

Prof. ALİ FUAT ALKAYA

Personal Information

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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, İstanbul, 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 an Associate 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 intelligence.

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 (YI) (Tezli), Turkey 1998 - 2003

Undergraduate, Koç Üniversitesi, Fen Fakültesi, Matematik Bölümü, Turkey 1994 - 1998

Foreign Languages

English, C2 Mastery

Dissertations

Doctorate, Optimizing the operations of electronic component placement machines, Marmara Üniversitesi, Fen Bilimleri Enstitüsü, Mühendislik Yönetimi (Dr), 2009

Postgraduate, Task Scheduling Techniques for Arbitrary Network Topologies, Marmara Üniversitesi, Fen Bilimleri Enstitüsü, Bilgisayar Mühendisliği (YI) (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
Associate Professor, Marmara University, Faculty Of Engineering, Computer Engineering, 2016 - 2021
Assistant Professor, Marmara University, Faculty Of Engineering, Computer Engineering, 2009 - 2016
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, 2018 - 2019, 2019 - 2020, 2020 - 2021
Graph Theory, Doctorate, 2020 - 2021
Introduction to Programming II, Undergraduate, 2002 - 2003, 2003 - 2004, 2004 - 2005, 2005 - 2006, 2006 - 2007, 2007 - 2008, 2008 - 2009, 2009 - 2010, 2010 - 2011, 2012 - 2013, 2013 - 2014, 2014 - 2015, 2015 - 2016, 2016 - 2017, 2021 - 2022
Discrete Computational Structures, Undergraduate, 2017 - 2018, 2018 - 2019, 2019 - 2020, 2020 - 2021, 2021 - 2022
Data Communications and Computer Networks, Postgraduate, 2018 - 2019, 2019 - 2020, 2020 - 2021
Mobile Device Programming, Undergraduate, 2013 - 2014, 2014 - 2015, 2015 - 2016, 2016 - 2017, 2017 - 2018, 2018 - 2019, 2019 - 2020, 2020 - 2021, 2021 - 2022
Mathematics for Computer Science, Postgraduate, 2012 - 2013, 2013 - 2014, 2014 - 2015, 2017 - 2018, 2018 - 2019, 2019 - 2020
Data Mining Techniques, Postgraduate, 2018 - 2019, 2019 - 2020
Linear Algebra, Undergraduate, 2014 - 2015, 2015 - 2016, 2016 - 2017, 2017 - 2018
Introduction to Programming I, Undergraduate, 2002 - 2003, 2003 - 2004, 2004 - 2005, 2005 - 2006, 2006 - 2007, 2007 - 2008, 2008 - 2009, 2009 - 2010, 2010 - 2011, 2012 - 2013, 2013 - 2014, 2014 - 2015, 2015 - 2016, 2016 - 2017

Advising Theses

Alkaya A. F. , Analyzing the impact of political tweets on exchange rates, Postgraduate, A.ALKAN(Student), 2021
Alkaya A. F. , Application of metaheuristics for the feature selection problem, Postgraduate, G.KALAYCI(Student), 2019
Alkaya A. F. , Stochastic Path Planning in the Presence of Disambiguation and Neutralization Capabilities, Doctorate, S.YILDIRIM(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

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

- I. **Heuristics for the Canadian traveler problem with neutralizations**
ALKAYA A. F. , Yildirim S., Aksakalli V.
COMPUTERS & INDUSTRIAL ENGINEERING, vol.159, 2021 (Journal Indexed in SCI)
- II. **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 (Journal Indexed in SCI)
- III. **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 (Journal Indexed in SCI)
- IV. **Canadian Traveler Problem with Neutralizations**
YILDIRIM S., Aksakalli V., ALKAYA A. F.
EXPERT SYSTEMS WITH APPLICATIONS, vol.132, pp.151-165, 2019 (Journal Indexed in SCI)
- V. **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 (Journal Indexed in SCI)
- VI. **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 (Journal Indexed in SCI)
- VII. **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 (Journal Indexed in SCI)
- VIII. **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 (Journal Indexed in SCI)
- IX. **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 (Journal Indexed in SCI)
- X. **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 (Journal Indexed in SCI)
- XI. **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 (Journal Indexed in SCI)
- XII. **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 (Journal Indexed in SCI)
- XIII. **MINIMIZING MACHINE CHANGEOVER TIME IN PRODUCT LINE IN AN APPAREL INDUSTRY**

KENTLİ A., Dal V., ALKAYA A. F.

TEKSTİL VE KONFEKSİYON, vol.23, no.2, pp.159-167, 2013 (Journal Indexed in SCI)

XIV. **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 (Journal Indexed in SCI)

XV. **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 (Journal Indexed in SCI)

XVI. **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 (Journal Indexed in SCI)

XVII. **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 (Journal Indexed in SCI)

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 (Refereed Journals of Other Institutions)

Refereed Congress / Symposium Publications in Proceedings

I. **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

II. **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

III. **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

IV. **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

V. **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

VI. **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

VII. **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

VIII. **Optimizing Cellular Networks for Adaptive Video Streaming**

ALKAYA A. F. , Demir T., GÖRKEMLİ B., Tathcioğlu S.

International Conference on Advanced Technologies, Computer Engineering and Science (ICATCES'18), 11 - 13 May 2018

- IX. **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
- X. **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
- XI. **Disambiguation Points Sampling Heuristic for the Stochastic Obstacle Scene Problem**
Yıldırım S., AKSAKALLI V., ALKAYA A. F.
IEOM, 8 - 10 March 2016
- XII. **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
- XIII. **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
- XIV. **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
- XV. **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
- XVI. **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
- XVII. **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
- XVIII. **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
- XIX. **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
- XX. **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
- XXI. **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

XXII. 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

XXIII. 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

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

Citations

Total Citations (WOS):229

h-index (WOS):7