

## Professor İnci BATMAZ

Middle East Technical University  
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*(Last updated: September, 2021)*

### EDUCATION

#### *Doctor of Philosophy (PhD)*

Ege University, Department of Computer Engineering, İzmir, Turkey, 1993.

**Doctoral Dissertation:** Research on Intelligent Software Development for Design and Analysis of Factorial Experiments (Supervisor: *Prof. Dr. William F. Eddy*)

#### *Fulbright Doctoral Research Scholar*

Carnegie-Mellon University (CMU), Department of Statistics, Pittsburgh, PA, USA, 1988-1991.

#### *Master of Science (MSc)*

Ege University, Department of Computer Engineering, İzmir, Turkey, 1986.

**Master Thesis:** A Comparative Study of the Parameter Estimation Methods for the Logistic Distribution.

#### *Bachelor of Science (BS)*

Middle East Technical University (METU), Department of Statistics (and Operational Research), Ankara, Turkey, 1984.

**Minor:** Computer Science

### EXPERIENCE

#### *Administrative*

- **Coordinator**, Institutional Development and Planning Office, Rectorate, METU, March 1, 2019-October, 2020.
- **Elected Member of the Board**, Graduate School of Natural and Applied Sciences, METU, January 1, 2014-2016.
- **Member of the Board**, Institute of Applied Mathematics (IAM), METU, 2013-2016.
- **Member of the Board**, Arts and Science Faculty, METU, 2012-2015.
- **Chair**, Department of Statistics, METU, Ankara, Turkey, December 2012-2015.
- **Assistant to Chair**, Department of Statistics, METU, Ankara, Turkey, August 2012-December 2012.
- **Graduate Program Coordinator**, Department of Statistics, METU, Ankara, Turkey, 2008-2012.

- **Assistant to Chair**, Department of Statistics, METU, Ankara, Turkey, 2004-2007.
- **Chair**, Statistical Information Systems Section, Department of Statistics, Ege University, İzmir, Turkey, 1995-2002.
- **Assistant to Chair**, Department of Statistics, Ege University, İzmir, Turkey, 1994-1998.

#### *Faculty Member*

- **Professor**, Department of Statistics, METU, Ankara, Turkey, December 18, 2012-ongoing.
- **Associate Professor (promotion)**, Department of Statistics, METU, Ankara, Turkey, December 2010–2012.
- **Associate Professor (title)**, Higher Education Council (YÖK), Turkey, November 2004.
- **Affiliated Faculty**, Financial Mathematics Program, Institute of Applied Mathematics (IAM), METU, Ankara, Turkey, 2003-ongoing.
- **Assistant Professor**, Department of Statistics, METU, Ankara, Turkey, 2002–2010.
- **Assistant Professor**, Department of Statistics, Ege University, İzmir, Turkey, 1994-2002.

#### *Visiting*

- **Professor, Academic Researcher**, Imperial College, Department of Mathematics, Statistics Section, London, UK, 2016-2018.
- **Lecturer**, Dortmund Technical University, Statistics Faculty, Germany, July 26-30, 2010.
- **Researcher**, Tilburg University, Department of Information Systems (BIK)/Center for Economic Research (CentER), School of Economics and Business Administration (FEW), Tilburg, The Netherlands, Summer, 2002.

#### *Research & Teaching Assistant*

- **RA & TA**, Department of Statistics, Ege University, İzmir, Turkey, 1991-1994.
- **RA**, Department of History, CMU, Pittsburgh, PA, USA, January-September 1991.
- **RA**, Marketing Department, Graduate School of Industrial Administration, CMU, Pittsburgh, PA, USA, 1990.
- **TA**, Marketing Department, Graduate School of Industrial Administration, CMU, Pittsburgh, PA, USA, Fall, 1989.
- **TA**, Computer Science Department, CMU, Pittsburgh, PA, USA, summer, 1989.
- **RA**, Department of Statistics, CMU, Pittsburgh, PA, USA, summer, 1989.
- **RA & TA**, Department of Statistics, Ege University, İzmir, Turkey, 1985-1988.

#### *Curriculum Development*

- Bachelor of Science, *Statistics and Data Science*, Department of Statistics, METU, Ankara, Turkey, 2021.
- Master of Science, *Statistics and Data Science*, Department of Statistics, METU, Ankara, Turkey, 2021.
- Doctor of Philosophy, *Statistics and Data Science*, Department of Statistics, METU, Ankara, Turkey, 2021.
- Bachelor of Science, *Department of Statistics*, METU, Ankara, Turkey, 2015.
- *Master of Science, without Thesis Statistics Option*, Department of Statistics, METU, Ankara, Turkey, 2014.
- *Master of Science, Interdisciplinary Statistics Option*, Department of Statistics, METU, Ankara, Turkey, 2008.

- Bachelor of Science, *Department of Statistics*, METU, Ankara, Turkey, 2004.
- Minor, *Computer Applied Statistics*, Department of Statistics, Ege University, İzmir, Turkey, 1995

### *Organization*

#### *Organizer*

- Graduate Summer School on Recent Advances in Statistics, METU, Ankara, August, 2007.
- Statistics Workshop Organized in Honor of Prof. Dr. Öztaş Ayhan's Institutive Retirement, Ankara, December, 2012.

#### *Organizing Committee Member*

- ENBIS 13: 13th Conference of the European Network for Business and Industrial Statistics, Ankara, Turkey, September 18-20, 2013.
- 7. Statistics Days Symposium (Language: Turkish), Ankara, Turkey, June 28-30, 2010.
- Workshop on Recent Developments in Financial Mathematics and Stochastic Calculus, IAM, METU, Ankara, Turkey, April 25-26, 2008.
- ICOSCO-1: First International Conference on Computational Statistics, Computer Engineering Department, Ege University, Çeşme, İzmir, Turkey, April, 1986.

#### *Scientific Program Committee Member*

- USMOS 2019: 8th National Defense Applications, Modelling and Simulation Conference, METU, Ankara, Turkey, November 19-21.
- USMOS 2017: 7th National Defense Applications, Modelling and Simulation Conference, METU, Ankara, Turkey, November 21-23.
- 11th International Statistics Days Conference, Bodrum, Turkey, October 3-7, 2018.
- IC-SMHD: International Conference on Information Complexity and Statistical Modeling in High Dimensions with Applications, Cappadocia, Turkey, May 18-21, 2016.
- NEDETAS: New Developments in Theory and Applications of Statistics, An International Conference in Memory Professor Moti Lal Tiku, Ankara, Turkey, May 2-4, 2011.

#### *Advisory Board Member*

- AİK: First Conference of Researchers and Statisticians (Language: Turkish), Hacettepe University, Ankara, Turkey, September 12-13, 2013.
- GİS: First Conference of Young Statisticians (Language: Turkish), Hacettepe University, Ankara, Turkey, September 10-11, 2013.

#### *Stream Organizer*

- 30th European Conference on Operational Research, Dublin, Ireland, July 23-26, 2019.
- 28th European Conference on Operational Research, Poland, Poznan, July 3-6, 2016.
- YAEM: 35th National Congress of Operations Research and Industrial Engineering (Language: Turkish), Ankara, Turkey, September 9-11, 2015.

- 27th European Conference on Operational Research, Glasgow, UK, July 12-15, 2015.
- IFORS 2014 Triennial Conference, Barcelona, Spain, July 13-18, 2014.
- 26th European Conference on Operational Research-INFORMS, Rome, Italy, July 1-4, 2013.
- 25th European Conference on Operational Research, Vilnius, Lithuania, July 8 - 11, 2012.
- 24rd European Conference on Operational Research, Lisbon, Portugal, July 11-14, 2010.
- 24rd Mini EURO Conference on Continuous Optimization and Information-Based Technologies in the Financial Sector, İzmir, Turkey, June 23-26, 2010.
- 23rd European Conference on Operational Research, Bonn, Germany, July 5 - 8, 2009.

#### *Session Organizer*

- IC-SMHD-2016 - International Conference on Information Complexity and Statistical Modelling in High Dimensions with Applications, Nevşehir, Cappadocia, Turkey, May 18-21, 2016.

#### *Consultant*

- **ASELSAN**, Defense Electronics Company of Turkish Armed Forces Foundation, Ankara, Turkey. May-September, 2020.
- **METU-Technopolis**, SFM Software Technologies Incorporated Company. Ankara, August 2019-February 2020.
- **TÜBİTAK-SAGE**, Scientific and Technological Research Council of Turkey-Defense Industry, Institute of Research and Development. Ankara, Turkey. 2014- January 2017.
- **Ziraat Bank**, Ankara, Turkey. August-October, 2012.
- **TRT**, Turkish Radio Television, Advisory Board Member, Ankara, Turkey, 2013.
- **ASELSAN**, Defense Electronics Company of Turkish Armed Forces Foundation, Ankara, Turkey. June, 2011.
- **ATO**, Ankara Chamber of Medical Doctors, Ankara, Turkey, 2010.
- **ÖZEM** Education Foundations, Ankara, Turkey, 2006.
- **ÖSYM**, Center of Measuring, Selection and Placement, Ankara, Turkey, 2005.
- **METU-Technopolis**, S.P.A.C., 2004-2005.

### **SCHOLARSHIPS and AWARDS**

#### *Scholarship*

- **TÜBİTAK**, International Post-Doctoral Research Fellowship Programme, Imperial College, Department of Mathematics, Statistics Section, London, UK, 2017 - 2018.
- **TÜBİTAK**, Fellowship for Visiting Scientists Program, 2007.
- **TÜBİTAK**, Graduate Summer School Funding Program, 2007.
- **TÜBİTAK**, National Scientific Activities Funding Program, 2007.
- **The Netherlands National Research Foundation (NOW) Research Grand**, Department of Information Systems (BIK)/Center for Economic Research (CentER), School of Economics and Business Administration (FEW), Tilburg University, Tilburg, The Netherlands, Summer, 2002.
- TA Scholarship, **Marketing Department, Graduate School of Industrial Administration, CMU**, Pittsburgh, PA, USA, Fall, 1989.
- RA Scholarship, **CMU**,
  - **Department of History** (January-September 1991);

- *Marketing Department, Graduate School of Industrial Administration* (1990);
- *Department of Statistics* (Summer, 1989).
- *Fulbright Doctoral Research Scholarship*, CMU, Department of Statistics, Pittsburgh, PA, USA, 1988-1991.

#### Awards

- *Best MSc Thesis Award Winner*, METU, Özmen, A., Principal Advisor: Prof. Dr. Gerhard W. Weber, **Co-advisor: Prof. Dr. İnci Batmaz**, 2012.
- *Visiting Lecturer*, ERASMUS Program, Dortmund Technical University, Statistics Faculty, Germany, July 26-30, 2010.
- *Best MSc Thesis Award Winner*, METU, Yerlikaya, F., Principal Advisor: Prof. Dr. Gerhard W. Weber, **Co-advisor: Assoc. Prof. Dr. İnci Batmaz**, 2009.
- *Publication Award*, METU, 2007, 2010, 2011, 2013, 2014, 2015, 2016.
- *Faculty Performance Award*, METU, 2003-2005; 2005-2007; 2007-2009; 2009-2011; 2011-2013; 2016-2017.
- *Publication Support Award*, TÜBİTAK, 2000, 2002, 2003, 2007, 2015.
- *Research Project Reconciliation and Scholarship Reward*, TÜBİTAK, Project Number: YDABÇAĞ-100Y059, 2001.

### PUBLISHED PAPERS

2021

Interviewer allocation through interview–reinterview nested design for response error estimation in sample surveys. Mahmut Fahmi, F., Ayhan, H.Ö., and İ. Batmaz. *Statistics in Transition New Series: An International Journal of the Polish Statistical Association*. January, 2021. June 2021 (2)2, pp. 67–93, DOI 10.21307/stattrans-2021-017.

2020

Learning to rank by using multivariate adaptive regression splines and conic multivariate adaptive regression splines. Altınok, G., Karagöz, P., and Batmaz, İ. *Computational Intelligence*. 2021, 37, 371-408. PubDate: 2020-10-22T05:51:16-07:00. DOI: 10.1111/coin.12413.

2019

Association of Serum 25-Hydroxyvitamin D Concentrations with Sleep Phenotypes in a German Community Sample. Dogan, E., Willenberg, A., **Batmaz, İ.**, Enzenbach, C., Wirkner, K., Kohls, E., Mergl, R., Thiery J., Kratzsch, J., Hegerl, U., and C. Sander. *PloS one*. 2019, 14(7), e0219318.

2017

A Data Mining Application to Deposit Pricing: Main Determinants and Prediction Models. **Batmaz, İ.**, Danişoğlu, S., Kartal-Koç, E., and C. Yazıcı. *Applied Soft Computing (for Business Analytics)*. 2017, 60, 808-819.

2016

Has the climate been changing in Turkey? Regional climate change signals based on a comparative statistical analysis of two consecutive time periods, 1950-1980 and 1981-2010. Türkeş, M., Yozgatlıgil, **Batmaz, İ.**, C., İyigün, C., Kartal-Koç, E., Fahmi, F. and Aslan, S. *Climate Research*. 2016, 70, 77-93.

Dynamic Simulation Metamodeling Using MARS: A case of Radar. Bozağaç, D., **Batmaz, İ.**, and H. Oğuztüzün. *Mathematics and Computers in Simulation*. 2016, 124, 69-86.

- 2015  
A Computational Approach to Nonparametric Regression: Bootstrapping CMARS Method. Yazıcı, C., Yerlikaya-Özkurt, F. and **İ. Batmaz**. *Machine Learning*. 101(1-2), 211-230.
- 2014  
Efficient Adaptive Regression Spline Algorithms Based on Mapping Approach with a Case Study on Finance. Kartal-Koç, E., İyigün, C., **Batmaz, İ.** and G.-W. Weber. *Journal of Global Optimization*. 2014, 60, 103-120.
- Precipitation Modeling by Polyhedral RCMARS and Comparison with MARS and CMARS. Özmen, A., **Batmaz, İ.**, and G.-W. Weber. *Environmental Modeling and Assessment*. 2014, 19, 425-435.
- 2013  
Clustering Current Climate Regions of Turkey by Using a Multivariate Statistical Method. İyigün, C., Türkeş, M., **Batmaz, İ.**, Yozgatlıgil, C. Purutçuoğlu-Gazi, V., Kartal-Koç, E., and M.Z., Öztürk. *Theoretical and Applied Climatology*. 2013, 114 (1), 95-106.
- The Effect of Inspection Error on Quality and Producer Losses: The Case of Nominal-the Best Type Quality Characteristic and Rework. Köksal, G., Taşeli, A., Dolgun, L.E., and **İ. Batmaz**. *European Journal of Industrial Engineering (EJIE)*. 2013, 7 (4), 497-528.
- Determining Treatability of Primary Teeth with Pulpal Exposure. Doğan, S., Durutürk, L., Orhan, A.I., and **İ. Batmaz**. *Journal of Clinical Pediatric Dentistry*. 2013, 37 (4), 345-350
- 2012  
Comparison of Missing Value Imputation Methods for Turkish Meteorological Time Series Data. Aslan, S., Yozgatlıgil, C., İyigün, C., and **İ. Batmaz**. *Theoretical and Applied Climatology*. 2012, 112, 143–167.
- A New Contribution to Nonparametric Regression with Multivariate Adaptive Regression Splines Supported by Continuous Optimization. Weber, G.-W., **Batmaz, İ.**, Köksal, G., Taylan, P., and F. Yerlikaya-Özkurt. *Inverse Problems in Science and Engineering*. 2012, 20 (3), 371–400.
- 2011  
A Review of Data Mining Applications for Quality Improvement in Manufacturing Industry. Köksal, G., **Batmaz, İ.**, and M.C. Testik. *Expert Systems with Applications*. 2011, 38 (10), 13448-13467.
- Estimating the Neutral Real Interest Rate in an Emerging Market Economy. Ögünç, F., and **İ. Batmaz**. *Applied Economics*. 2011, 43 (6), 683 – 693.
- RCMARS: Robustification of CMARS with Different Scenarios under Polyhedral Uncertainty Set. Özmen, A., Weber, G.-W., **Batmaz, İ.**, and Erik Kropat. *Communications in Nonlinear Science and Numerical Simulation (CNSNS): Nonlinear, Fractional and Complex*. 2011, 16, 4780-4787.
- Performance Comparison of Missing Data Imputation Methods in Meteorological Time Series Using Correlation Dimension Analysis (in Turkish). Aslan, S., Yozgatlıgil, C., İyigün, C., **Batmaz, İ.**, and H. Tatlı. *Journal of Statistical Research*. 2011, 8 (2), 55-67.

Comparison of the Fluoride Recharge Profiles of Various Restorative Materials by Linear Regression Modeling. Can-Karabulut, D., **Batmaz, İ.**, Taştekin, M., and H. Solak. *Clinical Dentistry and Research*. 2011, 35(3), 17-27.

Identifying Climate Regions of Turkey Using Hierarchical Clustering Method (in Turkish). Fahmi, F., Kartal-Koç, E., İyigün, C., Türkeş, M., Yozgatlıgil, C., Purutçuoğlu, V., **Batmaz, İ.**, and G. Köksal. *Journal of Statistical Research*. 2011, 8 (1), 13-25.

2010

Classification Models Based on Tanaka's Fuzzy Linear Regression Approach: The Case of Customer Satisfaction Modeling. Şikkeli, G., Köksal, G., **Batmaz, İ.**, and Ö. Türker-Bayrak. *Journal of Intelligent and Fuzzy Systems: Applications in Engineering and Technology*. 2010, 21 (5), 341-351.

Use of Data Mining Techniques for Improving Quality in Manufacturing (in Turkish). Köksal, G., **Batmaz, İ.**, Testik, M.C., and F. Güntürkün. *Verimlilik Dergisi*. 2010, 2, 47-65.

2005-2009

Adhesion to Primary and Permanent Dentin and a Simple Model Approach. Can-Karabulut, D.C., Öz, F.T., Karabulut, B., **Batmaz, İ.**, and Ö. İlk. *European Journal of Dentistry*. 2009, 3, 32-41.

Linear Regression Modeling to Compare Fluoride Release Profiles of Various Restorative Materials. Can-Karabulut, D., **Batmaz, İ.**, Solak, H., and M. Taştekin. *Dental Materials*. 2007, 23, 1057-1065.

Modeling and Analysis of Qualitative and Quantitative Variables Jointly (in Turkish). **Batmaz, İ.** *Altı Sigma Forum*. 2005, 2, 55-58.

2000-2004

Validations of Assumptions and Remedial Measures in Regression Analysis (in Turkish). **Batmaz, İ.** *Altı Sigma Forum*. 2004, 1, 64-66.

Small Response Surface Designs for Metamodel Estimation. **Batmaz, İ.**, and S. Tunalı. *European Journal of Operational Research*. 2003, 145, 455-470.

A Metamodeling Methodology Involving both Quantitative and Qualitative Variables. Tunalı, S., and **İ. Batmaz**. *European Journal of Operational Research*. 2003, 150, 437-450.

An Automatic User Input Analyzer for Simulation (in Turkish). Tanıl, H., and **İ. Batmaz**. *Journal of Statistical Research*. 2003, 2 (3), 31-47.

Second-Order Experimental Designs for Simulation Metamodeling. **Batmaz, İ.**, and S. Tunalı. *Transactions of the Society for Computer Simulation*. 2002, 78, 699-715.

Dealing with the Least Squares Regression Assumptions in Simulation Metamodeling. Tunalı, S., and **İ. Batmaz**. *Computers and Industrial Engineering, an International Journal*. 2000, 38, 307-320.

### BOOKS and CHAPTERS in BOOKS

2021

- Data Mining Approaches to Meteorological Data: A Review of NINLIL Research Group Studies. **İ. Batmaz**. In: *Data Mining Applications in OR*. V. Purutçuoğlu and

G. W. Weber (Eds.). CRC Press| Taylor & Francis Group. June 2021 (accepted for publication).

2014-2018

- A Categorical Principal Component Regression on Computer Assisted Instruction in Probability Domain. Kapucu, T., İlk, Ö., and İ. **Batmaz**. *Trend and Perspectives in Linear Statistical Inference (Proceedings of LINSTAT'16)*. Springer, 2018.
- A Review and New Contribution on Conic Multivariate Regression Splines (CMARS): A Powerful Tool for Predictive Data Mining. Yerlikaya-Özkurt, F., **Batmaz, İ.**, and G.-W. Weber. In: *Modeling, Dynamics, Optimization and Bioeconomics* I. D. Zilberman and A. A. Pinto (Eds.). Switzerland: Springer, 2014, 37, 695-722.

2011-2012

- Robust Regression Metamodeling of Complex Systems: The Case of Solid Rocket Motor Performance Metamodeling. Kartal-Koç, E., **Batmaz, İ.**, and G.-W. Weber. In: *Advances in Intelligent Modelling and Simulation: Simulation Tools and Applications*. A. Byrski, Z. Oplatkova, M. Carvalho, M. Kisiel-Dorohinicki, Series Editor: Prof. J. Kacprzyk (Eds.). Volume 416/2012. Berlin, Heidelberg: Springer Verlag, 2012, 221-251.
- Determining the Climate Zones of Turkey by Center-Based Clustering Methods. Fahmi, F., Kartal, E., İyigün, C., Türkeş, M., Yozgatlıgil, C., Puruçuoğlu, V., **Batmaz, İ.**, and G. Köksal. In: *Nonlinear and Complex Dynamics: Applications in Physical, Biological and Financial Systems*. J.A. Tenreiro Machado, Baleanu, D. and A.C.J. Luo (Eds.). New York: Springer, 2011, 171-178.
- Overview of Knowledge Discovery in Databases Process and Data Mining for Surveillance Technologies and EWS. **Batmaz, İ.**, and G. Köksal. In: *Surveillance Technologies and Early Warning Systems: Data Mining Applications for Risk Detection*. A.S. Koyuncugil and N. Özgülbaş (Eds.). Hershey, PA: IGI Global Publisher (Idea Group Publisher), 2011, 1-30.

2005-2009

- Recent Advances in Statistics. (Eds.) Ayhan, H.Ö., and İ. **Batmaz**. Ankara: Turkish Statistics Institute (TÜİK) Press, 2007. ISBN: 978-975-01606-0-8.
- Introduction. **Batmaz, İ.**, and H.Ö. Ayhan, In: *Recent Advances in Statistics*. H.Ö. Ayhan, and İ. **Batmaz** (Eds.). Ankara: Turkish Statistics Institute (TÜİK) Press, 2007, 1-3.
- Data Mining Applications on Manufacturing Data: A Casting Quality Improvement Case. **Batmaz, İ.** In *Recent Advances in Statistics*. H.Ö. Ayhan and İ. **Batmaz** (Eds.). Ankara: Turkish Statistics Institute (TÜİK) Press, 2007, 197-206.

Before 2000

- A Comparative Study of Parameter Estimation Methods for the Logistic Distribution. **Batmaz, İ.** In: *The Frontiers of Statistical Computation, Simulation and Modeling*. P. R. Nelson (Ed.). Ohio, Columbus: American Sciences Press, Inc. (Gale Group Inc.), 1991, 289-298.

## WORK IN PROGRESS

Under Review

StreamMARS: A Streaming Multivariate Adaptive Regression Splines Algorithm. **Batmaz, İ.**, and N. Adams. Submitted to *Computational Statistics*.

A Computational Approach to Detect Inhomogeneities in Time Series Data. Yazıcı, C., Yozgatlıgil, C., and İ. **Batmaz**. Submitted to *Computational Statistics*.



CMARS: A Predictive Data Mining Package in R. Yerlikaya-Özkurt, F., Yazıcı, C. and İ. Batmaz. Submitted to *Journal of Statistical Computation and Simulation*.

A Comparative Study on Computational In-painting Methods. **Batmaz, İ.**, Ulusoy, İ. and C. Kurt. *Journal of Mathematical Imaging and Vision*.

A Computer Assisted Instructional Material in Probability Domain. Kapucu, T., **Batmaz, İ.**, and Ö. İlk. Submitted to *Education and Information Technology*.

Statistical modeling of fluoride release profiles of various dental restorative materials in three buffer solutions. Oruç, A. B., and **İ. Batmaz**. Submitted to *Advanced Functional Materials*.

#### *In Preparation*

Response Variance Estimation in Personal Interview Surveys with Several Interviewer Allocation Schemes. **Batmaz, İ.**, Mahmut-Fahmi, F., and H. Ö. Ayhan.

Proxy Model Replacement for an Atomic Model in DEVS-based Simulation. Bozağaç, D., Oğuztüzün, H. and **İ. Batmaz**.

Ensemble Clustering of Turkish Meteorological Data. Yetere-Kurşun, A., **Batmaz, İ.** and C. İyigün.

#### **PAPERS PUBLISHED in PROCEEDINGS**

2017

A Comparative Study on Learning to Rank with Computational Methods. **Batmaz, İ.**, Karagöz, P. and G. Serdar. *2017 IEEE International Conference on Big Data (IEEE Big Data 2017)*. Boston, USA. Memory Stick.

2015

Response Variance Estimation in Personal Interview Surveys with Several Interviewer Allocation Schemes. **Batmaz, İ.** and F. Mahmut Fahmi. *Proceedings of 60th World Statistics Congress-ISI 2015*. Rio de Janeiro, Brazil, 26-31 July, 2015, 0-5.

A Bootstrap Application on the Standard Normal Homogeneity Test (SNHT) when there is not Highly Correlated Reference Series. Yazıcı, C., **Batmaz, İ.** and C. Yozgatlıgil. *Proceedings of 60th World Statistics Congress-ISI 2015*. Rio de Janeiro, Brazil, 26-31 July, 2015, 3597-3602.

2014

Consensus Clustering of Time Series Data, Yetere-Kurşun, A. İyigün, C., and **İ. Batmaz**. *Proceedings of COMPSTAT 2014: 21st International Conference on Computational Statistics and 5th IASC World Conference*. Geneva, Switzerland, August 19-22, 2014. 665-672.

2012

Seasonal Variation of Turkey: A Consensus Clustering Approach. Yetere-Kurşun, A., İyigün, C., Yozgatlıgil, C., and **İ. Batmaz**. *FLINS 2012: 10<sup>th</sup> International FLINS Conference on Uncertainty Modeling in Knowledge Engineering and Decision Making*. İstanbul Technical University, Maçka Campus, İstanbul, Turkey. 26-29 August, 2012. CDROM.

2011

Studying the Effect of Climate Change on Turkey by Clustering Methods (in Turkish). Fahmi, F., Kartal, E., İyigün, C., Yozgatlıgil, C., Çınar, İ., Aslan, S., Öztürk, M.Z., Türkeş, M., and **İ. Batmaz**. *Geography Conference with International Participation*. İstanbul, Turkey. 7-10 September, 2011. CDROM.

Validity of Homogeneity Tests for Meteorological Time Series Data: A Simulation Study. Yozgatlıgil, C., Purutçuoğlu, V., Yazıcı, C., and **İ. Batmaz**. *58th ISI World Statistics Congress*. Dublin, Ireland. August, 2011. Memory Stick.  
(<http://isi2011.congressplanner.eu/>)

2010

RCMARS – Robust CMARS Method and a Numerical Application (in Turkish). Özmen, A., Weber, G.-W., and **İ. Batmaz**. *7. Statistics Days Symposium (İGS'7 2011) Bildiriler Tam Metinler Kitabı*. Ankara, Turkey. June 28-30, 2011, 102-110.

A Comprehensive Comparison of Data Mining Methods used for Classification and Prediction in Manufacturing (in Turkish). **Batmaz, İ.**, Köksal, G., Karasakal, E., and Z. Anaklı. *10. Symposium of Production Research*. Girne, Cyprus. September 16-18, 2010, 167-173.

The New Robust CMARS (RCMARS) Method. Özmen, A., Weber, G.-W., and **İ. Batmaz**. *Proceedings of 24th MEC-EurOPT 2010 - Continuous Optimization and Information-Based Technologies in the Financial Sector*. İzmir, Turkey. June 23-26, 2010, 362-368.

Evaluating the CMARS Performance for Modeling Nonlinearities. **Batmaz, İ.**, Yerlikaya-Özkurt, F., Kartal-Koç, E., Köksal, G., and Weber, G.-W. *Global Conference on Power Control and Optimization PCO 2010*. Queensland, Australia. February 2-4, 2010. ISBN: 978-983-44483-1-8. CDROM. Also in *AIP Conference Proceedings*, Volume 1239, Power Control and Optimization: Proceedings of the 3rd Global Conference on Power Control and Optimization, Gold Coast (Australia), 2-4 February 2010, ISBN: 978-0-7354-0785-5 (AIP: American Institute of Physics), 351-357.

2009

Classification Models Based on Tanaka's Fuzzy Linear Regression Approach: The Case of Customer Satisfaction Modeling. Özer, G., Köksal, G., **Batmaz, İ.**, Türker-Bayrak, Ö., Kılıç, T., and E. Kartal-Koç. *Proceedings of 1st International Fuzzy Systems Symposium*. Ankara, Turkey. October 1-2, 2009, 233-240.

Modeling Quality of a Casting Process Using Fuzzy Regression Method (in Turkish). Türker-Bayrak, Ö., Köksal, G., **Batmaz, İ.**, Kılıç, T., Özer, G., and E. Kartal-Koç. *YA/EM'09: 29th National Congress of Operations Research and Industrial Engineering*. Ankara, Turkey. June 22-24, 2009, 138. ISBN: 978-975-6090-45-9. CDROM.

Modeling Nonlinear Data Structure Using CMARS (in Turkish). Yerlikaya-Özkurt, F., **Batmaz, İ.**, Taylan, P., Köksal, G., and G.-W. Weber. *YA/EM'09: 29th National Congress of Operations Research and Industrial Engineering*. Ankara, Turkey. June 22-24, 2009, 94. ISBN: 978-975-6090-45-9. CDROM.

2008

Developing a Classification Model for Customer Satisfaction with a Driver's Seat: A Comparative Case Study. Köksal, G., **Batmaz, İ.**, and E. Kartal-Koç. *Proceedings of the 6th International Symposium on Intelligent and Manufacturing Systems*. Sakarya, Turkey. October 14-17, 2008, 520-530.

Tikhonov Regulations in MARS and Multicriteria Optimization (in Turkish). Yerlikaya, F., Weber, G.-W., Taylan, P., **Batmaz, İ.**, and G. Köksal. *YA/EM'08: 28th National Congress of Operations Research and Industrial Engineering*. İstanbul, Turkey. June 30 – July 2, 2008, 71. CDROM.

2006

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Developing an Intelligent Software for Improving Productivity and Product Quality and Standards in Manufacturing Process Using Statistics Methods. Supported by TÜBİTAK-TTGV and S.P.A.C., METU-Technopolis, 2004-2005.

### *Researcher*

Ship Combat Effectiveness Evaluation (Gemi Muharebe Etkinlik Değerlendirme), (TÜBİTAK Destekli) ODTÜ DSİM Project No: 1007-SAVTAG-SSM-2015-02, Ankara, Turkey, May 2018 – ongoing.

Discovering of a New Gene Responsible for Limb-Girdle Muscle Dystrophy Phenotype. TÜBİTAK Project No: 112S271, 2012-2015.

The Use of Data Mining Techniques in Developing Early Warning (Surveillance) Systems for Natural Hazards. UNDP- UNEP- UNIDO- FAO Project, Project No: MDGF-1680, 2010-2011.

Statistical Evaluation of Concordance between Specifications and Performances of Instrumental Navigation Systems. ASELSAN, Ankara, Turkey. February-June 2010.

A New Method for Calculating Performance Score of High School Students. Center of Measuring, Selection and Placement (ÖSYM), Ankara. 2005.

Metamodeling on Simulation through Kriging and Regression: A Comparative Research. Netherlands National Research Fund (NWO) Supported Project, Department of Information Systems (BIK)/ Center for Economic Research (CentER), School of Economics and Business Administration (FEW), Tilburg University, Tilburg, Netherlands. 2002-Summer.

Studying Radon Anomalies based on Tectonic Activities in Alaşehir/Manisa Region Located at Active Gediz Graben. EBİLTEM 2000 BİL 037. The Institute of Nuclear Sciences, Ege University, İzmir, Turkey. 2000-2004.

Studying Radon Anomalies based on Tectonic Activities in Alaşehir/Manisa Region Located at Active Gediz Graben. TÜBİTAK Project, Project No. YDABÇAĞ-100Y059. The Institute of Nuclear Sciences, Ege University, İzmir, Turkey. 2000-2003.

Developing an Intelligent Tutoring System that Teaches Basic Probability Theory by Solving Examples (in Turkish). Supported by Ege University Research Fund. Department of Statistics, Ege University, İzmir, Turkey. 1992-1995.

A Research on Computer Aided Education for Elementary School Students. TÜBİTAK Project. Computer Sciences Engineering Department, Ege University, İzmir, Turkey. 1991-1992.

### *Consultant*

A Research Project on Improvement of Respirator Design/Production Performance by Statistical Design of Experiments. **Batmaz. İ. ASELSAN**, Ankara, Turkey. May-September, 2020.

Software Development for Virtual Factory Modelling Formation by using Statistical Design of Experiments Methods. SFM Software Technologies Incorporated Company. METU Technopolis, Ankara, August 2019-February 2020.

A Research on Collecting Aerodynamic Data and their Statistical and Mathematical Modelling. SAGE. Ankara. 2016-2017.

Linear and Nonlinear Regression Modeling of Fluoride Discharge from Various Dental Restorative Materials. Metallurgy and Materials Engineering, Yıldız Technical University, İstanbul, Turkey; and Faculty of Dentistry, Marmara University, İstanbul, Turkey. 2008-ongoing.

Comparing the Strength of Shearing Bonding of Different Dentin Adhesion Systems in Primary and Permanent Teeth and Examining Resin-Dentin Bonded Interfaces Using Scanning Electron Microscope (SEM) and Transmission Electron Microscope (TEM). PhD Thesis, Ankara University, Faculty of Dentistry, Ankara, Turkey, 2007.

The Role of Bleeding Criteria for Evaluating the Status of Exposed Dental Pulp. Ankara University, Faculty of Dentistry, Ankara, Turkey, 2007.

A Research on Statistical Modeling of Change in Fluoride Discharge and Recharge Amounts over Time as a Result of Different Treatments on Various Restorative Materials. PhD Thesis, Ankara University, Faculty of Dentistry, Ankara, Turkey, 2003.

### *Research Assistant*

A Research on the Infant Mortality in Sweden in the 19. Century by Utilizing Church Records. Supported by NSF, History Department, CMU, Pittsburgh, PA, USA. 1991.

Effects of Household Members' Preferences on the Brand Choice of Ketchup Consumption. Graduate School of Industrial Administration, Marketing Department, CMU, Pittsburgh, PA, USA. 1989-1990.

Factors Affecting the Quality of Fiberglass Production. Supported by PPG Company. Department of Statistics, CMU, Pittsburgh, PA, USA. 1989.

A Research on Determining Factors Affecting Performance of Students Attending Science Faculty of Ege University. Ege University, Department of Statistics, İzmir, Turkey. 1987-1988.

## **THESES SUPERVISED**

### *MSc Theses*

#### *Continuing*

- Durdular, Z. Predicting Conflicts by Machine Learning Models. **Sole-Advisor: Prof. Dr. İ. Batmaz.** Department of Statistics, METU, Ankara, Turkey. 2020-ongoing.

- Günbay, S. A Probabilistic and Statistical Exploration of Detecting Abnormally Low Bids in Public Procurement Procedures. **Sole-Advisor: Prof. Dr. İ. Batmaz.** Department of Statistics, METU, Ankara, Turkey. 2021-ongoing.
- İnce, O. Virtual Statistics Assistant for Researcher Medical Doctors. **Sole-Advisor: Prof. Dr. İ. Batmaz.** Department of Statistics, METU, Ankara, Turkey. 2021-ongoing.
- Özkum, Ö. The Applications of Markov Chain And its Variants in Game Theory and Decision-Making. **Sole-Advisor: Prof. Dr. İ. Batmaz.** Department of Statistics, METU, Ankara, Turkey. 2020-ongoing.

#### *Completed*

- Altınok, G., Learning to Rank Web Data by Multivariate Adaptive Regression Splines. **Principal Advisor: Prof. Dr. İ. Batmaz.** Co-Advisor: Assist. Prof. Dr. Pınar Karagöz. 2018.
- Kurt, C., Comparison of Computational Inpainting Methods. **Principal Advisor: Prof. Dr. İ. Batmaz.** Co-Advisor: Prof. Dr. İlkey Ulusoy. 2018.
- Kapucu, T., The Effect of Computer Assisted Instruction on Eight Grade Students' Permutation-Combination-Probability Achievement and Attitudes Towards Computer Assisted Learning. Department of Statistics, METU, Ankara, Turkey. **Principal Advisor: Prof. Dr. İ. Batmaz.** Co-Advisor: Assoc. Prof. Dr. Özlem İlk Dağ. 2016.
- Sivrikaya, N., Modeling Precipitation Series of Turkey with Hidden Markov Models (HMMs). Department of Statistics, METU, Ankara, Turkey. **Principal Advisor: Prof. Dr. İ. Batmaz.** Co-Advisor: Assist. Prof. Ceylan Talu-Yozgatlıgil. 2015 (Supported by METU BAP)
- Yetere-Kurşun, A., Ensemble Clustering of Turkish Meteorological Data. IAM, METU, Ankara, Turkey. **Principal Advisor: Prof. Dr. İ. Batmaz.** Co-Advisor: Assist. Prof. Cem İyigün. 2014. (Supported by METU BAP)
- Yazıcı, C., A Computational Approach to Nonparametric Regression: Bootstrapping CMARS Method. Department of Statistics, METU, Ankara, Turkey. **Sole Advisor: Assoc. Prof. Dr. İ. Batmaz.** 2011.
- Özmen, A., Robust Conic Quadratic Programming Applied to Quality Improvement- A Robustification of CMARS. IAM, METU, Ankara, Turkey. Principal Advisor: Prof. Dr. G.-W. Weber. **Co-Advisor: Assoc. Prof. Dr. İ. Batmaz.** 2010. (METU Best MSc Thesis Award)
- Özer, G., Fuzzy Classification Models Based on Tanaka's Fuzzy Linear Regression Approach and Nonparametric Improved Fuzzy Classifier Functions. Department of Industrial Engineering, METU, Ankara, Turkey. Principal Advisor: Prof. Dr. G. Köksal. **Co-Advisor: Assoc. Prof. Dr. İ. Batmaz.** 2009. (Supported by TÜBİTAK)
- Yerlikaya, F., A New Contribution to Nonlinear Robust Regression and Classification with MARS and its Application to Data Mining for Quality Control in Manufacturing. IAM, METU, Ankara, Turkey. Principal Advisor: Prof. Dr. G.-W. Weber. **Co-Advisor: Assoc. Prof. Dr. İ. Batmaz.** 2008. (METU Best MSc Thesis Award) (Supported by TÜBİTAK)
- Kartal, E., Metamodeling Complex Systems Using Linear and Nonlinear Regression Methods. Department of Statistics, METU, Ankara, Turkey. **Principal Advisor: Assoc. Prof. Dr. İ. Batmaz.** Co-Advisor: B. Kuran. 2007.
- Güntürkün, F., A Comprehensive Review of Data Mining Applications in Quality Improvement and a Case Study. Department of Statistics, METU, Ankara, Turkey. **Principal Advisor: Assoc. Prof. Dr. İ. Batmaz.** Co-Advisor: Prof. Dr. G. Köksal. 2007. (Supported by TÜBİTAK)
- Ögünç, F., Estimating the Equilibrium Real Exchange Rate and the Real Interest Rate Using an Unobserved Components Model. Department of Statistics, METU, Ankara, Turkey. **Principal Advisor: Assoc. Prof. Dr. İ. Batmaz.** Co-Advisor: Prof. Dr. H. Körezlioğlu. 2006.

- Bakır, B., Defect Cause Modeling with Decision Tree and Regression Analysis: A Case Study in Casting Industry. Informatics Institute, METU, Ankara, Turkey. Principal Advisor: Prof. Dr. N. Baykal. **Co-Advisor: Assoc. Prof. Dr. İ. Batmaz.** 2006. (Supported by TÜBİTAK)
- Tanıl, H., An Automatic Input Data Analyzer for Simulation (in Turkish). Department of Statistics, Ege University, İzmir, Turkey. **Sole Advisor: Assist. Prof. Dr. İ. Batmaz.** 2000. (Supported by Ege University Research Fund)
- Balsarı, M., A Research on Developing an Expert System for Diagnosing Blue-Green Algae Specie (in Turkish). Department of Statistics, Ege University, İzmir, Turkey. **Sole Advisor: Assist. Prof. Dr. İ. Batmaz.** 1995. (Supported by Ege University Research Fund)

#### *PhD Theses*

##### *Continuing*

- Kapucu, T. Linear Mixed-Models. **Principal Advisor: Prof. Dr. İ. Batmaz. Co-Advisor: F. Yavuz Gökalp.** Department of Statistics, METU, Ankara, Turkey. 2020-ongoing.

##### *Completed*

- Yazıcı, C., A Computational Approach to Detect Inhomogeneities in Time Series Data. Department of Statistics, METU, Ankara, Turkey. **Principal Advisor: Doç. Dr. C. Yozgatlıgil. Co-Advisor: Prof. Dr. İ. Batmaz.** Department of Statistics, METU, Ankara, Turkey. 2017.
- Aker, Ö., A Research on Discovering of a New Gene Responsible for Limb-Girdle Muscle Dystrophy Phenotype. Principal Advisor: Prof. Dr. Pervin Dinçer. **Co-Advisor: Assoc. Prof. Dr. İ. Batmaz.** Hacettepe University, Department of Medical Biology, Ankara, Turkey. 2011-2015. (Supported by TÜBİTAK)
- Bozağaç, C.D., Metamodeling Atomic Models in Discrete-Event System Specification (DEVS) Formalism Using Multivariate Adaptive Regression Splines (MARS). Principal Advisor: Assoc. Prof. Dr. M. Halit Oğuztüzün. **Co-Advisor: Prof. Dr. İ. Batmaz.** Computer Science Department, METU, Ankara, Turkey. 2014.
- Fahmi, F., Estimation of Response Errors in Complex Sample Survey. Principal Advisor: Prof. Dr. H. Öztaş Ayhan. **Co-Advisor: Prof. Dr. İ. Batmaz.** Department of Statistics, METU, Ankara, Turkey. 2013.
- Kartal-Koç, E., Reconstructing the Forward Stepwise Algorithm of Additive Regression Splines. **Principal Advisor: Assoc. Prof. Dr. İ. Batmaz.** Co-Advisor: Assist. Prof. Dr. Cem İyigün. Department of Statistics, METU, Ankara, Turkey. 2012.
- Erkan, İ., Multilevel Models for Time Series Gene Expression Data. Principal Advisor: Dr. Özlem İlk. **Co-Advisor: Assoc. Prof. Dr. İ. Batmaz.** Department of Statistics, METU, Ankara, Turkey. 2011. (Supported by TÜBİTAK)

#### **TEACHING INTERESTS**

- Data Science and Data Analytics
- Data Mining
- Computational Statistics
- Machine Learning
- Statistical Computing (Using SPSS, SAS, MINITAB, R, MATLAB, SQL)
- Programming Languages (Python, C, C++, PASCAL, BASIC, FORTRAN)
- Data Structures
- Data Processing

- Exploratory Data Analysis
- Modeling and Simulation
- Response Surface Methodology (Linear Modelling, DOE, Optimization)
- Regression Analysis
- Design of Experiments (DOE)
- Statistical Quality Control
- Probability and Statistics
- Applied Statistics

### RESEARCH INTERESTS

- Data Science and Data Analytics
- Big Data Mining
- Stream Data Mining
- Data Mining
- Computational Statistics
- Machine Learning
- Statistical Computing
- Early Warning System Development
- Response Surface Methodology, Metamodeling
- Design of Experiments (DOE)
- Statistical Modeling
- Quality Improvement
- Environmental Statistics
- System Simulation
- Statistical Software Development

### SEMINARS

#### *Continuing Education Seminars on*

- Basic Statistical Methods, TEİ, TUSAS, Eskişehir, February 19-21, 2013.
- Applications of Statistical Analysis in Medical Researches Using SPSS Package Program, ATO, Ankara Chamber of Medical Doctors, April-June 2011.
- Regression Modeling, Statistical Design of Experiments and Multivariate Adaptive Regression Splines (MARS), TÜBİTAK-SAGE, July 2008, 2014.
- Applied Statistical Methods, July 2006.
- Quality Management Certificate Program, May and July 2005; April 2008-June 2008; November 2008 - March 2009).

### OTHER PROFESSIONAL ACTIVITIES

#### *Committee/Jury Membership*

- **Fulbright Scholarship in Statistics Selection Committee**, Turkish Fulbright Commission, Ankara, Turkey.
- **PhD Qualification Exam Jury**, Department of Statistics, *Hacettepe University*, Ankara, Turkey.
- **MSc and PhD Thesis Jury**, Department of Statistics, Industrial Engineering Department, Institute of Applied Mathematics (IAM), Informatics Institute and GGIT, *METU*, Ankara, Turkey.  
Department of Statistics, *Ankara University*, Ankara, Turkey.



- **PhD Thesis Following Committee**, Department of Statistics, Industrial Engineering Department, Institute of Applied Mathematics, Informatics Institute, GGIT, METU, Ankara University Dil-Tarih-Coğrafya Faculty, Ankara, Turkey.
- **Expertise Thesis Jury**, Turkish Statistics Foundation (TÜİK). Ankara, Turkey.
- **Associate Professorship Jury**, Üniversitelerarası Kurul (Inter-universities Board). Ankara, Turkey.

#### *Professional Memberships*

- ERCIM WG, Computational and Methodological Statistics, SAS, GMS, and GCS, 2014-ongoing.
- IASC-International Association for Statistical Computing, ISI-International Statistics Institute, 2012-ongoing.
- EUROPT WG, Continuous Optimization Working Group of EURO, 2007 ongoing.
- Altı Sigma Forum (Six Sigma Form-in Turkish), Member of the Editorial Board, 2003-ongoing.

#### *Non-Academic*

- **Scholarship Committee Member**, METU, Ankara, Turkey, 2008-ongoing.

### **REFREEING**

#### *Journal Papers*

- Advances in Fuzzy Systems, 2016.
- Annals of OR, 2015, 2016, 2019 (3)
- CMPB: Computer Methods and Programs in Biomedicine, 2016
- Central European Journal of Operations Research, 2018.
- Communications in Statistics – Simulation and Communication, 2015, 2019 (2).
- Computational Intelligence, An International Journal, 2019, 2020.
- Computational and Mathematical Methods in Medicine, 2016.
- COST: Computational Statistics, 2015, 2016, 2017
- EEST: Environmental and Ecological Statistics, 2017
- Financial Innovation, 2018.
- International Journal of Advanced Manufacturing Technology, 2015.
- Journal of Applied Statistics, 2009.
- Journal of Computational and Applied Mathematics, 2009, 2010.
- Journal of the Operations Research Society of China, 2019.
- Journal of Statistical Research (in Turkish and English), 2007, 2008, 2010, 2011.
- Journal of Statistical Software, 2013.
- Machine Learning, 2014.
- Optimization, 2007, 2009, 2010, 2012, 2013, 2016, 2017 (2), 2018.
- Quality Technology, 1990.
- Simulation: Transactions of the Society for Modeling and Simulation International, 2012, 2014, 2017, 2020.
- Transaction of Fuzzy Systems, 2018 (2).
- Turkish Journal of Electrical Engineering and Computer Sciences, 2016.
- Turkish Journal of Mathematics, 2016.

#### *Book Chapters*

- Springer, 2011, 2013

### *Conference Abstracts*

- USMOS 2019: 8. Ulusal Savunma Uygulamaları Modelleme ve Simülasyon Konferansı, METU, Ankara, Turkey.
- USMOS 2017: 7. Ulusal Savunma Uygulamaları Modelleme ve Simülasyon Konferansı, METU, Ankara, Turkey.
- 11. International Statistics Days, Bodrum, Turkey, October 3-7, 2018.
- IC-SMHD-2016 - International Conference on Information Complexity and Statistical Modeling in High Dimensions with Applications, Nevşehir, Cappadocia, Turkey, May 18-21, 2016.
- YAEM: 35th National Congress of Operations Research and Industrial Engineering (in Turkish), İzmir, Turkey, 2016.
- YAEM: 35th National Congress of Operations Research and Industrial Engineering (in Turkish), Ankara, Turkey, 2015.
- 7. Statistics Days Symposium (in Turkish), 2010

### *Research Projects*

- TÜBİTAK, 2007, 2008
- METU, BAP Projects, METU, 2008, 2010, 2013, 2014, 2016, 2018.

### *TÜBİTAK Panel/External Evaluator*

- 1001 Projects Panel, 2021
- External Evaluator, 2021
- Supports for National Scientific Activities, 2016.
- Research Projects of Bachelor Students, 2019.

### *Special Awards*

- Serhat Özyar Yong Scientist of the Year Award, Association for Faculty Members of METU, Turkish Chamber of Electrical Engineers (TMMOB), and Science and Utopia Cooperative, 2008.

### *METU Technopolis*

- Projects, 2019 (4), 2020, 2021.
- Firms, 2019.

### **HOBIES**

Reading (in social sciences and in literature), walking, cycling, practicing Pilates/Yoga, drawing, spending time with my four-leg son, Ateş, and travelling around.