMME-2016), Fırat University, 12-14 May, Elazığ, Turkey.

2016 Nikghadam, S., Unver, H. O., **Özbayoğlu, A.M.**, and Kilic, S. E. *A Structurally Enhanced Fuzzy Inference System Partner Selection Technique In Forming Virtual Enterprise*. INFORMS 2016, Nashville, TN, USA, 13-16 November 2016.

2015 Şahin, Uğur and **Özbayoğlu, A.Murat**. *Trend-normalized RSI Indicator for Stock Trading Systems with Evolutionary Computation (in Turkish) - Finansal İşlemler için Evrimsel Hesaplamalar yoluyla Eğilimden Arındırılmış Bağlı Güç Endeksi Göstergesi*. MATDER, 14. Matematik Sempozyumu, 14-16 May, Niğde, Turkey.

2014 Sadigh, B Lotfi, Nikghadam, S., Unver, H. O., **Özbayoğlu, A.M.**, and Kilic, S. E. *Operasyonel Sanal Fabrika için Esnek Veri Modeli ve Veritabanının Geliştirilmesi (in Turkish)*. 5th Workshop on Advanced Technologies, İstanbul, October 2014.

2011 **Özbayoğlu, A.M.**, Osgouei, R.E., Özbayoğlu, M.E., and Yüksel, H.E. *Gaz sıvı karışimli sondaj akışlarının kesinti (kırıntı) taşıma özelliklerinin tayini (Determination of Cuttings Transport Properties of Aerated Drilling Fluids)*. IPETGAS 2011, Ankara-Turkey.

2009 Ozbayoglu M.E., **Ozbayoglu A.M.**, Osgouei R.E., and Yuksel E. *Determination of Cutting Concentration through Horizontal Annular Geometry by using Image Processing Techniques*. IPETGAS 09, Ankara - Turkey.

2009 Ozbayoglu M.E., **Ozbayoglu A.M.**, Osgouei R.E., and Yuksel E. *Determination of Liquid Hold up through Horizontal Annular Geometry by using Image Processing Techniques*. IPETGAS 09, Ankara-Turkey.

Thesis

1996

Ozbayoglu, Ahmet Murat. "Hierarchical fingerprint identification based on an unsupervised neural network model". PhD thesis. Engineering Management Dept, University of Missouri-Rolla.

Students Supervised

PhD Students

2014 **Mustafa Uçar**, *ongoing*.

2015 **Uğur Şahin**, *ongoing*.

2016 **Selim Sefa Sarıkan**, *ongoing*.

2017 **Muhammed Yılmaz**, *ongoing*.

2015 **Ömer Berat Sezer**, *Thesis*: Analysis and Optimization of Time Series Data with Deep Artificial Neural Networks: Financial Estimation Algorithms.

2018

2011 **Ayhan Akbaş**, *Thesis*: Joint Optimization of Transmission Power Level and Data Packet Size for Wireless Sensor Network Lifetime Maximization, co-supervised with Bulent Tavli.

2016

M.S. Students

2017 **Mustafa Sarı**, *ongoing*.

2016 **Derviş Utku Ufuk**, *ongoing*.

- 2016 **Uğur Güdelek**, *ongoing*.
- 2015 **Aras Can Önal**, *ongoing*.
- 2015 **Mehmet Saygın Seyfioglu**, *Thesis*: Deep Neural Network Initialization and Training Methodologies for Radar Micro Doppler Signature Classification, co-supervised with Sevgi Zubeyde Gurbuz, Melda Yuksel.
- 2013 **Gökhan Küçükayan**, *Thesis*: Analysis of the Traffic Flow and Accidents with Big Data Algorithms.
- 2014 **Ceyhun Karimov**, *Thesis*: Menu Optimization with Large-Scale Data.
- 2011 **Uğur Şahin**, *Thesis*: Parameter Optimization of Oscillator-based Technical Analysis Indicators Using Evolutionary Algorithms on Trend-normalized Financial Data.
- 2011 **Mustafa Uçar**, *Thesis*: Developing a Two Level Option Trading Strategy based on Option Pair Optimization of Spread Strategies with Evolutionary Algorithms.
- 2011 **Fatih Arıkan**, *Thesis*: A Multi-Agent System Model for Company Selection Process in an Ontology-based Virtual Enterprise.
- 2011 **İlknur Bayram**, *Thesis*: Three Level Covered Call Options Trading Model Optimized with Evolutionary Algorithms.
- 2010 **Hatice Tombul**, *Thesis*: Computational Intelligence Models for Particle Direction and Velocity Estimation in Multi-Phase Flows.
- 2008 **Recep Bozer**, *Thesis*: Estimation of the Expected Loss from a Forest Fire by Geographical and Meteorological Parameters using Artificial Intelligence Methods.
- 2008 **Umur Erkut**, *Thesis*: Selection of Technical Analysis Indicator for Optimizing Portfolio Performance with Genetic Algorithms.
- 2008 **H. Ertan Yüksel**, *Thesis*: Estimation of Flow Properties in Eccentric Annulus using Digital Image Processing and Artificial Intelligence Techniques.
- 2007 **Gökay Gökser Gül**, *Thesis*: Object Extraction from Real Time Video Image and an Automated Object Tracking Application.
- 2007 **İstemihan Şakir Kök**, *Thesis*: An Indoor Localization System.
- 2006 **Zeynep Aydın**, *Thesis*: Estimating Flow Control with Genetic Programming.
- 2006 **İsmet Bahadır**, *Thesis*: Stock Market Forecasting based on Bayesian Decision Theory and Artificial Neural Networks.
- 2005 **Veli Mert Altaş**, *Thesis*: Extracting the features of Drilling Foams with Image Processing Techniques and Data Analysis using Artificial Neural Networks.

Academic Activities

Program / Organizing Committee

- Complex Adaptive Systems Conference, USA
- Complexis International Conference on Complex Information Systems, Italy
- Ulusal Karmaşık Dinamik Sistemler ve Uygulamaları Çalıştayı

Journal Refereeing

- Expert Systems with Applications
- Gazi University Faculty of Engineering and Architecture Journal
- Geomatics, Natural Hazards and Risk

- IEEE Access
- IEEE Transactions on Industrial Informatics
- IEEE Transactions on Parallel and Distributed Systems
- Information Fusion
- International Journal of Electrical and Computer Engineering
- International Journal of General Systems
- International Journal of Intelligent Systems and Applications in Engineering
- International Journal of Mineral Processing
- International Journal of Multiphase Flow
- International Journal of Semantic Computing
- Journal of Petroleum Science and Engineering
- JKSU-Computer and Information Sciences
- Journal of Mobile Multimedia
- The Engineering Economist
- Politeknik
- Technical Gazette
- Transactions of the Institute of Measurement and Control
- Turkish Journal of Electrical Engineering and Computer Sciences

Conference Refereeing

- Artificial Neural Networks in Engineering
- Complex Adaptive Systems
- Complexis (International Conference on Complex Information Systems)
- International Conference on Intelligent Control Systems and Signal Processing
- IEEE International Conference on Big Data
- IEEE SİU Sinyal İşleme Uygulamaları
- ELECO - Uluslararası Elektrik-Elektronik Mühendisliği Konferansı
- Turkish Computing Society (TBD) Workshop
- UMTİK - Uluslararası Makina Tasarım ve İmalat Konferansı

Service Activities

Scientific Committees

- The Scientific and Technological Council of Turkey, TUBITAK R & D (ARDEB) Project Evaluation Committee
- The Scientific and Technological Council of Turkey, TUBITAK Industrial R & D Committee for Small Enterprises
- Ministry of Science, Industry and Technology, TEKNOGİRİŞİM Startup Business Grant Selection Committee
- Ministry of Science, Industry and Technology, SANTEZ Industrial R & D Committee

Industrial Project Refereeing / Monitoring

- The Scientific and Technological Council of Turkey, TUBITAK TEYDEB Industrial R & D Project Refereeing

- The Scientific and Technological Council of Turkey, TUBITAK TEYDEB Industrial R & D Project Monitoring
- The Scientific and Technological Council of Turkey, TUBITAK Industrial R & D Center Monitoring
- Turkish Computing Society (TBD) Artificial Intelligence Applications Committee Leader

University Activities

2009
2013

Department Vice Chairman, *TOBB University of Economics and Technology*, Department of Computer Engineering.

2010

Institutional Graduate Erasmus Coordinator, *TOBB University of Economics and Technology*.

2010
2012

Faculty Management Committee Member, *TOBB University of Economics and Technology*, Faculty of Engineering.

2010
2012

Web Committee Member, *TOBB University of Economics and Technology*.

2011
2012

ABET Committee Member, *TOBB University of Economics and Technology*.

2009
2011

Undergraduate Program Evaluation Committee Member, *TOBB University of Economics and Technology*.

2009
2010

Undergraduate Registration Committee Member, *TOBB University of Economics and Technology*.

2006

Departmental Erasmus Coordinator, *TOBB University of Economics and Technology*, Department of Computer Engineering.

Memberships to Professional Societies

- ACM (Association for Computing Machinery) Member
- IEEE (Institute of Electrical and Electronics Engineers) Member
- IEEE Computational Intelligence Society Member

Industrial Experience

2001
2005

Senior Programmer/Analyst, MEMC Electronics Inc., St.Louis MO, USA.

Worked as a member of the Data Automation and Manufacturing MIS Group. Responsibilities include project leading, software development, maintaining and reporting for the plant-wide data collection and automation systems.

Highlights:

- Investigated hardware and software platforms to determine approved devices for special client needs and provided the appropriate requirements;
- Developed GUIs and APIs for wafer manufacturing and test equipments for engineers and technicians;
- Developed three-tier systems (Windows-Unix-Oracle) for client/server applications for data retrieval, querying and reporting tools for plant-wide usage;
- Developed low-level services for wafer manufacturing equipments and processes;
- Provided 24/7 technical assistance for the developed data automation systems;
- Implemented Software Development Life Cycle (SDLC) model in every stage of the software development process during the automation projects;

Noteworthy Projects and Tasks:

- Team Leader in Automated Label Printing System for Wafer Cassette Labels Project (VB, ActiveX, SQL, SAP)
- Team leader in Lasermark Verification Application Project for wafer mix prevention (CellWorks, SQL);
- Team leader in ADE Wafer Thickness and Resistivity Automated Data Collection and GUI development (CellWorks, SQL, VB);
- Tencor and CR80 Wafer Particle Count Data Collection System (Cellworks, SQL);
- Final Shipping Automated Shipment Verification Application (C);
- Automated SPC System and GUI Development in Etching, Lapping and Polishing Departments (VB, Cellworks, SQL);

2001

Software/Database Engineer, Vizyonsoft, contracted to ARIA Mobile Serv., Istanbul, Turkey.

Worked as a member of the Infrastructure, Software and Database Technical Support team for the newly-formed third mobile telecom service provider in Turkey for a 4 month project

1997
2001

Software Engineer/Consultant, Beyond Inc. contracted to MEMC Electronics Inc., St.Louis MO, USA.

Worked as a consultant/project manager in MEMC QRDAP (Quality Renewal Data Automation Project) and developed data collection / process control applications

1996
1997

Product Development Engineer, Beyond Inc., St.Louis MO, USA.

Worked on developing specific hardware/software tools for enhancing wafer manufacturing data automation systems and also implemented various in-house software applications.

Highlights:

- Implemented the design and development (hardware and software) of Silicount (Wafer Counter) which is an automated wafer counting device using opto-electronic circuitry to provide the capability of touchless accurate wafer count in a cassette which is crucial in Silicon Wafer Manufacturing Industry. Several of them are being used on production floor in MEMC Electronics.
- Developed the software and database for Beyond Inc. Inventory Control and GUI;
- Developed an expert system for parts and components identification for wafer polishing equipments;

1995
1996

Industrial Engineer, Marathon Electric Co., West Plains, MO, USA.

Worked as a co-op industrial engineer in electrical motor production facility. Responsibilities include the development of the production standards for various departments, MTM studies, process design and maintenance, factory layout, scheduling and routings

1991

Technical Department Manager, Senkron Apple Center, Ankara, Turkey.

Responsibilities include organizing the technical service and the distribution of Apple Computers to several private and government offices in Ankara. Management of technical support, presentations, developing in-house software, building systems and networks, installations and troubleshooting for Apple computer systems were also included in the job duties

1990

Intern Electrical Engineer, Vega Electromech Systems Inc., Ankara, Turkey.

Worked on technical support and installation of biomedical systems, such as sterilizers, ECG systems, surgical instruments, etc.

Electrical Engineering Summer Practice, *Gold Fields of South Africa*, Johannesburg, RSA.
Worked in the project group on planning and developing the power distribution of Kloof Gold Mine, one of the largest in the world

Computer Skills

Systems Windows, UNIX, Linux, Apple OS

Program Java, Python, C, C#, C++, Pascal, Fortran, Visual Basic, Prolog

Web HTML/XHTML, Javascript, PHP, ASP, FrontPage, Dreamweaver

Office Word, Excel, Powerpoint, OpenOffice

Database MS Access, MSSQL, MySQL, Post- GreSQL, SQLite, PL-SQL, Oracle

Scientific Matlab, Mathcad

Analysis WEKA, R, Tanagra, Neurosolutions

Imaging Coreldraw, Photoshop, Pagemaker, XView, GIMP

Automation Cellworks, Factoryworks

Project M. MS Project, Git

Source Ctr SVN, Github

Other Bibtex, L^AT_EX, T_EX

Languages

Turkish **Native**

Mother Tongue

English **Fluent**

Daily practice, All work performed in English

Polish **Beginner**

Some practice, One semester beginning level class

Certificates and Achievements

- Sun Java Programmer Certificate
- Top %0.1 in National Centralized University Entrance Examination in Turkey
- 3rd place in TUBITAK Mathematics Competition for Middle School Students in Central Turkey Region
- 2nd place in TUBITAK Chemistry Competition for High School Students in Central Turkey Region
- Licensed DJ in 89.7 FM KMNR-Rolla, MO, USA

References

- Available upon request