

Prof. KAĞAN GÖKBAYRAK

Personal Information

Email: kagangokbayrak@hacettepe.edu.tr

Web: <https://avesis.hacettepe.edu.tr/kagangokbayrak>

International Researcher IDs

ORCID: 0000-0001-7651-1702

Publons / Web Of Science ResearcherID: A-6470-2019

ScopusID: 6603266166

Yoksis Researcher ID: 160383

Education Information

Doctorate, Boston University, Engineering, Manufacturing Engineering, United States Of America 1997 - 2001

Postgraduate, University of Massachusetts Amherst, Engineering, Electrical and Computer Engineering, United States Of America 1995 - 1997

Undergraduate Double Major, Bogazici University, Faculty Of Arts And Sciences, Department Of Mathematics, Turkey 1990 - 1995

Undergraduate Double Major, Bogazici University, Faculty Of Engineering, Department Of Electrical And Electronics Engineering, Turkey 1990 - 1995

Research Areas

Stochastic Modeling, Queueing Theory and Applications, Stochastic Processes, Nonlinear Programming, Linear Programming, Heuristic Methods, Integer and Mixed Integer Programming, Simulation, Simulation Optimization, Discrete Simulation, System Dynamics, Inventory Systems, Facility Location and Design, Network Design

Academic Titles / Tasks

Professor, Hacettepe University, Mühendislik Fakültesi, Endüstri Mühendisliği Bölümü, 2019 - Continues

Lecturer PhD, Ihsan Dogramaci Bilkent University, Faculty Of Engineering, Department Of Industrial Engineering, 2003 - 2019

Advising Theses

Gökbayrak K., Nadar E., Optimal structural results for average-cost inventory systems with partially observed Markov-modulated demand,, Postgraduate, H.Avcı(Student), 2018

Gökbayrak K., Nadar E., Perturbation analysis methods for inventory systems with partially- observed Markov-modulated demand, Postgraduate, S.Güleçyüz(Student), 2018

Gökbayrak K., Kocaman A. S., A two-level network design problem with decentralized and centralized intermediate facilities, Postgraduate, E.Buğday(Student), 2017

Gökbayrak K., Yıldırım E. A., Solution methods for planning problems in wireless mesh networks, Postgraduate, G.Özdemir(Student), 2012

Gökbayrak K., Yıldırım E. A., Joint routing, gateway selection, scheduling, and power management optimization in

wireless mesh networks, Postgraduate, O.Uzunlar(Student), 2011

Gökbayrak K., Finite perturbation analysis methods for optimization of periodic (s,S) inventory control systems, Postgraduate, E.Mert(Student), 2008

Gökbayrak K., Service time optimization of flow shop systems, Doctorate, Ö.SELVİ(Student), 2008

Published journal articles indexed by SCI, SSCI, and AHCI

- I. **A two-level off-grid electric distribution problem on the continuous space**
GÖKBAYRAK K.
COMPUTERS & OPERATIONS RESEARCH, vol.144, 2022 (SCI-Expanded)
- II. **A voltage drop limited decentralized electric power distribution network**
GÖKBAYRAK K., Avci H.
COMPUTERS & OPERATIONS RESEARCH, vol.118, 2020 (SCI-Expanded)
- III. **Structural Results for Average-Cost Inventory Models with Markov-Modulated Demand and Partial Information**
Avci H., Gokbayrak K., Nadar E.
PRODUCTION AND OPERATIONS MANAGEMENT, vol.29, no.1, pp.156-173, 2020 (SCI-Expanded)
- IV. **Robust gateway placement in wireless mesh networks**
Gokbayrak K.
COMPUTERS & OPERATIONS RESEARCH, vol.97, pp.84-95, 2018 (SCI-Expanded)
- V. **A distance-limited continuous location-allocation problem for spatial planning of decentralized systems**
Gokbayrak K., Kocaman A. S.
COMPUTERS & OPERATIONS RESEARCH, vol.88, pp.15-29, 2017 (SCI-Expanded)
- VI. **Exact and heuristic approaches based on noninterfering transmissions for joint gateway selection, time slot allocation, routing and power control for wireless mesh networks**
Gokbayrak K., Yildirim E. A.
COMPUTERS & OPERATIONS RESEARCH, vol.81, pp.102-118, 2017 (SCI-Expanded)
- VII. **Joint gateway selection, transmission slot assignment, routing and power control for wireless mesh networks**
Gokbayrak K., Yildirim E. A.
COMPUTERS & OPERATIONS RESEARCH, vol.40, no.7, pp.1671-1679, 2013 (SCI-Expanded)
- VIII. **State-dependent Control of a Single Stage Hybrid System with Poisson Arrivals**
Gokbayrak K.
DISCRETE EVENT DYNAMIC SYSTEMS-THEORY AND APPLICATIONS, vol.21, no.4, pp.577-592, 2011 (SCI-Expanded)
- IX. **Receding Horizon Control of Mixed Line Flow Shop Systems**
Gokbayrak K.
DISCRETE EVENT DYNAMIC SYSTEMS-THEORY AND APPLICATIONS, vol.21, no.1, pp.1-10, 2011 (SCI-Expanded)
- X. **A search method for optimal control of a flow shop system of traditional machines**
Selvi O., Gokbayrak K.
EUROPEAN JOURNAL OF OPERATIONAL RESEARCH, vol.205, no.2, pp.325-331, 2010 (SCI-Expanded)
- XI. **Service Time Optimization of Mixed-Line Flow Shop Systems**
Gokbayrak K., Selvi O.
IEEE TRANSACTIONS ON AUTOMATIC CONTROL, vol.55, no.2, pp.395-404, 2010 (SCI-Expanded)
- XII. **A Subgradient Descent Algorithm for Optimization of Initially Controllable Flow Shop Systems**
Gokbayrak K., Selvi O.
DISCRETE EVENT DYNAMIC SYSTEMS-THEORY AND APPLICATIONS, vol.19, no.2, pp.267-282, 2009 (SCI-Expanded)
- XIII. **Optimization of a Flow Shop System of Initially Controllable Machines**

- Gokbayrak K., Selvi O.
IEEE TRANSACTIONS ON AUTOMATIC CONTROL, vol.53, no.11, pp.2665-2668, 2008 (SCI-Expanded)
- XIV. **Constrained optimal hybrid control of a flow shop system**
Gokbayrak K., Selvi O.
IEEE TRANSACTIONS ON AUTOMATIC CONTROL, vol.52, no.12, pp.2270-2281, 2007 (SCI-Expanded)
- XV. **Generalized surrogate problem methodology for online stochastic discrete optimization**
Gokbayrak K., Cassandras C.
JOURNAL OF OPTIMIZATION THEORY AND APPLICATIONS, vol.114, no.1, pp.97-132, 2002 (SCI-Expanded)
- XVI. **Adaptive call admission control in circuit-switched networks**
Gokbayrak K., Cassandras C.
IEEE TRANSACTIONS ON AUTOMATIC CONTROL, vol.47, no.6, pp.1004-1015, 2002 (SCI-Expanded)
- XVII. **Online surrogate problem methodology for stochastic discrete resource allocation problems**
Gokbayrak K., Cassandras C.
JOURNAL OF OPTIMIZATION THEORY AND APPLICATIONS, vol.108, no.2, pp.349-376, 2001 (SCI-Expanded)
- XVIII. **Hybrid controllers for hierarchically decomposed systems**
Gokbayrak K., Cassandras C.
HYBRID SYSTEMS: COMPUTATION AND CONTROL, vol.1790, pp.117-129, 2000 (SCI-Expanded)

Refereed Congress / Symposium Publications in Proceedings

- I. **Escaping Local Optima in a Class of Multi-Agent Distributed Optimization Problems: A Boosting Function Approach**
Sun X., Cassandras C. G., Gokbayrak K.
53rd IEEE Annual Conference on Decision and Control (CDC), Los-Angeles, Chile, 15 - 17 December 2014, pp.3701-3706
- II. **Optimal hybrid control of a two-stage manufacturing system**
Gokbayrak K., Selvi O.
American Control Conference 2006, Minnesota, United States Of America, 14 - 16 June 2006, pp.3364-3369
- III. **Optimal control of a two-stage stochastic hybrid manufacturing system with Poisson arrivals and exponential service times**
Gokbayrak K., Selvi O.
44th IEEE Conference on Decision Control/European Control Conference (CCD-ECC), Sevilla, Spain, 12 - 15 December 2005, pp.6940-6945
- IV. **Optimal control of single-stage hybrid systems with Poisson arrivals and deterministic service times**
Gokbayrak K., Misirci M.
Joint Conference of the 20th IEEE International Symposium on Intelligent Control/13th Mediterranean Conference on Control and Automation, Limassol, CYPRUS, 27 - 28 June 2005, pp.1315-1320
- V. **Optimal control for discrete event and hybrid systems**
Cassandras C., Gokbayrak K.
Symposium on Modeling, Control and Optimization of Complex Systems, Cambridge, Canada, 23 - 24 June 2001, vol.14, pp.285-304
- VI. **Modeling and agile control for a Joint Air Operation environment**
Cassandras C., Gokbayrak K., Castanon D., Wohletz J., Curry M., Gates M.
5th Enabling Technology for Simulation Science Conference, Florida, United States Of America, 17 - 20 April 2001, vol.4367, pp.330-341
- VII. **A hierarchical decomposition method for optimal control of hybrid systems**
Gokbayrak K., Cassandras C.
39th IEEE Conference on Decision and Control, Sydney, Australia, 12 - 15 December 2000, pp.1816-1821
- VIII. **Modeling and simulation-based solutions for complex resource allocation problems**
Cassandras C., Gokbayrak K.

Supported Projects

Gökbayrak K., Dinler D., TUBITAK Project, Sürekli Düzlemsel Uzayda Şebekeye Bağlı Olmayan İki Seviyeli Elektrik Dağıtım Ağı Tasarımı, 2021 - 2024

Gökbayrak K., Nadar E., TUBITAK Project, Hidden Markov model and perturbation analysis applications in inventory control, 2015 - 2017

Gökbayrak K., Yıldırım E. A., TUBITAK Project, Multi-Objective Optimization Based Solution Methods for Planning and Operational Problems of Wireless Mesh Networks, 2010 - 2012

Metrics

Publication: 26

Citation (WoS): 195

Citation (Scopus): 188

H-Index (WoS): 9

H-Index (Scopus): 10

Non Academic Experience

Genuity, Inc.