Assoc. Prof. CEREN VARDAR ACAR

Personal Information

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International Researcher IDs

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Publons / Web Of Science ResearcherID: AAY-9837-2021
ScopusID: 55616872200
Yoksis Researcher ID: 142337

Education Information

Doctorate, Bowling Green State University, Arts And Science, Mathematics And Statistics, United States Of America 2002 - 2008
Postgraduate, Middle East Technical University, Fen Edebiyat Fakültesi, İstatistik, Turkey 2000 - 2002
Undergraduate, Middle East Technical University, Fen Edebiyat Fakültesi, İstatistik, Turkey 1995 - 1999

Dissertations

Doctorate, On the Correlation of Maximum Loss and Maximum Gain of Stock Price Processes, Bowling Green State University, Department Of Mathematics And Statistics, 2008
Postgraduate, Comparing methods of estimation in experimental design, Orta Doğu Teknik Üniversitesi, Graduate School of Natural and Applied Sciences, İstatistik (Yl) (Tezli), 2002

Research Areas

Probability Theory, Stochastic Processes, Natural Sciences

Academic Titles / Tasks

Associate Professor, Middle East Technical University, Faculty of Arts and Sciences, Department of Statistics, 2020 - Continues
Associate Professor, Diğer (Kurumlar,hastaneler Vb.), Yüksek Öğretim Kurumu, İstatistik, 2017 - Continues
Assistant Professor, Middle East Technical University, Faculty of Arts and Sciences, Department of Statistics, 2018 - 2020
Assistant Professor, Middle East Technical University, Faculty of Arts and Sciences, Department of Statistics, 2015 - 2018
Assistant Professor, Tobb University Of Economics And Technology, Faculty Of Arts And Scıences, Department Of Mathematıcs, 2011 - 2015
Lecturer PhD, Tobb University Of Economics And Technology, Faculty Of Arts And Scıences, Department Of Mathematıcs, 2009 - 2011
Lecturer, Owens Community College, Fen Edebiyat Fakültesi, Matematik Ve İstatistik, 2007 - 2007
Research Assistant, Bowling Green State University, Fen Edebiyat Fakültesi, Matematik Ve İstatistik, 2002 - 2007
Research Assistant, Middle East Technical University, Faculty of Arts and Sciences, Department of Statistics, 2000 - 2002

Academic and Administrative Experience

Tobb Ekonomi Ve Teknoloji Üniversitesi, 2014 - 2015
Tobb Ekonomi Ve Teknoloji Üniversitesi, 2009 - 2011

Courses

Stochastic Processes in Machine Learning, Postgraduate, 2024 - 2025
Stochastic Processes, Undergraduate, 2021 - 2022
PROBABILITY II, Undergraduate, 2017 - 2018
INTRODUCTION TO FINANCIAL ENGINEERING, Undergraduate, 2018 - 2019
ADVANCED PROBABILITY THEORY I, Doctorate, 2018 - 2019
ADVANCED PROBABILITY THEORY II, Doctorate, 2017 - 2018

Advising Theses

Vardar Acar C., QUANTUM RANDOM WALK SIMULATION USING DEPENDENT RANDOM WALK, Postgraduate, M.KAŞİF(Student), 2024
Vardar Acar C., Methodology of identifying super-cycles in silver prices, Postgraduate, T.SOYSAL(Student), 2023
Vardar Acar C., Various parameter estimation techniques for stochastic differential equations, Postgraduate, S.ERGİŞİ(Student), 2019
Vardar Acar C., Parameter estimation in merton jump diffusion model, Postgraduate, T.ADEM(Student), 2019
VARDAR ACAR C., Duration of maximum drawdown in oil prices, Postgraduate, M.SALCI(Student), 2018
VARDAR ACAR C., A generalized correlated random walk approximation to fractional brownian motion, Postgraduate, B.COŞKUN(Student), 2018
VARDAR ACAR C., Stochastic delay differential equations, Postgraduate, E.EZGİ(Student), 2017
VARDAR ACAR C., Kesikli stokastik popülasyon modelleri ve gecikme etkisi, Postgraduate, E.EMİN(Student), 2013
VARDAR ACAR C., Hisse senetlerinde olabilecek en büyük kaybın asimptotik dağılımı uygulamaları, Postgraduate, Z.İSLAMOV(Student), 2013
VARDAR ACAR C., Kesirli brown hareketinin maksimum kayıp ve supremum değişkenleri, Postgraduate, H.ÇAKAR(Student), 2012

Published journal articles indexed by SCI, SSCI, and AHCI

I. **Has the Last Super Cycle in Crude Oil Price Ended? A Maximum Drawdown Approach using Fractional Brownian Motion**
Vardar Acar C., Ünalmış İ., Erdem Küçükbıçakcı F. P.
APPLIED STOCHASTIC MODELS IN BUSINESS AND INDUSTRY, vol.1, no.1, pp.1-22, 2024 (SCI-Expanded)

II. **Stopping Levels for a Spectrally Negative Markov Additive Process**
Çağlar M., Vardar-Acar C.
COMMUNICATIONS IN MATHEMATICS AND STATISTICS, 2024 (SCI-Expanded)

III. **An optimal stopping problem for spectrally negative Markov additive processes**
Çağlar M., Kyprianou A., Vardar Acar C.
Stochastic Processes and their Applications, vol.150, pp.1109-1138, 2022 (SCI-Expanded)

IV. **Maximum Drawdown and Drawdown Duration of Spectrally Negative Levy Processes Decomposed at Extremes**
Vardar Acar C., Caglar M., Avram F.
JOURNAL OF THEORETICAL PROBABILITY, vol.34, no.3, pp.1486-1505, 2021 (SCI-Expanded)

V. **Analysis of Confidence Levels and Application Success Rates in Simulator-Based Dental Anesthesia Education Among Undergraduate Dental Students**
Vural Ç., Bozkurt P., Vardar Acar C., Üçok C.
Journal of Oral and Maxillofacial Surgery, vol.79, no.6, 2021 (SCI-Expanded)

VI. **A study on the discretization of fractional Brownian motion**
COŞKUN B., VARDAR ACAR C., Demirtas H.
AIP Conference Proceedings, vol.2293, 2020 (SCI-Expanded)

VII. **TheW,Zscale functions kit for first passage problems of spectrally negative Levy processes, and applications to control problems**
Avram F., Grahovac D., Vardar Acar C.
ESAIM-PROBABILITY AND STATISTICS, vol.24, pp.454-525, 2020 (SCI-Expanded)

VIII. **Accuracy of two different voxel sizes for presurgical evaluation of mandibular osteotomy**
Bozkurt P., Kurt M., Kolsuz M., Orhan K., Cömert A., Vardar Acar C.
JOURNAL OF STOMATOLOGY ORAL AND MAXILLOFACIAL SURGERY, vol.121, no.2, pp.129-132, 2020 (SCI-Expanded)

IX. **Maximum loss and maximum gain of spectrally negative Lévy processes**
Vardar Acar C., Çağlar M.
EXTREMES, vol.20, no.1, pp.301-308, 2017 (SCI-Expanded)

X. **Anatomy of Correlational Magnitude Transformations in Latency and Discretization Contexts in Monte-Carlo Studies**
Demirtas H., Vardar-Acar C.
MONTE-CARLO SIMULATION-BASED STATISTICAL MODELING, pp.59-84, 2017 (SCI-Expanded)

XI. **Bounds on the expected value of maximum loss of fractional Brownian motion**
Vardar-Acar C., Bulut H.
STATISTICS & PROBABILITY LETTERS, vol.104, pp.117-122, 2015 (SCI-Expanded)

XII. **Estimation of the Hurst parameter for fractional Brownian motion using the CMARS method**
Yerlikaya-Ozkurt F., Vardar-Acar C., Yolcu-Okur Y., Weber G. -.
JOURNAL OF COMPUTATIONAL AND APPLIED MATHEMATICS, vol.259, pp.843-850, 2014 (SCI-Expanded)

XIII. **Distribution of maximum loss of fractional Brownian motion with drift**
Caglar M., Vardar-Acar C.
STATISTICS & PROBABILITY LETTERS, vol.83, no.12, pp.2729-2734, 2013 (SCI-Expanded)

XIV. **On the correlation of the supremum and the infimum and of maximum gain and maximum loss of Brownian motion with drift**
Vardar-Acar C., Zirbel C. L., Szekely G. J.
JOURNAL OF COMPUTATIONAL AND APPLIED MATHEMATICS, vol.248, pp.61-75, 2013 (SCI-Expanded)

XV. **RESULTS ON THE SUPREMUM OF FRACTIONAL BROWNIAN MOTION**
Vardar C.
HACETTEPE JOURNAL OF MATHEMATICS AND STATISTICS, vol.40, no.2, pp.255-264, 2011 (SCI-Expanded)

Articles Published in Other Journals

I. **An Improved Textbook Rule on the Mean-Median Inequality for Discrete Data**
VARDAR ACAR C., Demirtas H., AYDEMİR İ., YABACI A., gao R.
Türkiye Klinikleri Biyoistatistik Dergisi, vol.12, no.2, pp.158-167, 2020 (Peer-Reviewed Journal)

II. **The W,Z/nu,delta Paradigm for the First Passage of Strong Markov Processes without Positive Jumps**
Avram F., Grahovac D., Vardar Acar C.
RISKS, vol.7, no.1, 2019 (ESCI)

III. **COMPARING METHODS OF ESTIMATION IN NON NORMAL SAMPLES**
Vardar Acar C., Islam Q.
PROCEEDINGS OF FIFTH INTERNATIONAL STATISTICAL CONFERENCE, vol.17, pp.7-14, 2009 (Conference Book)

Books & Book Chapters

I. **Anatomy of correlational magnitudetransformations in latency and discretizationcontexts in Monte Carlo studies**
Demirtas H., Vardar Acar C.
in: Monte-Carlo Simulation-Based Statistical ModelingPart of the series ICSA Book Series in Statistics, Ding-Geng (Din) Chen,John Dean Chen, Editor, Springer, New York, pp.59-84, 2017

Refereed Congress / Symposium Publications in Proceedings

I. **A Generalized**
COŞKUN B., Demirtas H., VARDAR ACAR C.
ICNAAM, 23 - 28 September 2019

II. **Maximum Loss of Spectrally Negative Lévy Processes**
VARDAR ACAR C., ÇAĞLAR M.
InternationalWorkshop on Applied Probability, 18 - 21 June 2018

III. **Towards extending the W, Z/ν, δ paradigm for first passage problems ofL´evy processes to strong Markov processes without positive jumps**
VARDAR ACAR C., AVRAM F.
SPA 2018, 11 - 15 June 2018

IV. **A GENERALIZED CORRELATED RANDOM WALK APPROXIMATION TO FRACTIONAL BROWNIANMOTION**
VARDAR ACAR C., COŞKUN B.
4th International Researchers, Statisticians, Young Statisticians Congress, 28 - 30 April 2018

V. **ESTIMATION OF DURATION OF MAXIMUM DRAWDOWN IN OIL PRICES**
SALCI BİLİCİ M., KÜÇÜKBIÇAKCI P., VARDAR ACAR C., ÜNALMIŞ İ.
4th International Researchers, Statisticians and Young Statisticians Congress, 28 - 30 April 2018

VI. **Maximum Loss and Maximum Gain of Spectrally Negative Levy Processes**
VARDAR ACAR C., ÇAĞLAR M.
10th ISC 2017 International Statistics Congress, 6 - 08 December 2017

VII. **A review of the scale functions method for spectrally negative Levy processes**
AVRAM F., ÇAĞLAR M., VARDAR ACAR C.
21st International Congress onInsurance: Mathematics and Economics - IME 2017, 6 - 07 July 2017

VIII. **Stochastic Delay Differential Equations and TheirApplications to Finance**
ALADAĞLI E. E., VARDAR ACAR C., YOLCU OKUR Y.
IV. Kadın Matematikçiler Derneği Çalıştayı, Turkey, 28 - 29 April 2017

IX. **Examination and Parameter estimation of single species Population Models in presence of randomness and delay**
ÖLMEZ S. B., VARDAR ACAR C., YOLCU OKUR Y.
3rd Ankara Istanbul Workshop on Stochastic Processes, Turkey, 16 June 2016

X. **Estimation of the Relation Between the Maximum Loss of Fractional Brownian Motion and Its Duration Using SMARS Method**
VARDAR ACAR C., KARTAL KOÇ E.
APMOD 2016, 8 - 10 June 2016

XI. **Distribution of Maximum Loss of Fractional Brownian Motion with Drift**
VARDAR ACAR C., ÇAĞLAR M.
European Meeting of Statisticians, 6 - 10 July 2015

XII. **On the Supremum Infimum Maximum Gain and Maximum Loss of Brownian Motion**
VARDAR ACAR C., CRAIG Z., GABOR S.
1ST ANKARA-İSTANBUL WORKSHOP ON STOCHASTİC PROCESSES, İstanbul, Turkey, 12 - 13 June 2014, pp.1

XIII. **Distribution of Maximum Loss for Fractional BrownianMotion**
VARDAR ACAR C.
26th European Conference on Operational Research, 1 - 04 July 2013

XIV. **Correlation of Infimum and Supremum of Brownian Motion with drift**
VARDAR ACAR C.
4th Berlin Worhshop on Mathematical Finance for Young Researcher, Berlin, Germany, 11 - 13 October 2012

XV. **On Supremum Infimum Maximum Gain andMaximum Loss of Brownian Motion with driftand of Fractional Brownian Motion**
VARDAR ACAR C., ÇAĞLAR M.
1st AMAT International Conference on Applied Mathematics & Approximation Theory, Ankara, Turkey, 17 - 20 May 2012

XVI. **On the Supremum Infimum Maximum Gain and Maximum Loss of Fractional Brownian Motion**
VARDAR ACAR C., ÇAĞLAR M.
ODTÜ, İstatistik Bölümü Seminer Günleri, Ankara, Turkey, 03 May 2012

XVII. **The Supremum the Infimum Maximum Gain and Maximum Loss of Brownian Motion with Drift**
VARDAR ACAR C.
7th International Congress on Industrial and Applied Mathematics, Vancouver, Canada, 18 - 22 July 2011

XVIII. **On the Supremum the Infimum and Maximum Gain and Maximum Loss of BrownianMotion with Drift**
VARDAR ACAR C.
International Conference on Mathematical Finance and Economics, İstanbul, Turkey, 6 - 08 July 2011, pp.134

XIX. **Supremum Infimum Maximum Gain and Maximum Loss of Brownian Motion with Drift**
VARDAR ACAR C.
24th Mini Euro Conference, İzmir, Turkey, 23 - 26 June 2010

XX. **Kesirli Brown Hareketinde Supremum Dağılımı Üzerine Sonuçlar**
VARDAR ACAR C.
5nci Ankara Matematik Günleri Kongresi, Ankara, Turkey, 3 - 04 June 2010

XXI. **On the Correlation of Maximu Loss and Maximum Gain of Stock Price Processes**
VARDAR ACAR C.
The workshop on Recent Developments in Applied Probability and Statistics, Ankara, Turkey, 23 - 24 April 2009

Supported Projects

Vardar Acar C., Avram F., TÜBİTAK International Bilateral Joint Cooperation Program Project, Levy ve Difüzyon Modelleri Altında Varlık Fiyatlarında En Büyük Düşüş Süresi Dağılımı ve Beklenen Değeri, 2018 - 2020
VARDAR ACAR C., Çağlar M., Project Supported by Higher Education Institutions, Levy Süreçlerinin Yörünge Özellikleri ve En Büyük Kayıp ve En Büyük Kazancın Birlikte Dağılımları, 2016 - 2019
VARDAR ACAR C., TUBITAK Project, KESİRLİ BROWN HAREKETİNDE VE LEVY SÜREÇLERİNDE EN BÜYÜK KAYBIN DAĞILIMSAL ÖZELLİKLERİ, 2011 - 2014

Scientific Refereeing

JOURNAL OF APPLIED PROBABILITY, SCI Journal, May 2020

Metrics

Publication: 40
Citation (WoS): 59
Citation (Scopus): 62

H-Index (WoS): 5
H-Index (Scopus): 5

Invited Talks

(TMLW02) SGD: stability, momentum acceleration and heavy tails, Workshop, University of Cambridge Isaac Newton Institute, England, April 2024

Non Academic Experience

Türk Matematik Derneği
TÜRKİYE İSTATİSTİK KURUMU
TC Merkez Bankası
Tobb Ekonomi ve Teknoloji Üniversitesi
Tobb Ekonomi ve Teknoloji Üniversitesi
Owens Community College
Bowling Green State Üniversitesi
Orta Doğu Teknik Üniversitesi
KALKINMA BAKANLIĞI
Atatürkçü Düşünce Derneği