Prof. ALİ FUAT ALKAYA

Personal Information

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International Researcher IDs
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Biography

Ali Fuat Alkaya received his B.Sc. degree in Mathematics with full scholarship from Koc University in İstanbul, Turkey, his M.Sc. degree in Computer Science and Engineering and his Ph.D. degree in Engineering Management from Marmara University, Istanbul, Turkey. Throughout his graduate studies, he worked as a research assistant in Computer Science and Engineering department at Marmara University. After his Ph.D., he worked at Johns Hopkins University as a postdoctoral researcher. He is currently a Professor of Computer Science and Engineering at Marmara University. His research interests are in combinatorial optimization, algorithm design and analysis, heuristics and metaheuristics, machine learning and artificial intellligence.

Education Information

Doctorate, Marmara University, Institute for Graduate Studies in Pure and Applied Sciences, Mühendislik Yönetimi (Dr), Turkey 2003 - 2009
Postgraduate, Marmara University, Institute for Graduate Studies in Pure and Applied Sciences, Bilgisayar Mühendisliği (Yl) (Tezli), Turkey 1998 - 2003
Undergraduate, Koc University, Faculty Of Science, Department Of Mathematics, Turkey 1994 - 1998

Foreign Languages

English, C2 Mastery

Dissertations

Doctorate, Optimizing the operations of electronic component placement machines, Marmara Üniversitesi, Institute for Graduate Studies in Pure and Applied Sciences, Mühendislik Yönetimi (Dr), 2009
Postgraduate, Task Scheduling Techniques for Arbitrary Network Topologies, Marmara Üniversitesi, Institute for Graduate Studies in Pure and Applied Sciences, Bilgisayar Mühendisliği (Yl) (Tezli), 2003

Research Areas

Computer Sciences, algorithms, Complexity Theory, Artificial Intelligence, Computer Learning and Pattern Recognition,

Evolutionary Computing, Neural Networks, Optimization Theory and Methods, Paving Theory and Applications, Multiobjective Optimization, Nonlinear Programming, Linear Programming, Global Optimization, Heuristic Methods, Multi Criteria Decision Making, Engineering and Technology

Academic Titles / Tasks

Professor, Marmara University, Faculty of Engineering, Computer Engineering, 2021 - Continues
Researcher, The University of Nottingham, School of Computer Science, 2022 - 2023
Associate Professor, Marmara University, Faculty of Engineering, Computer Engineering, 2016 - 2021
Assistant Professor, Marmara University, Faculty of Engineering, Computer Engineering, 2009 - 2016
Researcher, Johns Hopkins University, Applied Math and Statistics, 2011 - 2012
Research Assistant, Marmara University, Faculty of Engineering, Computer Engineering, 1998 - 2009

Academic and Administrative Experience

Fakülte Kurulu Üyesi, Marmara University, Faculty of Engineering, Computer Engineering, 2018 - 2021
Fakülte Yönetim Kurulu Üyesi, Marmara University, Faculty of Engineering, Computer Engineering, 2018 - 2021
Marmara University, Faculty of Engineering, 2011 - 2012

Courses

Data Mining, Postgraduate, 2021 - 2022
Operations Research, Undergraduate, 2020 - 2021, 2019 - 2020, 2018 - 2019
Graph Theory, Doctorate, 2020 - 2021
Introduction to Programming II, Undergraduate, 2021 - 2022, 2016 - 2017, 2015 - 2016, 2014 - 2015, 2013 - 2014, 2012 - 2013, 2010 - 2011, 2009 - 2010, 2008 - 2009, 2007 - 2008, 2006 - 2007, 2005 - 2006, 2004 - 2005, 2003 - 2004, 2002 - 2003
Discrete Computational Structures, Undergraduate, 2021 - 2022, 2020 - 2021, 2019 - 2020, 2018 - 2019, 2017 - 2018
Data Communications and Computer Networks, Postgraduate, 2020 - 2021, 2019 - 2020, 2018 - 2019
Mobile Device Programming, Undergraduate, 2021 - 2022, 2020 - 2021, 2019 - 2020, 2018 - 2019, 2017 - 2018, 2016 - 2017, 2015 - 2016, 2014 - 2015, 2013 - 2014
Mathematics for Computer Science, Postgraduate, 2019 - 2020, 2018 - 2019, 2017 - 2018, 2014 - 2015, 2013 - 2014, 2012 - 2013
Data Mining Techniques, Postgraduate, 2019 - 2020, 2018 - 2019
Linear Algebra, Undergraduate, 2017 - 2018, 2016 - 2017, 2015 - 2016, 2014 - 2015
Introduction to Programming I, Undergraduate, 2016 - 2017, 2015 - 2016, 2014 - 2015, 2013 - 2014, 2012 - 2013, 2010 - 2011, 2009 - 2010, 2008 - 2009, 2007 - 2008, 2006 - 2007, 2005 - 2006, 2004 - 2005, 2003 - 2004, 2002 - 2003

Advising Theses

Alkaya A. F., Swarm intelligence algorithms for prize collecting traveling salesman problem with time windows, Postgraduate, O.DOĞAN(Student), 2021
Alkaya A. F., Analyzing the impact of political tweets on exchange rates, Postgraduate, A.ALKAN(Student), 2021
Alkaya A. F., Stochastic Path Planning in the Presence of Disambiguation and Neutralization Capabilities, Doctorate, S.YILDIRIM(Student), 2019
Alkaya A. F., Application of metaheuristics for the feature selection problem, Postgraduate, G.KALAYCI(Student), 2019
ALKAYA A. F., Comparison of computational intelligence models on forecasting ATM demands, Postgraduate, O.Gürkan(Student), 2019

ALKAYA A. F., Any angle path finding in stochastic obstacle scenes, Postgraduate, U.Aslan(Student), 2019

ALKAYA A. F., Application of meta-heuristics on ATM cash withdrawal forecasting, Postgraduate, E.Danacı(Student), 2019

ALKAYA A. F., Application of data mining on medical diagnosis, Postgraduate, M.AIHAITI(Student), 2017

ALKAYA A. F., Metaheuristic methods for the obstacle neutralization problem, Postgraduate, R.ALGIN(Student), 2016

ALKAYA A. F., Path planning for ships in the presence of obstacles, Doctorate, D.ÖZ(Student), 2015

ALKAYA A. F., Solution Approaches for Sequence Dependent Traveling Salesman Problem, Postgraduate, S.TONYALI(Student), 2013

Jury Memberships

Post Graduate, Post Graduate, İstanbul Şehir Üniversitesi, August, 2019

Doctorate, Doctorate, Özyeğin Üniversitesi, July, 2019

PhD Thesis Monitoring Committee Member, PhD Thesis Monitoring Committee Member, İstanbul Teknik Üniversitesi, June, 2019

Published journal articles indexed by SCI, SSCI, and AHCI

I. **Enhanced migrating birds optimization algorithm for optimization problems in different domains**
Algin R., ALKAYA A. F., AĞAOĞLU M.
Annals of Operations Research, 2024 (SCI-Expanded)

II. **An investigation of nature inspired algorithms on a particular vehicle routing problem in the presence of shift assignment**
ALP G., ALKAYA A. F.
COMPUTERS & OPERATIONS RESEARCH, vol.141, 2022 (SCI-Expanded)

III. **Hyperheuristic Based Migrating Birds Optimization Algorithm for a Fairness Oriented Shift Scheduling Problem**
Alp G., ALKAYA A. F.
MATHEMATICAL PROBLEMS IN ENGINEERING, vol.2021, 2021 (SCI-Expanded)

IV. **Heuristics for the Canadian traveler problem with neutralizations**
ALKAYA A. F., Yildirim S., Aksakalli V.
COMPUTERS & INDUSTRIAL ENGINEERING, vol.159, 2021 (SCI-Expanded)

V. **Feature selection via computational intelligence techniques**
Algin R., ALKAYA A. F., AĞAOĞLU M.
JOURNAL OF INTELLIGENT & FUZZY SYSTEMS, vol.39, no.5, pp.6205-6216, 2020 (SCI-Expanded)

VI. **Comparison of Computational Intelligence Models on Forecasting Automated Teller Machine Cash Demands**
ALKAYA A. F., Gultekin O. G., Danaci E., Duman E.
JOURNAL OF MULTIPLE-VALUED LOGIC AND SOFT COMPUTING, vol.35, pp.167-193, 2020 (SCI-Expanded)

VII. **Canadian Traveler Problem with Neutralizations**
YILDIRIM S., Aksakalli V., ALKAYA A. F.
EXPERT SYSTEMS WITH APPLICATIONS, vol.132, pp.151-165, 2019 (SCI-Expanded)

VIII. **Preface: 13th Cologne-Twente Workshop on Graphs and Combinatorial Optimization (CTW 2015)**
DUMAN E., ALKAYA A. F., Pickl S., Faigle U.
DISCRETE APPLIED MATHEMATICS, vol.252, pp.1, 2019 (SCI-Expanded)

IX. **AN OPTIMAL ALGORITHM FOR THE OBSTACLE NEUTRALIZATION PROBLEM**
ALKAYA A. F., Oz D.
JOURNAL OF INDUSTRIAL AND MANAGEMENT OPTIMIZATION, vol.13, no.2, pp.835-856, 2017 (SCI-Expanded)

X. **OPTIMAL NAVAL PATH PLANNING IN ICE-COVERED WATERS**

Aksakalli V., Oz D., Alkaya A. F., Aydogdu V.

INTERNATIONAL JOURNAL OF MARITIME ENGINEERING, vol.159, pp.63-75, 2017 (SCI-Expanded)

XI. **An anchorage planning strategy with safety and utilization considerations**

Oz D., AKSAKALLI V., ALKAYA A. F., Aydogdu V.

COMPUTERS & OPERATIONS RESEARCH, vol.62, pp.12-22, 2015 (SCI-Expanded)

XII. **Combining and solving sequence dependent traveling salesman and quadratic assignment problems in PCB assembly**

ALKAYA A. F., DUMAN E.

DISCRETE APPLIED MATHEMATICS, vol.192, pp.2-16, 2015 (SCI-Expanded)

XIII. **Metaheuristic based solution approaches for the obstacle neutralization problem**

ALKAYA A. F., Algin R.

EXPERT SYSTEMS WITH APPLICATIONS, vol.42, no.3, pp.1094-1105, 2015 (SCI-Expanded)

XIV. **A penalty search algorithm for the obstacle neutralization problem**

ALKAYA A. F., AKSAKALLI V., Priebe C. E.

COMPUTERS & OPERATIONS RESEARCH, vol.53, pp.165-175, 2015 (SCI-Expanded)

XV. **Application of Sequence-Dependent Traveling Salesman Problem in Printed Circuit Board Assembly**

ALKAYA A. F., DUMAN E.

IEEE TRANSACTIONS ON COMPONENTS PACKAGING AND MANUFACTURING TECHNOLOGY, vol.3, no.6, pp.1063-1076, 2013 (SCI-Expanded)

XVI. **MINIMIZING MACHINE CHANGEOVER TIME IN PRODUCT LINE IN AN APPAREL INDUSTRY**

KENTLİ A., Dal V., ALKAYA A. F.

TEKSTIL VE KONFEKSIYON, vol.23, no.2, pp.159-167, 2013 (SCI-Expanded)

XVII. **Migrating Birds Optimization: A new metaheuristic approach and its performance on quadratic assignment problem**

DUMAN E., Uysal M., ALKAYA A. F.

INFORMATION SCIENCES, vol.217, pp.65-77, 2012 (SCI-Expanded)

XVIII. **A NEW GENERALIZATION OF THE TRAVELING SALESMAN PROBLEM**

ALKAYA A. F., DUMAN E.

APPLIED AND COMPUTATIONAL MATHEMATICS, vol.9, no.2, pp.162-175, 2010 (SCI-Expanded)

XIX. **Scheduling continuous aluminium casting lines**

DUMAN E., Yildirim M. B., ALKAYA A. F.

INTERNATIONAL JOURNAL OF PRODUCTION RESEARCH, vol.46, no.20, pp.5701-5718, 2008 (SCI-Expanded)

XX. **A task scheduling algorithm for arbitrarily-connected processors with awareness of link contention**

Alkaya A. F., Topcuoglu H. R.

CLUSTER COMPUTING-THE JOURNAL OF NETWORKS SOFTWARE TOOLS AND APPLICATIONS, vol.9, no.4, pp.417-431, 2006 (SCI-Expanded)

Articles Published in Other Journals

I. **Improving the Quality of Personnel Scheduling by Incorporating Fairness**

ALP G., ALKAYA A. F.

International Journal of Modeling and Optimization, 2020 (Peer-Reviewed Journal)

Refereed Congress / Symposium Publications in Proceedings

I. **A Novel Framework for Multi-objective Optimization Problems**

Alp G., ALKAYA A. F.

14th International Conference on Soft Computing and Pattern Recognition, SoCPaR 2022, and the 14th World Congress on Nature and Biologically Inspired Computing, NaBIC 2022, Virtual, Online, 14 - 16 December 2022,

vol.648 LNNS, pp.690-699

II. **Performance of Simultaneous Perturbation Stochastic Approximation for Feature Selection**
Algin R., ALKAYA A. F., AĞAOĞLU M.
International Conference on Intelligent and Fuzzy Systems, INFUS 2022, İzmir, Turkey, 19 - 21 July 2022, vol.505 LNNS, pp.348-354

III. **Currency Exchange Rate Forecasting with Social Media Sentiment Analysis**
Alkan A., ALKAYA A. F., SCHUELLER P.
International Conference on Intelligent and Fuzzy Systems, İstanbul, Turkey, 24 August 2021

IV. **A Novel Method for Prize Collecting Traveling Salesman Problem with Time Windows**
DOĞAN O., ALKAYA A. F.
International Conference on Intelligent and Fuzzy Systems, İstanbul, Turkey, 24 August 2021

V. **A Comparison of Swarm Intelligence Algorithms Exploiting a Novel Neighbour Generation Technique**
ALP G., ALKAYA A. F.
International Conference on Soft Computing and Pattern Recognition, SoCPaR 2020, Japan, 15 - 18 December 2020

VI. **Any Angle Path Finding in Stochastic Obstacle Scenes**
Aslan U., ALKAYA A. F., Yıldırım S., AKSAKALLI V.
The 3rd International Conference on Advances in Artificial Intelligence (ICAAI 2019), 26 - 28 October 2019

VII. **Exploitation and Comparison of Computational Intelligence Techniques on the Feature Selection Problem**
Kalayci G., ALKAYA A. F., ALGIN R.
The International Conference on Intelligent and Fuzzy Systems (INFUS 2019), 23 - 25 July 2019

VIII. **An Empirical Analysis of Swarm Intelligence Techniques on ATM Cash Withdrawal Forecasting**
Danaci E., ALKAYA A. F., Gültekin O. G.
The International Conference on Intelligent and Fuzzy Systems (INFUS 2019), 23 - 25 July 2019

IX. **Hybridization of Migrating Birds Optimization with Simulated Annealing**
ALGIN R., ALKAYA A. F., AKSAKALLI V.
International Conference on Hybrid Intelligent Systems (HIS 2018), 13 - 15 December 2018

X. **Optimizing Cellular Networks for Adaptive Video Streaming**
ALKAYA A. F., Demir T., GÖRKEMLİ B., Tatlıcıoğlu S.
International Conference on Advanced Technologies, Computer Engineering and Science (ICATCES'18), 11 - 13 May 2018

XI. **An Empirical Comparison of Data Mining Tools and Migrating Birds Optimization Algorithm on Medical Diagnosis**
Aihaiti M., ALKAYA A. F., ALGIN R.
International Conference on Advanced Technologies, Computer Engineering and Science (ICATCES'18), 11 - 13 May 2018

XII. **Performance Evaluation of an Exact Method for the Obstacle Neutralization Problem**
ALKAYA A. F., ALGIN R., ÖZ D., Ceyhan E., AKSAKALLI V.
IEOM 2016, 8 - 10 March 2016

XIII. **Disambiguation Points Sampling Heuristic for the Stochastic Obstacle Scene Problem**
Yıldırım S., AKSAKALLI V., ALKAYA A. F.
IEOM, 8 - 10 March 2016

XIV. **Solving the Obstacle Neutralization Problem Using Swarm Intelligence Algorithms**
Algin R., ALKAYA A. F.
7th International Conference of Soft Computing and Pattern Recognition (SoCPaR), Fukuoka, Japan, 13 - 15 November 2015, pp.187-192

XV. **Capacity Planning in Non-uniform Depth Anchorages**
Malekipirbazari M., Oz D., AKSAKALLI V., ALKAYA A. F., Aydogdu V.
7th KES International Conference on Intelligent Decision Technologies (KES-IDT), Sorrento, Italy, 17 - 19 June 2015, vol.39, pp.21-30

XVI. **Performance Comparison of Metaheuristics for the Obstacle Neutralization Problem**

ALGIN R., ALKAYA A. F., AKSAKALLI V.

CTW2015 The Cologne-Twente Workshop on Graphs and Combinatorial Optimization, 26 - 28 May 2015

XVII. **Developing an Exact Method for the Obstacle Neutralization Problem**

ÖZ D., ALKAYA A. F., AKSAKALLI V.

CTW2015 The Cologne-Twente Workshop on Graphs and Combinatorial Optimization, 26 - 28 May 2015

XVIII. **Application of Recently Proposed Metaheuristics to the Sequence Dependent TSP**

Tonyali S., ALKAYA A. F.

3rd International Conference on Computer Science, Applied Mathematics and Applications (ICCSAMA), Metz, France, 11 - 13 May 2015, vol.358, pp.83-94

XIX. **Path Planning for Ships Using Large Adjacency Grids**

AKSAKALLI V., ALKAYA A. F., ÖZ D.

Proceedings of the 2015 International Conference on Industrial Engineering and Operations Management, 3 - 05 March 2015

XX. **Performance of Migrating Birds Optimization Algorithm on Continuous Functions**

ALKAYA A. F., Algin R., Sahin Y., AĞAOĞLU M., AKSAKALLI V.

5th International Conference on Swarm Intelligence (ICSI), Hefei, China, 17 - 20 October 2014, vol.8795, pp.452-459

XXI. **An Ant System Algorithm for the Neutralization Problem**

Algin R., ALKAYA A. F., AKSAKALLI V., Oz D.

12th International Work-Conference on Artificial Neural Networks (IWANN), Puerto-La-Cruz, Venezuela, 12 - 14 June 2013, vol.7903, pp.53-54

XXII. **Migrating Birds Optimization: A New Meta-heuristic Approach and Its Application to the Quadratic Assignment Problem**

Duman E., Uysal M., ALKAYA A. F.

Conference on EvoApplications 2011: EvoCOMPLEX, EvoGAMES, EvoIASP, EvoINTELLIGENCE, EvoNUM, AND EvoSTOC, Torino, Italy, 27 - 29 April 2011, vol.6624, pp.254-257

XXIII. **Application of One Class Support Vector Machine Algorithms to Health Insurance Fraud Detection**

ŞAHİN Y., AŞUK C., AĞAOĞLU M., ALKAYA A. F.

7th International Symposium on Intelligent and Manufacturing Systems, Sarajevo, Bosnia And Herzegovina, 15 - 17 September 2010, pp.523-532

XXIV. **A Literature Survey of the Operation Optimization in Chip Shooter Placement Machines**

ALKAYA A. F., DUMAN E.

Conference of the Portland-International-Center-for-Management-of-Engineering-and-Technology (PICMET 2009), Oregon, United States Of America, 2 - 06 August 2009, pp.3205-3207

XXV. **Assembly time minimization of a particular placement machine**

ALKAYA A. F., DUMAN E.

12th WSEAS International Conference on APPLIED MATHEMATICS, Cairo, Egypt, 29 - 31 December 2007, pp.383-384

Supported Projects

Alkaya A. F., Alp G., Project Supported by Higher Education Institutions, Optimizing the Vehicle Routes in the Presence of Shift Management, 2017 - 2020

Alkaya A. F., Project Supported by Higher Education Institutions, Exploitation of Metaheuristic Techniques on the Feature Selection Problem, 2019 - 2019

Alkaya A. F., TUBITAK Project, Developing exact and heuristic solution methods for the combined solution of obstacle neutralization and random disambiguation problems, 2015 - 2019

Alkaya A. F., TUBITAK Project, Development and application of an exact solution method and metaheuristics to the neutralization problem, 2015 - 2017

Alkaya A. F., Project Supported by Higher Education Institutions, Application and comparison of metaheuristic based

solution methods for a generalization of the traveling salesman problem, 2013 - 2016

Alkaya A. F., Ağaoğlu M., Project Supported by Higher Education Institutions, Mobile Application Development Laboratory, 2013 - 2016

Alkaya A. F., Project Supported by Higher Education Institutions, Path Planning for Ships in the Presence of Obstacles, 2014 - 2015

Alkaya A. F., Project Supported by Higher Education Institutions, Solution approaches for the sequence dependent traveling salesman problem, 2013 - 2015

Alkaya A. F., Taçgın E., TUBITAK Project, Multibody System Dynamics Modeling and Performance Evaluation of Electrical Locomotives, 2011 - 2014

Alkaya A. F., Duman E., TUBITAK Project, Optimization of Electronic Assembly Operations and Sequence Dependent Traveling Salesman Problem, 2008 - 2010

Activities in Scientific Journals

Discrete Applied Mathematics, Special Issue Editor, 2015 - 2018

Scientific Refereeing

SOFT COMPUTING, Journal Indexed in SCI-E, January 2019

JOURNAL OF EXPERIMENTAL & THEORETICAL ARTIFICIAL INTELLIGENCE, Journal Indexed in SCI-E, October 2018

IEEE TRANSACTIONS ON AUTOMATION SCIENCE AND ENGINEERING, Journal Indexed in SCI-E, August 2018

INTERNATIONAL JOURNAL OF PRODUCTION RESEARCH, Journal Indexed in SCI-E, July 2018

SOFT COMPUTING, Journal Indexed in SCI-E, October 2017

TUBITAK Project, 3001 - Initial R&D Projects Support Program, Marmara University, Turkey, December 2016

Scientific Consultations

İsnet İstanbul Net Telekomünikasyon Elektronik Servis Hizmetleri Tic. ve San. A.Ş., Project Consultancy, Marmara University, Faculty of Engineering, Computer Engineering, Turkey, 2020 - Continues

NetBT Danışmanlık Hizmetleri A.Ş., Project Consultancy, Marmara University, Faculty of Engineering, Computer Engineering, Turkey, 2021 - 2021

CRENNO Bilişim Hizmetleri Ar-Ge San. Tic Ltd. Şti. , Project Consultancy, Marmara University, Faculty of Engineering, Computer Engineering, Turkey, 2020 - 2021

BİTEK, Project Consultancy, Marmara University, Faculty of Engineering, Computer Engineering, Turkey, 2015 - 2016

ARGELA, Scientific Consultancy, Marmara University, Faculty of Engineering, Computer Engineering, Turkey, 2014 - 2016

ARGELA, Project Consultancy, Marmara University, Faculty of Engineering, Computer Engineering, Turkey, 2013 - 2015

Tasks In Event Organizations

Alkaya A. F., 13th Cologne-Twente Workshop on Graphs & Combinatorial Optimization, Scientific Congress, İstanbul, Turkey, Mayıs 2015

Mobility Activity

Sabbatical Leave, Scientific Research, The University of Nottingham, England, 2022 - 2023

Post Doc, Post Doc, Johns Hopkins University, United States Of America, 2011 - 2012

Metrics

Publication: 47
Citation (WoS): 272
Citation (Scopus): 238
H-Index (WoS): 7
H-Index (Scopus): 5

Non Academic Experience

University, University of Nottingham, School of Computer Science
Crenno
İsnet
NET-BT
Johns Hopkins University