

## CEYLAN (TALU) YOZGATLIGIL, Ph. D.

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Middle East Technical University  
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### EDUCATION

**Temple University**, Philadelphia, USA

**Ph.D., Statistics**, January 2007

*Thesis Title:* Temporal Aggregation and Related Problems in Multivariate Time Series Analysis

**Middle East Technical University**, Ankara, TURKEY

**M.S., Statistics**, September 1999

*Thesis Title:* A Survey of Competing Risk Analysis: A Medical Application

**Middle East Technical University**, Ankara, TURKEY

**B.S., Statistics**, July 1996

### EMPLOYMENT

**Vice Chairperson** at Department of Statistics, METU February 2009 – August 2012

**Assistant Professor** at Department of Statistics, METU August 2010-present

**Instructor** at Department of Statistics, METU July 2007 – July 2010

**Teaching Assistant** at Department of Statistics, Temple University 2003 – 2005

**Research Assistant** at Department of Statistics, METU August 1996 – 2007

- Been instructor of “Statistics for Engineers” in Spring 2000.
- Been assistant for lectures: “Mathematical Statistics”, “Applied Time Series Analysis”, “Statistical Quality Control”, “Biostatistics”, “Stochastic Processes” and “Statistical Simulation”, “Statistical Methods”.
- Coordinator of teaching assistants in the Department of Statistics of METU in 1999.

**Student Assistant** at Department of Statistics, METU October 1995-June 1996

- Assisted bachelor students with statistics courses given at the department.

### Internships

**State Institute of Statistics** August 1995

- Worked in publication department. Duties included interpretation of 1995 data of State Institute of Statistics and preparation of annual bulletin.

## **RESEARCH INTERESTS**

- Time Series Analysis: Univariate and Multivariate Methods
- Temporal Aggregation of Time Series
- Statistical Inference
- Spatio-temporal Analysis
- Survival Analysis and Competing Risks

## **PUBLICATIONS**

### Papers in refereed journals

Piyal, B., Akdur, R., Ocaktan, E. and Yozgatligil, C. (2013). An Analysis of the Prevalence of Malaria in Turkey over the last 85 years. *Pathogens and Global Health*, 107(1), p. 30-34.

Yozgatligil, C., Aslan, S., İyigün, C. and İ. Batmaz. Comparison of Missing Value Imputation Methods for Turkish Meteorological Time Series Data. *Theoretical and Applied Climatology*, DOI 10.1007/s00704-012-0723-x.

Iyigun C. , Türkeş, M., Batmaz, İ, Yozgatligil, C., Purutçuoğlu, V., Kartal Koç, E and Öztürk, M. Z. Clustering Current Climate Regions of Turkey by Using a Multivariate Statistical Method, *Theoretical and Applied Climatology*, DOI 10.1007/s00704-012-0823-7.

Kartal, E., Fahmi, M. F., İyigün, C., Türkeş, M., Yozgatligil, C., Purutçuoğlu, V., Batmaz, İ., Köksal, G., (2011). Türkiye İklim Bölgelerinin Hiyerarşik Kümeleme Yöntemi ile Belirlenmesi, *İstatistik Araştırma Dergisi*, 8 (1), 13-25.

Aslan, S., Yozgatligil, C., İyigün, C., Batmaz, İ., and H. Tatlı. (2011). Meteorolojik Zaman Serilerinde Kayıp Veri Tahmin Yöntemlerinin Başarımlarının Korelasyon Boyutu Analiziyle Karşılaştırılması, *İstatistik Araştırma Dergisi*. 8 (2), Özel Sayı, 55-67.

Yozgatligil, C. and Wei, W.W.S. (2009). Representation of Multiplicative Seasonal Vector Autoregressive Moving Average Models, *The American Statistician*, 63(4), 328-334.

Ula, T. A. and Yozgatligil, C. (2004). Modified Maximum-Likelihood Method for Non-normal Time Series Revisited, *Communication in Statistics - Theory and Methods*, 33, 2, 397 – 417.

Papers in Conference Proceedings

- Akal, T., Fahmi, F., Kartal Koc, E., Purutcuoglu Gazi, V., Iyigun, C., Yozgatligil, C. and Batmaz, I. (2012) “Detection of seasonal changes in climate data by comparative analysis; A case study for Turkey,” 25th European Conference on Operations Research, Vilnius, Lithuania. 8-11 July, 2012.
- Aykan, F., Kartal Koc, E., Yozgatligil, C., Iyigun, C., Purutcuoglu Gazi, V., and Batmaz, I. (2012) “Developing precipitation models for continental central Anatolia, Turkey,” 25th European Conference on Operations Research, Vilnius, Lithuania. 8-11 July, 2012.
- Yetere Kursun A., Iyigun, C., Yozgatligil, C. and I. Batmaz (2012) Seasonal Variation of Turkey: A Consensus Clustering Approach. The 10th International FLINS Conference on Uncertainty Modeling in Knowledge Engineering and Decision Making (FLINS 2012) August 26-29, 2012, Istanbul, Turkey
- Akal, T., Purutcuoglu Gazi, V., Batmaz, I, Kartal Koc, E.,Iyigun, C. and Yozgatligil, C. (2012). Investigating the Seasonal Patterns of Continental Central Anatolia by Clustering, The 25th Conference of European Chapter on Combinatorial Optimization, Antalya, Turkey, April 26 – 28, 2012.
- Adiguzel, F, **Yozgatligil, C.**, Basbug Erkan B.B., Ozkan, D. And Sandirli, E. (2011), Assessing the Demand Factors for Residential Earthquake Insurance in Turkey: Empirical Evidence. *New Developments in Theory and Application of Statistics: An International Conference in Memory of Professor Moti Lal Tiku*, May 2-4, 2011, Ankara, Turkey, p.168-175.
- **Yozgatligil, C.**, Purutcuoglu, V., Yazıcı, C. and Batmaz, İ. (2011). Validity of Homogeneity Tests for Meteorological Time Series Data: A Simulation Study. *Proceedings of the 58th World Statistics Congress (ISI2011)*. **CPS006-03**: <http://www.isi2011.ie/content/access-congress-proceedings.html>.

- Fahmi, F., Kartal, E., İyigün, C., **Yozgatlıgil, C.**, Çınar, İ., Türkeş, M. and Batmaz, İ., “İklim Değişikliğinin Türkiye Üzerindeki Etkisinin Kümeleme Yöntemleri ile İncelenmesi”, *Uluslararası Katılımlı Coğrafya Kongresi*, 7-10 Eylül 2011, İstanbul, Türkiye.
- Aslan, S., **Yozgatlıgil, C.**, İyigün, C., Batmaz, İ., Türkeş, M., and Tatlı, H., (2010). Comparison of Missing Value Imputation Methods for Turkish Monthly Total Precipitation Data. *Paper Presented at the Proceedings of the 9th International Conference of the Computer Data Analysis and Modeling: Complex Stochastic Data and Systems*, Minsk, Belarus State University, Vol(2) p137-140.
- Uraz A., Toçak Y., **Yozgatlıgil C.**, Çetiner S. and Bal B. (2009). Perceived Sources of Stress, General Health and Psychological Well-being in Turkish Dental Students. *Eur J Dent Educ* 13, 125 John Wiley & Sons A/S.
- **Yozgatlıgil, C.** and Wei, W. W.S. (2006). Temporal Aggregation and Causality Tests in Cointegrated Systems. *ASA Proceedings of the Joint Statistical Meetings*, 1162-1167. American Statistical Association (Alexandria, VA).
- **Yozgatlıgil, C.** and Wei, W. W.S. (2005). Effects of Temporal Aggregation on Cointegration Tests. *ASA Proceedings of the Joint Statistical Meetings*, 970-975. American Statistical Association (Alexandria, VA).
- **Yozgatlıgil, C.** and Wei, W. W.S. (2004). Representation of Multiplicative Vector Autoregressive Moving Average Processes *ASA Proceedings of the Joint Statistical Meetings*, 1382-1387. American Statistical Association (Alexandria, VA).
- **Talu C.** and Yıldırım F. (1999). A Statistical Evaluation of Competing Risks Data, *Proceedings of the 1st Conference of Statistics*, 326-329, Belek, Antalya, Turkey.

#### Abstracts in Conference Proceedings

- Asar, Ö., **Yozgatlıgil, C.**, Kartal, E., and Batmaz, İ. (2011). Analysis of Extreme Precipitation Events in Turkey. *7. Uluslararası İstatistik Kongresi (ISKON)*. Antalya, Türkiye, 28 Nisan-1 Mayıs, 2011.
- Yazıcı, C., Purutcuoglu, V., **Yozgatlıgil, C.**, Batmaz, İ., and Bayramoğlu, K. (2011). Homogeneity Analysis for Dependent Climate Data, *7. Uluslararası İstatistik Kongresi (ISKON)*. Antalya, Türkiye, 28 Nisan-1 Mayıs, 2011.
- **Yozgatlıgil, C.**, Aslan, S., İyigün, C., Batmaz, İ., Türkeş, M. ve Tatlı, H., “Zaman Serilerinde Kayıp Veri Tamamlama Yöntemlerinin Karşılaştırılması: Türkiye İklim Verileri Üzerine Bir Uygulama”, *Yöneylem Araştırması ve Endüstri Mühendisliği* 30.

*Ulusal Kongresi*, 30 Haziran – 2 Temmuz 2010, Sabancı Üniversitesi, İstanbul, Türkiye, p. 127- 128.

- Aslan, S. , **Yozgatlıgil, C.**, İyigün, C. , Batmaz, İ. ve Tatlı, H., “Meteorolojik Zaman Serilerinde Kayıp Veri Tahmin Yöntemlerinin Başarımlarının Korelasyon Boyutu Analiziyle Karşılaştırılması” – 7. *İstatistik Günleri Sempozyumu*, 28 – 30 Haziran 2010, ODTÜ, Ankara, Türkiye.
- Kartal, E., Fahmi, M. F., İyigün, C., Türkeş, M., **Yozgatlıgil, C.**, Purutçuoğlu, V., Batmaz, İ., Köksal, G., “*Türkiye İklim Bölgelerinin Hiyerarşik Kümeleme Yöntemi ile Belirlenmesi*” – 7. *İstatistik Günleri Sempozyumu*, 28 – 30 Haziran 2010, ODTÜ, Ankara, Türkiye.
- Asar, Ö., Kartal, E., Aslan, S., Öztürk, M. Z., **Yozgatlıgil, C.**, Çınar, İ., Batmaz, İ., Köksal, G., Türkeş, M. ve Tatlı, H. , “*1950-2006 Yılları Arasındaki Türkiye Yağış Verilerinin Tanımlayıcı Veri Madenciliği Yöntemleri ile Analizi*” – 7. *İstatistik Günleri Sempozyumu*, 28 – 30 Haziran 2010, ODTÜ, Ankara, Türkiye.

#### Presentations

- Çınar, İ., **Yozgatlıgil, C.** and Batmaz, İ. (2011). The Effect of Urban Land Cover Change Around the Observation Sites on Temperature, *International Symposium on Environmental Protection and Planning: Geographic Information Systems (GIS) and Remote Sensing (RS) Applications (ISEPP)*, 28-29 June 2011, Gediz University, Izmir, Turkey.
- İklim Değişikliğinin Türkiye Üzerindeki Etkisinin Kümeleme Yöntemleri İle İncelenmesi. Fahmi, F., Kartal, E., İyigün, C., **Yozgatlıgil, C.**, Çınar, İ., Aslan, S., Zeynel, M., Türkeş, M., and Batmaz, İ. , *Uluslararası Katılımlı Coğrafya Konferansı*. İstanbul, Türkiye. 7-10 September, 2011.
- Fahmi, M. F., Kartal, E., İyigün, C., Türkeş, M., **Yozgatlıgil, C.**, Purutçuoğlu, V., İnci Batmaz, İ., ve Köksal, G., “*Determining the Climate Zones of Türkiye by Center-Based Clustering Methods*”- 3<sup>rd</sup> *Conference on Nonlinear Science and Complexity*, 28 - 31 July, 2010, Çankaya Üniversitesi, Ankara, Türkiye.
- Uraz A., Toçak Y., **Yozgatlıgil C.**, Çetiner S., Bal B., *Perceived Sources of Stress, General Health and Psychological Well-being in Turkish Dental Students. Association for Dental Education in Europe 34th Annual Meeting* 3-6 September Zagreb Croatia, 2008.
- **Yozgatlıgil C.**, 2007, August 20; *SAS Applications on VARMA Modelling and Cointegration Analysis*, METU, New Advances in Statistics Graduate Summer School.

- Çetiner, M.; Sucak, G; Aydın F.; Birtaş, E.; **Yozgatlıgil, C.**; Kalaça, S.; Akı, Z.; Kalayoğlu-Beşışık, S.; Ferhanoğlu, B.; Gülbaş, Z.; Uzay, A.; Kaygusuz, I.; Fıratlı-Tuğlular, T; and Bayık M., *Hematopoyetik Kök Hücre Nakli Yapılan Hastalarda Yaşam Kalitesinin Değerlendirilmesi, THD 33.Ulusal Hematoloji Kongresi*, Ankara, 16- 19 Ekim 2007.

#### Chapters in Books

- Fahmi, F., Kartal, E., İyigün, C., Türkeş, M., Yozgatlıgil, C., Purutcuoğlu, V., **Batmaz, İ.** and G. Köksal (2011). Determining the Climate Zones of Turkey by Center-Based Clustering Methods. . In *Nonlinear Dynamics of Complex Systems: Applications in Physical, Biological and Financial Systems*. J.A. Tenreiro Machado, Baleanu, D. and A. Luo (Eds.). p. 171-178. New York: Springer.
- **Yozgatlıgil, C.** (2007) "SAS Applications on VARMA Modelling and Cointegration Analysis" in "Recent Advances in Statistics", Turkish Statistical Institute Press, Chapter 10, pp. 129-140. ISBN: 978-975-01606-0-8.

#### Departmental Seminars

- December 10th, 2009, Middle East Technical University, *Representation of Multiplicative Seasonal Vector Autoregressive Moving Average Models*.
- October 19, 2006, Middle East Technical University, *Effect of Temporal Aggregation on Error Correction Representation and Cointegration Trace Test*.
- Given seminars on competing risks based on the published papers (Cox regression, estimation problem when competing risks are dependent) in the department in 1997 and 1998.

#### Working group seminars

- May 7, 2007 Middle East Technical University, Time Series Analysis (seminar presented to undergraduate students).

## **ORGANIZATIONS**

- Organizing committee, 7. İstatistik Günleri Sempozyumu (2010), Department of Statistics, Middle East Technical University, Ankara, Turkey.
- Organizing committee, Graduate Summer School on New Advances in Statistics (2007), Department of Statistics, Middle East Technical University, Ankara, Turkey (Fall 2006 - Spring 2007)
- Organizer, Faculty Seminars, Department of Statistics, Middle East Technical University, Ankara, Turkey (Fall 2006 - Spring 2007)
- Organizing committee, International Conference on Applied Statistics in Medical Sciences (1997), Department of Statistics, Middle East Technical University, Ankara, Turkey (1996-1997)
- Organizing committee, 51st session of “International Statistical Institute”, August 1997, Istanbul, Turkey.

### **CERTIFICATES**

- An International Summer Course in Biostatistics, Çukurova University and University of Pittsburgh, Department of Biostatistics, May 15-19 2000, Adana, Turkey – has completed the course on
  - I. Design and Analysis of Clinical Trials
  - II. Statistical Methods in Environmental and Occupational Epidemiology
  - III. Practical Applications Using Major Statistical Packages.

### **AWARDS AND HONORS**

- 33rd National Hematology Congress THD Clinical Hematoloji Paper Award in 2007.
- Full Time Scholarship for Doctorate from Turkish Higher Education Council and Middle East Technical University, 2001-2006
- In graduation ranked third in a class of 100 in the Department of Statistics at METU.
- Listed in 1992, 1993, 1994 (Fall & Spring semesters) President’s Honours Roll and 1995 (Fall & Spring semesters) President’s High Honours Roll, Department of Statistics, Middle East Technical University (METU).

### **TEACHING**

Courses at Temple University:

- Basic Quantitative Foundations for Business and Economics II in Spring 2003 and Summer I 2005
- Selected Statistical Topics in Summer II 2003, Spring 2004, Summer I and II 2004
- Statistics for Engineers in Fall 2003 and Fall 2004
- Statistical Methods and Concepts in Spring 2005

Courses at METU:

- STAT 511: Time Series Analysis I in Fall 2006, 2007, 2008.
- STAT 512: Time Series Analysis II in Spring 2007, 2008, 2009.
- STAT 518: Statistical Design of Experiments in Spring 2007.
- STAT 201: Introduction to Probability and Statistics I, Fall 2010.
- STAT 221: Fundamentals of Statistics, Fall 2011.
- STAT 271: Mathematical Statistics I in Summer 2007 and Fall 2007, 2008, 2009, 2010, 2011.
- STAT 272: Mathematical Statistics II in Spring 2008, 2009, 2010, 2011, 2012.
- IAM 530: Elements of Probability and Statistics in Fall 2008, 2009, 2010.
- STAT 497: Applied Time Series Analysis in Spring 2009, 2010, 2011, 2012.

Courses developed

- STAT 444 Advanced Statistical Computing
- STAT 562 Univariate Time Series Analysis
- STAT 563 Multivariate Time Series Analysis
- STAT 559 Applied Multivariate Analysis (with Dr. Vilda Purutcuoğlu)

**PROFESSIONAL ACTIVITIES:**

Affiliated Faculty

- Institute of Applied Mathematics, METU

Advisor of the following students:

- Fatih Ortakaya (M.S. STAT) (graduated in Summer, 2009)
- Sipan Aslan (M.S., STAT) (graduated in Summer, 2010)
- Nazlı Sarıaslan (M.S., STAT) (graduated in Summer, 2010)
- Göksel Tüker (M.S., STAT) (graduated in Summer, 2010)
- Emre Albayrak (M.S., STAT)
- Sipan Aslan (Ph.D., STAT)



Co-advisor of the following students:

- Ayşegül Altaban (M.S., IE) (together with Prof. Dr. Gülser Köksal)

Thesis juries served

- Fatma Aydınlık (M.S., STAT) (graduated in 2007)
- Esra Polat (M.S., GGIT) (graduated in 2007)
- H. Volkan Karacan (M.S., CE) (graduated in 2008)
- Zerrin Yalçınöz (M.S., STAT) (graduated in 2008)
- Gül İnan (M.S., STAT) (graduated in 2009)
- Aylin Dalçık (M.Sc., STAT) (graduated in Fall 2009)
- Yasemin Aslan (M.Sc., STAT) (graduated in 2010)
- İbrahim Erkan (Ph.D., STAT) (graduated in 2011)

**PROJECT EXPERIENCE**

- *Project title:* Dayanıklı Tüketim Malları İçin Müşteri Bağlılığının Modellenmesi  
*PI:* Prof. Dr. Gülser KÖKSAL (METU, Dept. of Industrial Engineering)  
*Supported by:* BAP, METU  
*Role & time spent:* Co-investigator, 1.1.2012 -31.12.2012  
*Project No:* BAP-03-07-2012-001  
*Project Budget:*3,000TL
- *Project title:* Veri Madenciliği Yöntemleri ile Türkiye İklim Bölgelerinin Yeniden Belirlenmesi ve Yağış Tahmin Modellerinin Geliştirilmesi  
*PI:* Assoc. Doç. Dr. İnci Batmaz (METU, Dept. of Statistics)  
*Supported by:* BAP, METU  
*Role & time spent:* Co-investigator, 2008 -2011  
*Project No:* BAP-2008-010-09-02  
*Project Budget:*22,000TL
- *Project title:* Zamansal Topplulaşma Uygulanacak Serilerde Optimum Topplulaştırma Periodunun Bulunması  
*PI:* Dr. Ceylan Yozgatlıgil  
*Supported by:* BAP, METU  
*Role & time spent:* Principal investigator, since 1.1.2009  
*Project No:* BAP-01-09-2009-101  
*Project Budget:*10,000TL
- *Project title:* Türkiye’de Bireylerin Doğal Afet Sigortası ve Genel Sigorta Talebi ve Satın Alma Eğilimini Etkileyen Faktörler

*PI:* Dr. B. Burçak Başbuğ Erkan (METU, Dept. of Statistics)

Supported by: BAP, METU

Role & time spent: Co-investigator, 1.1.2010 -1.7.2011

*Project No.:* BAP-08-11-2010-R-03

*Project Budget:* 15,000TL

- For Turkish Radio Television about the TV preferences of people living in South and South-East Anatolia, 1998.
- For South-East Turkey Project about the living standards of people living in that region, 1998.
- For Janssen-Cilag about foot health (ACHILLES project), 1999.