Fatma Sevinç KURNAZ

Curriculum Vitae

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Contact Information

e-mail: fatma.kurnaz@case.edu
e-mail: fskurnaz@yildiz.edu.tr
e-mail: fskurnaz@gmail.com

Department of Mathematics, Applied Mathematics and Statistics
College of Arts and Science
Case Western Reserve University
2145 Adelbert Rd, Cleveland, OH 44106

Employment

2025–present	Visiting Assistant Prof., Department of Mathematics, Applied Mathematics, and Statistics, Case Western Reverse University, Cleveland, OH, USA.
2022–present	Assoc. Prof. Dr., Department of Statistics, Yildiz Technical University, Istanbul, Turkey.
2020–2022	Assist. Prof. Dr., Department of Statistics, Yildiz Technical University, Istanbul, Turkey.
2017–2020	Research Assistant Dr., Department of Statistics, Yildiz Technical University, Istanbul, Turkey.
2012–2017	Research Assistant, Department of Statistics, Yildiz Technical University, Istanbul, Turkey.

Academic Experience

2021–2022	(from September to September) Vienna University of Technology, Vienna, Austria. Visiting Researcher, Institute of Statistics and Mathematical Methods in Economics. Visited Prof. Peter Filzmoser.
2016–2017	(from May to April) Vienna University of Technology, Vienna, Austria. Visiting Researcher, Institute of Statistics and Mathematical Methods in Economics. Visited Prof. Peter Filzmoser.
2013–2014	(from September to June) Vienna University of Technology, Vienna, Austria. Guest Researcher, Institute of Statistics and Probability Theory. Visited Prof. Peter Filzmoser.

Research Interests

Robustness, Sparsity, High Dimensional Data, Neural Networks, Machine Learning Methods, Compositional Data, Drought

Education

2011–2017	PhD in Graduate School of Natural and Applied Sciences, Department of Statistics, Yildiz Technical University, Istanbul, Turkey. **Thesis Title:** *"New Robust Penalized Estimators for Linear and Logistic Regression"*, Advisor: Prof. Dr. Peter Filzmoser
2008–2011	MSc Department of Mathematics, Faculity of Science, Istanbul University, Istanbul, Turkey. **Thesis Title:** *"The Estimation of Biasing Parameters of some Biased Estimators"*, Advisor: Assoc. Prof. Kadri Ulas Akay
2003–2007	BSc in Department of Mathematics, Science and Art Faculity, Canakkale Onsekiz Mart University, Canakkale, Turkey.

Languages

Turkish, English, Albanian

Served as an Editor

1. Associate Editor, *Statistical Papers* (Springer), 2025–present.

2. Area Editor, *Sinop University Journal of Natural Sciences* (Sinopjns), TR Dizin, 2024–present.

3. Section Editor, *Black Sea Journal of Engineering and Science* (BSJ Eng. Sci.), TR Dizin, 2018–present.

4. Book: *İstatistik Çalışmaları*, Yaz Yayınevi, Afyonkarahisar, 2024.

Awards and Achievements

2020	The grant to Post-doctoral research by Scientific and Technological Research Council of Turkey (TUBITAK 2219).
2016	The grant to research during PhD by The Scientific and Technological Research Council of Turkey (TUBITAK 2214/A).
2012	The Young Scientists Award 3'th, LinStat12, Bedlewo, Poznan, Poland.
2007	Best ranking student among 2007 graduates of Mathematics Departments of Çanakkale Onsekiz Mart University.

Conference Service / Organizational Roles

1. ICORS 2026, Co-Chair, International Conference on Robust Statistics, Istanbul, Turkiye, 21-25 July 2026.

2. HDDA 2026, Organizing Committee Member, High Dimensional Data Analysis Conference, Istanbul, Turkiye, 12-14 August 2026.

Invited Talks

1. Kurnaz F. S., Grad Carieers, Yıldızlı Akademisyenlerin Doktora Sonrası Uluslararası Kariyer Yolculukları, Yıldız Teknik Üniveristesi Fen Bilimleri Enstitüsü, 2023, TÜRKİYE

2. Kurnaz F. S., A Robust Liu Regression Estimator, Linstat2014, International Conference on Trends and Perspectives in Linear Statistical Inference, 24-28 August 2014, Linköping, SWEDEN.

Postgraduate Students

1. An Application on Artificial Neural Networks, *Emel ÖZEN*, Statistics

2. An Application with Machine Learning Methods, *Usame Furkan AYDOGAN*, Data Analitics

3. Statistical Application with Aircraft Maintenance and Repair Data, *Onur Batin DOGAN*, Statistics

Software

1. Kurnaz F.S, Hoffmann I. and Filzmoser P., (2022) enetLTS: Robust and Sparse Methods for High Dimensional Linear and Binary and Multinomial Regression - R package version 1.1.0. CRAN link: https://cran.r-project.org/web/packages/enetLTS/index.html

2. Kurnaz F.S, Hoffmann I. and Filzmoser P., (2018) enetLTS: Robust and Sparse Methods for High Dimensional Linear and Logistic Regression - R package version 0.1.0. CRAN link: https://cran.r-project.org/web/packages=enetLTS/index.html

Submitted Publications in 2025

1. Doğan O.B. and Kurnaz F.S., *Crime in Proportions: Applying Compositional Data Analysis to European Crime Trends for 2022*, **Italian Journal of Applied Statistics**

2. Doğan O.B. and Kurnaz F.S., *Crypto Price Similarity: An Investigation Using Pearson Correlation*, **Cogent Economics & Finance**

Submitted Publications in 2024

1. Aktürk B. and Kurnaz F.S., *Comparative Analysis of Robust Sigmoid Activation Function and Noisy Data*, **SN Computer Science**

Publications

1. Boz C. and Kurnaz F.S., (2025) *Modeling Health Expenditure Determinants: Insights from Robust Regression Techniques* **Journal of Aging and Health**

2. Kurnaz, F.S., (2025) *New Robustified Liu-Type Regression Estimators for Low and High Dimensional Data*, **Communications in Statistics - Simulation and Computation**

3. Evkaya, O., Kurnaz, F.S., Ozdemir, O. and Yigit, P., (2025) *Leveraging Ensemble and Hybrid Forecasting tools to increase accuracy: Turkey COVID-19 case study*, **SN Computer Science**

4. Arashi M., Kurnaz F.S. and Mamodekhan N., (2024) *The Impact of Prior Based Loss Function for Elliptical Regression Models*, **Sinop University Journal of Natural Sciences**

5. Yigit P. and Kurnaz F.S., (2024) *A comparative study of Marriage-Divorce and Related Factors in Türkiye's Regions Using Kohonen SOM - MDS Tandem and MULTIMOORA Approaches*, **SN Computer Science**

6. Kurnaz F.S. and Filzmoser P., (2023) *Robust and Sparse Multinomial Regression in High Dimensions*, **Data Mining and Knowledge Discovery**, DOI: 10.1007/s10618-023-00936-6

7. Kurnaz F.S. and Filzmoser P., (2023) *'enetLTS': Robust and Sparse Methods for High Dimensional Linear, Binary, and Multinomial Regression*, **Journal of Open Source Software**

8. Gunes M.S. ,Yildiz D. and Kurnaz F.S., (2022) *A Comparative Assessment of Municipal Water Use in Turkey*, **Journal of Water Resources Planning and Management**, DOI: 10.1061/(asce)wr.1943-5452.0001514

9. Kurnaz F.S., (2021) *Performances of Some High Dimensional Regression Methods*, **Communications in Statistics–Simulations and Computations**, DOI: 10.1080/03610918.2021.1898638

10. Kurnaz F.S., (2021) *Performances of Some High Dimensional Regression Methods: Sparse Principal Component Regression*, **Communications in Statistics–Simulations and Computations**, DOI: 10.1080/03610918.2021.1881115

11. Evkaya, O. and Kurnaz F.S., (2021) *Forecasting Drought using Neural Network Approaches with Transformed Time Series Data*, **Journal of Applied Statistics**, DOI: 10.1080/02664763.2020.1867829,

12. Kurnaz F.S., (2020) *Some Regression Methods based on Principal Components*, **Gumushane University Journal of Science and Technology Institute**, DOI: 10.17714/gumusfenbil.641791

13. Kurnaz F.S, Hoffmann I. and Filzmoser P., (2017) *Robust and sparse estimation methods for high-dimensional linear and logistic regression*, **Chemometrics and Intelligent Laboratory Systems**, DOI: 10.1016/j.chemolab.2017.11.017

14. Kurnaz F.S. and Akay K.U., (2017) *Matrix Mean Squared Error Comparisons of Some Biased Estimators with Two Biasing Parameters*, **Communications in Statistics–Theory and Methods**, DOI: 10.1080/03610926.2017.1335415

15. Filzmoser P. and Kurnaz F.S., (2017) *A Robust Liu Regression Estimator*, **Communications in Statistics–Simulations and Computations**, DOI: 10.1080/03610918.2016.1271889

16. Kurnaz F.S. and Akay K.U., (2014) *A New Liu-type Estimator*, **Statistical Papers**, DOI: 10.1007/s00362-014-0594-6

Book Chapters

1. Istatistikte Temel Robustlık Kavramları, in: Akademik Perspektiften İstatistik, Fatma Sevinç KURNAZ, Editor, Yaz Yayınevi, Afyonkarahisar, 2025

2. Istatistikte Temel Robustlık Kavramları, in: İstatistik Çalışmaları, Fatma Sevinç KURNAZ, Editor, Yaz Yayınevi, Afyonkarahisar, 2024

3. Konum ve Olcek Parametreleri icin Bazı Tahmin Ediciler, in: İstatistik Çalışmaları, Fatma Sevinç KURNAZ, Editor, Yaz Yayınevi, Afyonkarahisar, 2024

4. Çeşitli Lineer Sınıflandırma Yöntemleri, Uygulamaları ve Karşılaştırmaları, in: Mühendislik, Matematik ve Doğa Bilimlerinde Yenilikçi Yöntemler, Turgut Özseven, Ebubekir Yaşar, Muharrem Düğenci, Sena Özen Yıldırım, Şirin Çetin, Editor, Ekin Yayınevi, Bursa, pp.53–65, 2019

5. R ile Lineer Yöntemler, in: Mühendislik, Matematik ve Doğa Bilimlerinde Yenilikçi Yöntemler, Turgut Özseven,Ebubekir Yaşar,Muharrem Düğenci,Sena Özen Yıldırım, Şirin Çetin, Editor, Ekin Yayınevi, Bursa, pp.53–65, 2019

Project

1. Kurnaz F.S., TUBITAK Project, Yüksek Boyutlu Veri Kümeleri İçin Çok Değişkenli Robust Regresyon Modeli, 2023- 2024

2. Özcan E., Kurnaz F.S., TUBITAK Project, Türkiye'de Doğurganlığı Etkileyen Faktörlerin Analizi: 2018 Tnsa Verisi, 2023-2024

3. Kurnaz F.S., Project Supported by Higher Education Institutions, Yüksek Boyutlu Veri Kümelerinde Robust Tahmin Ediciler, 2022-2023

4. Kurnaz F.S., TUBITAK Project, Yüksek Boyutlu Veri Kümelerinde Çok Terimli Lojistik Regresyon ve Poisson Regresyon için Robust ve Sparse Tahmin Edici, 2021-2022

5. Kurnaz F.S., Demir S.B., Company, Araştırmacı Eğitimi Online Öğrenme Ortamının ve Sisteminin Geliştirilmesi ve Tasarımı, 2021-2022

6. Kurnaz F.S., Project Supported by Higher Education Institutions, Yüksek Boyutlu Veri Kümelerinde Çok Terimli Lojistik Regresyon için Robust ve Sparse Tahmin Edici, 2020-2021

Conference Talks

EST2025	Doğan O.B. and Kurnaz F.S. Statistical Application Using Aircraft Maintenance and Repair Data, 6th International Eurasian Conference on Science, Engineering and Technology (EurasianSciEnTech 2025), Ankara, Türkiye, 25-27 June 2025
UYIK2024	Yiğit P., Kurnaz F.S. and Evkaya Ö.O. Investigation Of Marriage-Divorce Pattern Of Turkish Regions Using MCDM And Machine Learning Approaches, V. International Applied Statistic Congress (UYIK-2024) (ICORS 2022), İstanbul, Türkiye, 21 - 23 May 2024, ss.5
UYIK2024	Doğan O.B. and Kurnaz F.S. Crypto Price Similarity: An Investigation Using Cross Correlation, V. International Applied Statistic Congress (UYIK-2024) (ICORS 2022), İstanbul, Türkiye 21 - 23 May 2024, ss.1
ICORS2022	Filzmoser P. and Kurnaz F.S. Robust multinomial regression in high dimensions, International Conference on Robust Statistics (ICORS 2022), Ontario, Canada, 5 - 08 July 2022, ss.20-21
IFCS2022	Kurnaz F.S. and Filzmoser P. Robustified Elastic Net Estimator for Multinomial Regression, The 17th conference of the International Federation of Classification Societies (IFCS 2022), 18 - 23 July 2022, Porto, PORTUGAL.
ISC2019	Kurnaz F.S. and Evkaya O. Drought Monitoring of Marmara Region using Novel Machine Learning Tools 11. International Statistics Days Conference, 4-8 October 2019, Muğla, TÜRKİYE, (Evkaya O. presented).
ISC2019	Kurnaz F.S. The Changes in Last 10 Years of the Marriage and Divorce Statistics Based on Regions of Level1 According Statistical Regional Units Classification (NUTS) in Turkey and Age Groups: Examples 2008 and 2018, 11. International Statistics Days Conference, 4-8 October 2019, Muğla, TÜRKİYE.
IGABGEH19	Tırınk C., Onder H. and Kurnaz F.S. Comparison of Least Square Method, Ridge and Liu Estimators in Saanen Goats, International Congress on Domestics Animal Breeding, Genetics and Husbandry, 11-13 September 2019, Praha, Czech Republic, (Tırınk C. presented).
DMS2019	Filzmoser P., Kurnaz F.S. and Hoffmann I. Robust and Sparse Methods for Regression and Classification in High Dimensions, International Conference on Data Science, Machine Learning and Statistics, 29 June 2019, Van, TÜRKİYE, (Filzmoser P. presented).
IGS2018	Kurnaz F.S.,Outlier Detection and Variable Selection for Count Data, 11. International Statistics Days Conference, 3-7 October 2018, Muğla, TÜRKİYE.
LinStat2018	Kurnaz F.S., Tez M., Comparison of some robust methods in nonlinear regression, The International Conference on Trends and Perspectives in Linear Statistical Inference, 20-24 Ağustos 2018, Poznan, POLAND.
IstKon2017	Ünsal Ü., Kurnaz F.S., Turhan K., Classification of Hepatit Disease Using Support Vector Machines and Decision Tree, 10th International Statistics Congress, 6-8 December 2017, Ankara, TÜRKİYE, (Ünsal Ü. presented).
IstKon2017	Kurnaz F.S., Hoffmann I., Filmzoser P. , Robustified Elastic Net Estimator for Regression and Classification, IstKon2017, 10th International Statistics Congress, 6-8 December 2017, Ankara, TÜRKİYE.
ECDA2017	Kurnaz F. S., Hoffmann I., Filzmoser P., Robust and Sparse Estimation Methods for Linear and Logistic Regression, ECDA2017, European Conference on Data Analysis, 27-29 September 2017, Wroclaw, POLAND.
LinStat2014	Kurnaz F. S., Filzmoser P., A Robust Liu Regression Estimator, Linstat2014, International Conference on Trends and Perspectives in Linear Statistical Inference, 24-28 August 2014, Linköping, SWEDEN.
LinStat2012	Kurnaz F. S., Akay K. U., A New Liu-type estimator, International Conference on Trends and Perspectives in Linear Statistical Inference, 16-20 July 2012, Bedlewo, Poznan, POLAND.
ICEOS2012	Kurnaz F. S., Akay K. U., The Comparisons of some Biased Estimators Include the Two Biasing Parameters, 13th International Conference of Econometrics, Operations Research and Statistics, 24-26 May 2012, Famagusta, KKTC.

Served as a Reviewer

1. Journal of Statistical Computation and Simulation, July, 2024
2. Journal of Statistical Computation and Simulation, April, 2024
3. Computational Statistics - Theory and Methods, December, 2023
4. Journal of Statistical Computation and Simulation, July, 2023
5. Journal of Statistical Computation and Simulation, June, 2023
6. Journal of Statistical Computation and Simulation, December 2022
7. Computational Statistics - Theory and Methods, October 2022
8. Journal of Statistical Computation and Simulation, March 2022
9. Journal of Computational and Applied Mathematics, October 2021
10. Hacettepe Journal of Mathematics and Statistics, August 2021
11. Computational Statistics, May 2021
12. Journal of Computational and Applied Mathematics, January 2021
13. Journal of Statistical Computation and Simulation, November 2020
14. Hacettepe Journal of Mathematics and Statistics, July 2020
15. Journal of Computational and Applied Mathematics, April 2020
16. Statistical Papers, January 2020
17. Journal of Computational and Applied Mathematics, November 2019
18. Journal of Statistical Computation and Simulation, September 2019
19. Journal of Applied Statistics, September 2019
20. Journal of Statistical Computation and Simulation, August 2019
21. Journal of Statistical Computation and Simulation, August 2019
22. Journal of Applied Statistics, March 2019
23. Analytical Methods, February 2019
24. Statistics, Optimization & Information Computing, October 2018
25. Computational Statistics, July, 2018
26. Journal of Engineering Technology and Applied Sciences, April 2018
27. Statistical Papers, May 2015

Certificates, Courses and Trainings

1. Measurement and Evaluation, Öğretim Yeterliliklerinin Geliştirilmesi, Yıldız Teknik Üniversitesi, 2019

2. Personal Evolution, Prof. Dr. Fuat Sezgin Eserlerini Okuma Günleri, İstanbul Üniversitesi, 2019

3. Health & Medicine, İlkyardım Eğitimi, Yıldız Teknik Üniversitesi, 2017 Industrial Rights, Intellectual

4. Property Rights, Patent, Licensing, Bilirkişilik Temel Eğitimi, İstanbul Üniversitesi, 2017

5. Mini-course in Survey sampling and linear models by Prof. Stephen Haslett (Massey University, New Zealand) and Prof. Simo Puntanen (University of Tampere, Finland), (August 23-24, 2014).

6. Education Management and Planning, Araştırmalarda Farkındalık ve Odaklanma, TÜBİTAK, 2012

7. Education Management and Planning, Pedagojik Formasyon, Yıldız Teknik Üniversitesi, 2010

Courses

1. Statistics for Signal Processing, Undergraduade/Postgraduade 2025-2026

2. Basic Statistics for Engineering and Science, Undergraduade, 2025-2026

3. Statistics, Postgraduate, Psychology, 2024-2025

4. Statistics, Postgraduate, Education, 2024-2025

5. Statistics, Postgraduate, Environmental Engineering, 2023-2024

6. Sparse Statistics, Postgraduate, 2024-2025, 2023-2024

7. Robust Statistics, Postgraduate, 2024-2025, 2023-2024, 2022-2023, 2020-2021

8. Stochastic Processes, Undergraduate, 2023-2024, 2022-2023, 2019-2020

9. Robust Statistics with R Programming, Undergraduate, 2024-2025, 2023-2024, 2022-2023, 2020-2021

10. Statistics, Undergraduate, 2023-2024

11. Statistics, Undergraduate, 2023-2024

12. Introduction to Computer Programming, Undergraduate, 2022-2023, 2023-2024, 2024-2025

13. Data Bases, Undergraduate, 2020-2021

14. Probability, Undergraduate, 2020-2021

15. Computer Programming, Postgraduate, 2020-2021, 2023-2024

16. Mathematical Programming for Statistician, Undergraduate, 2020-2021

17. Introduction to Statistics, Undergraduate, 2020-2021, 2019-2020

18. Introduction to Mathematical Statistics, Undergraduate, 2019-2020