Prof. ÖMÜR UĞUR

Personal Information

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Biography

Ömür Uğur was born in İstanbul, Turkey, on 8th March, 1971. After completing his elementary and secondary education he was accepted to Uluğbey (Private) High School with scholarship from İstanbul Eğitim ve Kültür (İSTEK) Vakfı.

He started his undergraduate studies at the Department of Mathematics, Middle East Technical University (METU) in 1991 and took his B.S. degree in 1995. At the same time he completed courses in Physics Minor Programme. He became a research assistant at the Department of Mathematics, METU, in the same year, and started his graduate studies. He received his M.Sc. degree in Mathematics in 1998, with a thesis entitled "Hypervirial Analysis of Enclosed Quantum Mechanical Systems", and published his first international article "An Eigenfunction Expansion for the Schrödinger Equation with Arbitrary Non-Central Potentials" in the Journal of Mathematical Chemistry, Vol. 32, No. 4, 2002.

He received his Ph.D. degree in Mathematics, with a thesis entitled "Boundary Value Problems for Higher Order Linear Impulsive Differential Equations", in 2003. After working as a part-time instructor at the Department of Mathematics, METU, for half a year, he received a post-doc position at the Institute of Applied Mathematics (IAM), METU. His first international book "An Introduction to Computational Finance" was published by the Imperial College Press in December 2008.

Presently, he is a member of the faculty at IAM, METU.

Education Information

Doctorate, Middle East Technical University, Graduate School Of Natural And Applied Sciences, Matematik (Dr), Turkey 1998 - 2003
Postgraduate, Middle East Technical University, Graduate School Of Natural And Applied Sciences, Matematik (Yl) (Tezli), Turkey 1995 - 1998
Undergraduate, Middle East Technical University, Faculty Of Arts And Sciences, Department Of Mathematics, Turkey 1991 - 1995

Research Areas

Mathematics, Differential Equations, Functional Equations, Statistics, Probability Theory, Stochastic Processes, Optimization, Numerical Analysis, Natural Sciences

Academic Titles / Tasks

Professor, Middle East Technical University, Institute Of Applied Mathematics, Scientific Computing, 2017 - Continues

Associate Professor, Middle East Technical University, Institute Of Applied Mathematics, Scientific Computing, 2011 - 2017

Academic and Administrative Experience

Director of The Institution, Middle East Technical University, Institute of Applied Mathematics, 2017 - 2020
Middle East Technical University, Institute of Applied Mathematics, Scientific Computing, 2015 - 2017
Middle East Technical University, Institute of Applied Mathematics, Financial Mathematics, 2011 - 2017

Advising Theses

UĞUR Ö., Stochastic modeling of biochemical systems with filtering and smoothing, Postgraduate, M.Haksever(Student), 2019
UĞUR Ö., Modeling fx options in presence of stochastic volatility with overnight-indexed-swap-discounting, Postgraduate, S.Tekten(Student), 2019
Kestel S. A. , Uğur Ö., Comparison of machine learning algorithms on consumer credit classification, Postgraduate, O.KOÇ(Student), 2019
UĞUR Ö., An affine term structure model for Turkish interest rate swap market: do swaps span volatility risk?, Postgraduate, A.Genca(Student), 2019
UĞUR Ö., Sentiment analysis with recurrent neural networks on turkish reviews domain, Postgraduate, D.Rysbek(Student), 2019
UĞUR Ö., KESTEL S. A. , Efficient Simulation and Modelling of Counterparty Credit Risk, Doctorate, A.ALİ(Student), 2018
YÜCEL H., UĞUR Ö., Numerical studies of korteweg-de vries equation with random input data, Postgraduate, M.ALP(Student), 2018
UĞUR Ö., Uncertainty quantification of parameters in local volatility model via frequentist, Bayesian and stochastic Galerkin methods, Doctorate, A.ADINOYI(Student), 2018
UĞUR Ö., Pricing Spread And Basket Options Under Markov-Modulated Models, Doctorate, S.KOZPINAR(Student), 2018
UĞUR Ö., Volatility indexes and an implementation of the Turkish BIST 30 index, Postgraduate, C.KARAKURT(Student), 2018
UĞUR Ö., Optimal control in fluid flow problems with pod applications to FEM solutions, Doctorate, C.EVCİN(Student), 2018
UĞUR Ö., KESTEL S. A. , Stochastic surplus processes with VaR and CVaR simulations in actuarial applications, Postgraduate, M.ŞİMŞEK(Student), 2016
UĞUR Ö., Object-oriented implementation of option pricing via Matlab: Monte Carlo approach, Postgraduate, Ö.TEKİN(Student), 2015
UĞUR Ö., Multiresolution analysis of S&P500 time series, Postgraduate, D.KENAN(Student), 2015
UĞUR Ö., Computational methods for pricing American options, Postgraduate, B.AYDOĞAN(Student), 2014
UĞUR Ö., Modelling and implementation of local volatility surfaces, Postgraduate, A.ANIMOKU(Student), 2014
UĞUR Ö., Simulating stochastic differential equations using ito-taylor schemes, Postgraduate, E.BAYLAN(Student), 2014
UĞUR Ö., Optimal portfolio strategies under various risk measures, Postgraduate, A.MERAL(Student), 2013
UĞUR Ö., Analysis of threshold dynamics of epidemic models in a periodic environment, Postgraduate, C.EVCİN(Student), 2013
UĞUR Ö., Risk measurement, management and option pricing via a new log-normal sum approximation method, Doctorate, S.ZEYTUN(Student), 2012
UĞUR Ö., Stochastic credit default swap pricing, Postgraduate, İ.HAKKI(Student), 2012
UĞUR Ö., An extension to the variational iteration method for systems and higher-order differential equations, Doctorate, D.ALTINTAN(Student), 2011
UĞUR Ö., Pricing and hedging of constant proportion debt obligations, Doctorate, A.İŞCANOĞLU(Student), 2011
KARASÖZEN B., UĞUR Ö., Derivative free multilevel optimization methods, Postgraduate, B.PEKMEN(Student), 2009

UĞUR Ö., Credit risk modeling and credit default swap pricing under Variance Gamma process, Postgraduate, H.ANAR(Student), 2008

UĞUR Ö., An empirical comparison of interest rate models for pricing zero coupon bond options, Postgraduate, H.ŞENTÜRK(Student), 2008

Articles Published in Journals That Entered SCI, SSCI and AHCI Indexes

I. **Time varying control of magnetohydrodynamic duct flow**
Evcin C., UĞUR Ö., Tezer-Sezgin M.
European Journal of Mechanics, B/Fluids, vol.89, pp.100-114, 2021 (Journal Indexed in SCI)

II. **A mathematical model for human-to-human transmission of COVID-19: a case study for Turkey's data**
Cengizci S., Cengizci A. D. , Uğur Ö.
MATHEMATICAL BIOSCIENCES AND ENGINEERING, vol.18, no.6, pp.9787-9805, 2021 (Journal Indexed in SCI)

III. **Controlling the Power-Law Fluid Flow and Heat Transfer Under the External Magnetic Field Using the Flow Index and the Hartmann Number**
Evcin C., UĞUR Ö., Tezer-Sezgin M.
INTERNATIONAL JOURNAL OF COMPUTATIONAL METHODS, vol.17, no.3, 2020 (Journal Indexed in SCI)

IV. **Determining the optimal parameters for the MHD flow and heat transfer with variable viscosity and Hall effect**
Evcin C., Uğur Ö., Tezer-Sezgin M.
COMPUTERS & MATHEMATICS WITH APPLICATIONS, vol.76, pp.1338-1355, 2018 (Journal Indexed in SCI)

V. **Impulsive Expressions in Stochastic Simulation Algorithms**
Altintan D., Purutcuoglu V., UĞUR Ö.
INTERNATIONAL JOURNAL OF COMPUTATIONAL METHODS, vol.15, no.1, 2018 (Journal Indexed in SCI)

VI. **Pricing pension buy-outs under stochastic interest and mortality rates**
ARIK A., Yolcu-Okur Y., ŞAHİN Ş., UĞUR Ö.
SCANDINAVIAN ACTUARIAL JOURNAL, no.3, pp.173-190, 2018 (Journal Indexed in SCI)

VII. **Multiresolution analysis of S&P500 time series**
KILIC D. K. , UĞUR Ö.
ANNALS OF OPERATIONS RESEARCH, vol.260, pp.197-216, 2018 (Journal Indexed in SCI)

VIII. **On the methods of pricing American options: case study**
AYDOGAN B., Aksoy U., UĞUR Ö.
ANNALS OF OPERATIONS RESEARCH, vol.260, pp.79-94, 2018 (Journal Indexed in SCI)

IX. **On the single name CDS price under structural modeling**
GOKGOZ I. H. , UĞUR Ö., Okur Y. Y.
JOURNAL OF COMPUTATIONAL AND APPLIED MATHEMATICS, vol.259, pp.406-412, 2014 (Journal Indexed in SCI)

X. **Pricing formulae for constant proportion debt obligation notes: The Laplace transform technique**
Cekic A. I. , UĞUR Ö.
JOURNAL OF COMPUTATIONAL AND APPLIED MATHEMATICS, vol.259, pp.362-370, 2014 (Journal Indexed in SCI)

XI. **Solution of initial and boundary value problems by the variational iteration method**
Altintan D., UĞUR Ö.
JOURNAL OF COMPUTATIONAL AND APPLIED MATHEMATICS, vol.259, pp.790-797, 2014 (Journal Indexed in SCI)

XII. **Generalisation of the Lagrange multipliers for variational iterations applied to systems of differential equations**
ALTINTAN D., UĞUR Ö.
MATHEMATICAL AND COMPUTER MODELLING, vol.54, pp.2040-2050, 2011 (Journal Indexed in SCI)

XIII. **Variational iteration method for Sturm-Liouville differential equations**
ALTINTAN D., UĞUR Ö.
COMPUTERS & MATHEMATICS WITH APPLICATIONS, vol.58, no.2, pp.322-328, 2009 (Journal Indexed in SCI)

XIV. **On optimization, dynamics and uncertainty: A tutorial for gene-environment networks**
WEBER G. -. , UĞUR Ö., Taylan P., TEZEL A.
DISCRETE APPLIED MATHEMATICS, vol.157, no.10, pp.2494-2513, 2009 (Journal Indexed in SCI)

XV. **An algorithmic approach to analyse genetic networks and biological energy production: an introduction and contribution where OR meets biology**
UĞUR Ö., PICKL S. W. , WEBER G. -. , WUENSCHIERS R.
OPTIMIZATION, vol.58, no.1, pp.1-22, 2009 (Journal Indexed in SCI)

XVI. **Derivative free optimization methods for optimizing stirrer configurations**
UĞUR Ö., Karasoezen B., SCHAEFER M., YAPICI K.
EUROPEAN JOURNAL OF OPERATIONAL RESEARCH, vol.191, no.3, pp.855-863, 2008 (Journal Indexed in SCI)

XVII. **Optimization and dynamics of gene-environment networks with intervals**
Ugur O., Weber G. W.
JOURNAL OF INDUSTRIAL AND MANAGEMENT OPTIMIZATION, vol.3, no.2, pp.357-379, 2007 (Journal Indexed in SCI)

XVIII. **Boundary value problems for higher order linear impulsive differential equations**
Ugur O., AKHMET M.
JOURNAL OF MATHEMATICAL ANALYSIS AND APPLICATIONS, vol.319, no.1, pp.139-156, 2006 (Journal Indexed in SCI)

XIX. **The Sturm-Liouville operator on the space of functions with discontinuity conditions**
Ugur O., Akhmet M. U.
COMPUTERS & MATHEMATICS WITH APPLICATIONS, vol.51, pp.889-896, 2006 (Journal Indexed in SCI)

XX. **Numerical method for optimizing stirrer configurations**
Schafer M., KARASOZEN B., ULUDAĞ Y., YAPICI K., Ugur O.
COMPUTERS & CHEMICAL ENGINEERING, vol.30, no.2, pp.183-190, 2005 (Journal Indexed in SCI)

XXI. **An eigenfunction expansion for the Schrodinger equation with arbitrary non-central potentials**
TASELI H., Erhan I., Ugur O.
JOURNAL OF MATHEMATICAL CHEMISTRY, vol.32, no.4, pp.323-338, 2002 (Journal Indexed in SCI)

Articles Published in Other Journals

I. **Modeling and implementation of local volatility surfaces in Bayesian framework**
Animoku A., UĞUR Ö., Yolcu-Okur Y.
COMPUTATIONAL MANAGEMENT SCIENCE, vol.15, no.2, pp.239-258, 2018 (Journal Indexed in ESCI)

Books & Book Chapters

I. **An Introduction to Computational Finance**
Uğur Ö.
Imperial College Press , Singapore, 2009

Refereed Congress / Symposium Publications in Proceedings

I. **Multi-fidelity aerodynamic dataset generation of a fighter aircraft**
Kurt H. B. , Millidere M., Gomec F. S. , Uğur Ö.
AIAA Science and Technology Forum and Exposition, AIAA SciTech Forum 2021, Virtual, Online, 11 - 15 January 2021, pp.1-28

II. **Kalman based neural network analysis with resampling methods for longitudinal aerodynamic coefficient estimation**

Millidere M., Kurt H. B. , Balli H., Uğur Ö.
AIAA AVIATION 2020 FORUM, Virtual, Online, 15 - 19 June 2020, pp.1-25

III. **Derivative free optimization of stirrer configurations**
Schaefer M., KARASÖZEN B., UĞUR Ö., Yapici K.
6th European Conference on Numberical Mathematics and Advanced Applications (ENUMATH2005), Santiago de Compostela, Spain, 01 July 2005, pp.1031-1033

Supported Projects

UĞUR Ö., TEKİN Ö., ALADAĞLI E. E. , AYDOĞAN B., ENGİNAR O., Project Supported by Higher Education Institutions, Algoritmik Ticaret ve Finansal Araçlar için Gerçek Zamanlı Çalışan Bir Prototip, 2018 - 2019

KESTEL A. S. , AKSU M., KOÇ O., UĞUR Ö., Project Supported by Higher Education Institutions, Bankacılık sektöründe gözetimli öğrenme yaklaşımları kullanılarak kredi riskinin belirlenmesi, 2018 - 2019

UĞUR Ö., TEKİN Ö., EVCİN C., Project Supported by Higher Education Institutions, Türev Araçların Lévy Modeli Altında Monte Carlo Benzetimi ile Fiyatlandırılması, 2017 - 2017

UĞUR Ö., KALAYCI B., ONAK Ö. N. , KARIMOV A., ÖZ H., AKDOĞAN E., Project Supported by Higher Education Institutions, Finansal, Ekonomik ve Bilimsel Süreçlere Ait Sıçramalı Stokastik Hibrit Sistemler: Optimal Kontrol ve Optimizasyon, 2017 - 2017

UĞUR Ö., KESTEL S. A. , ŞİMŞEK M., Project Supported by Higher Education Institutions, Monte Carlo simülasyon teknikleri ile iflas olasılıklarının tahmininde CVaR optimizasyonu, 2016 - 2016

UĞUR Ö., TEKİN Ö., EVCİN C., ÜRETEN M. A. , Project Supported by Higher Education Institutions, Navier-Stokes Denklemleri için Kontrol Problemleri ve Uygulamaları, 2016 - 2016

PURUTÇUOĞLU GAZİ V., Tuncer G., SÜRÜN B., Yazıcı M., AYDIN SON Y., UĞUR Ö., Project Supported by Higher Education Institutions, Biyokimyasal sistemlerin stokastik simülasyon algoritmalarıyla yaratılması ve impuls içerecek şekilde genişletilmesi, 2014 - 2016

UĞUR Ö., EVCİN C., KILIÇ D. K. , Project Supported by Higher Education Institutions, Adveksiyon- ve Reaksiyon-Difuzyon Sistemleri için Optimal Kontrol ve Parametre Tahmin Yöntemleri, 2015 - 2015

YOLCU OKUR Y., UĞUR Ö., KOZPINAR S., ANIMOKU A. A. , Project Supported by Higher Education Institutions, Sıçramalı Difüzyon Süreçleri Varsayımı Altında Bariyer Opsiyonlarının Fiyatlandırılması, 2015 - 2015

UĞUR Ö., TEKİN Ö., YOLCU OKUR Y., Project Supported by Higher Education Institutions, Türev Araçların Lévy Modeli Altında Monte Carlo Benzetimi ile Fiyatlandırılması, 2015 - 2015

Citations

Total Citations (WOS):134
h-index (WOS):8