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Education Information

Post Doctorate, The University of Birmingham, School Of Computer Science, Cercıa, United Kingdom 2011 - 2012
Doctorate, Erciyes University, Fen Bilimleri Enstitüsü, Bilgisayar Mühendisliği Abd, Turkey 2005 - 2009
Postgraduate, Erciyes University, Fen Bilimleri Enstitüsü, Bilgisayar Mühendisliği Abd, Turkey 2003 - 2005
Undergraduate, Erciyes University, Mühendislik Fakültesi, Bilgisayar Mühendisliği, Turkey 1999 - 2003

Dissertations

Doctorate, Nümerik Optimizasyon Problemlerinde Yapay Arı Kolonisi (Artificial Bee Colony) Algoritmasının Performans Analizi, Erciyes Üniversitesi, Fen Bilimleri Enstitüsü, Bilgisayar Mühendisliği Abd, 2009
Postgraduate, Bilgisayar Destekli Yöntemlerle Yüzdeki Dismorfik Rahatsızlıkların Otomatik Tespiti, Erciyes Üniversitesi, Fen Bilimleri Enstitüsü, Bilgisayar Mühendisliği Abd, 2005

Research Areas

Computer Sciences, Artificial Intelligence, Computer Learning and Pattern Recognition, Evolutionary Computing, Software, Software Engineering, Engineering and Technology

Academic Titles / Tasks

Professor, Erciyes University, Mühendislik Fakültesi, Bilgisayar Mühendisliği, 2019 - Continues
Associate Professor, Erciyes University, Mühendislik Fakültesi, Bilgisayar Mühendisliği, 2013 - 2019
Assistant Professor, Erciyes University, Mühendislik Fakültesi, Bilgisayar Mühendisliği, 2009 - 2013
Research Assistant, Erciyes University, Mühendislik Fakültesi, Bilgisayar Mühendisliği, 2004 - 2009

Academic and Administrative Experience

Uygulama ve Araştırma Merkezi Yönetim Kurulu Üyesi, Erciyes University, Yapay Zekâ ve Büyük Veri Uygulama ve

Araştırma Merkezi, 2020 - Continues
BİDEB Danışma Kurulu Üyesi, TÜBİTAK BİDEB, 2019 - Continues
Erciyes University, 2016 - Continues
Erciyes University, 2015 - Continues
Erciyes University, 2015 - Continues
Erasmus Coordinator, Erciyes University, Mühendislik Fakültesi, Bilgisayar Mühendisliği, 2015 - 2020
Erciyes Üniversitesi, Bilgisayar Bilimleri Uygulama Ve Araştırma Merkezi, 2016 - 2019
Erciyes Üniversitesi, Mühendislik Fakültesi, Bilgisayar Mühendisliği, 2016 - 2017
Erciyes University, 2016 - 2017

Advising Theses

Akay B., Nesne Yönelimli Yazılımlar ve RESTful Web Servisler için Yapay Arı Kolonisi Temelli Yazılım Test Yöntemleri Geliştirilmesi, Doctorate, Ö.ŞAHİN(Student), 2020

Akay B., Yapay zeka algoritmaları ile kriptoanaliz, Doctorate, A.KH(Student), 2020

Akay B., YAPAY ARI KOLONİSİ TEMELLİ LOJİSTİK REGRESYON SINIFLAYICILARIN OPTİMAL TASARIMI VE TÜRKÇE SPAM MAİLLERİN FİLTRELENMESİNDE BAŞARIMLARININ İNCELENMESİ, Doctorate, B.KAĞAN(Student), 2020

Akay B., İNSAN AKTİVİTESİ TANIMAYA YÖNELİK BÜYÜK VERİ SETLERİNDE KÜMELEME YÖNTEMLERİNİN BULUT ÜZERİNDE PARALELLEŞTİRİLMESİ, Doctorate, A.ABDULRAHMAN(Student), 2020

Akay B., Yapay Arı Koloni Algoritmasının Sınırlamalı Optimizasyon Problemleri Üzerinde Performans Analizi, Postgraduate, D.ALICI(Student), 2019

AKAY B., An Investigation of Wireless Sensor Network Localication Techniques, Postgraduate, L.Jasim(Student), 2017

AKAY B., Minimum Spanning Tree Construction using Meta-heuristics, Postgraduate, N.Abdulkareem(Student), 2017

AKAY B., Yazılım Test Verisi Üretiminde Yapay Zeka Tekniklerinin Performans Analizi, Postgraduate, Ö.Şahin(Student), 2016

AKAY B., Kriptoloji Yöntemlerinin Karşılaştırılması, Postgraduate, Z.Hashim(Student), 2016

AKAY B., Yapay Zeka Yekniklerinin Renk Haritası İndirgemede Kullanılması, Postgraduate, K.Demir(Student), 2013

Published journal articles indexed by SCI, SSCI, and AHCI

I. **A Comparative Analysis of Deep Learning-Based Approaches for Classifying Dental Implants Decision Support System**
    Lubbad M. A. H., LEBLEBİCİOĞLU KURTULUŞ İ., KARABOĞA D., KILIÇ K., BAŞTÜRK A., AKAY B., NALBANTOĞLU Ö. U., Yilmaz O. M. D., AYATA M., YILMAZ S., et al.
    JOURNAL OF IMAGING INFORMATICS IN MEDICINE, 2024 (SCI-Expanded)

II. **Machine learning applications in detection and diagnosis of urology cancers: a systematic literature review**
    Lubbad M., KARABOĞA D., BAŞTÜRK A., AKAY B., Nalbantoglu U., Pacal I.
    NEURAL COMPUTING & APPLICATIONS, vol.36, no.12, pp.6355-6379, 2024 (SCI-Expanded)

III. **A robust deep learning model for the classification of dental implant brands**
    LEBLEBİCİOĞLU KURTULUŞ İ., Lubbad M., Yilmaz O. M. D., KILIÇ K., KARABOĞA D., BAŞTÜRK A., AKAY B., Nalbantoglu U., Yilmaz S., Ayata M., et al.
    Journal of Stomatology, Oral and Maxillofacial Surgery, 2024 (SCI-Expanded)

IV. **A comparative study of YOLO models and a transformer-based YOLOv5 model for mass detection in mammograms**
    COŞKUN D., KARABOĞA D., BAŞTÜRK A., AKAY B., NALBANTOĞLU Ö. U., DOĞAN S., Paçal İ., KARAGÖZ M. A.
    Turkish Journal of Electrical Engineering and Computer Sciences, vol.31, no.7, pp.1294-1313, 2023 (SCI-Expanded)

V. **Robust real-time polyp detection system design based on YOLO algorithms by optimizing activation functions and hyper-parameters with artificial bee colony (ABC)**

Karaman A., Pacal I., BAŞTÜRK A., AKAY B., Nalbantoglu U., Coskun S., ŞAHİN Ö., KARABOĞA D.

EXPERT SYSTEMS WITH APPLICATIONS, vol.221, 2023 (SCI-Expanded)

VI.   **Hyper-parameter optimization of deep learning architectures using artificial bee colony (ABC) algorithm for high performance real-time automatic colorectal cancer (CRC) polyp detection**

Karaman A., KARABOĞA D., Pacal I., AKAY B., BAŞTÜRK A., Nalbantoglu U., Coskun S., ŞAHİN Ö.

APPLIED INTELLIGENCE, vol.53, no.12, pp.15603-15620, 2023 (SCI-Expanded)

VII.   **An unsupervised transfer learning model based on convolutional auto encoder for non-alcoholic steatohepatitis activity scoring and fibrosis staging of liver histopathological images**

KARAGÖZ M. A., AKAY B., BAŞTÜRK A., KARABOĞA D., NALBANTOĞLU Ö. U.

Neural Computing and Applications, vol.35, no.14, pp.10605-10619, 2023 (SCI-Expanded)

VIII.   **A review on the studies employing artificial bee colony algorithm to solve combinatorial optimization problems**

KAYA E., GÖRKEMLİ B., AKAY B., KARABOĞA D.

ENGINEERING APPLICATIONS OF ARTIFICIAL INTELLIGENCE, vol.115, 2022 (SCI-Expanded)

IX.   **A new lightweight convolutional neural network for radiation-induced liver disease classification**

Alici-Karaca D., Akay B., Yay A. H., Suna P., Nalbantoğlu Ö. U., Karaboğa D., Baştürk A., Balcıoğlu E., Baran M.

BIOMEDICAL SIGNAL PROCESSING AND CONTROL, vol.73, 2022 (SCI-Expanded)

X.   **A comprehensive survey on optimizing deep learning models by metaheuristics**

AKAY B., KARABOĞA D., AKAY R.

ARTIFICIAL INTELLIGENCE REVIEW, vol.55, no.2, pp.829-894, 2022 (SCI-Expanded)

XI.   **An efficient real-time colonic polyp detection with YOLO algorithms trained by using negative samples and large datasets**

Pacal I., Karaman A., KARABOĞA D., AKAY B., BAŞTÜRK A., Nalbantoglu U., Coskun S.

COMPUTERS IN BIOLOGY AND MEDICINE, vol.141, 2022 (SCI-Expanded)

XII.   **A survey on the Artificial Bee Colony algorithm variants for binary, integer and mixed integer programming problems**

AKAY B., KARABOĞA D., GÖRKEMLİ B., Kaya E.

Applied Soft Computing, vol.106, 2021 (SCI-Expanded)

XIII.   **Archive-based multi-criteria Artificial Bee Colony algorithm for whole test suite generation**

ŞAHİN Ö., AKAY B., KARABOĞA D.

Engineering Science and Technology, an International Journal, vol.24, pp.806-817, 2021 (SCI-Expanded)

XIV.   **A Discrete Dynamic Artificial Bee Colony with Hyper-Scout for RESTful web service API test suite generation**

ŞAHİN Ö., AKAY B.

Applied Soft Computing, vol.104, 2021 (SCI-Expanded)

XV.   **A survey on the Metaheuristics for Cryptanalysis of Substitution and Transposition Ciphers**

Sabonchi A. K. S., AKAY B.

COMPUTER SYSTEMS SCIENCE AND ENGINEERING, vol.39, no.1, pp.87-106, 2021 (SCI-Expanded)

XVI.   **Human Activity Recognition Based on Parallel Approximation Kernel K-Means Algorithm**

Jamel A. A. M., Akay B.

Computer Systems Science And Engineering, vol.35, no.6, pp.441-456, 2020 (SCI-Expanded)

XVII.   **A Binomial Crossover Based Artificial Bee Colony Algorithm for Cryptanalysis of Polyalphabetic Cipher**

Sabonchi A. K. S., AKAY B.

TEHNICKI VJESNIK-TECHNICAL GAZETTE, vol.27, no.6, pp.1825-1835, 2020 (SCI-Expanded)

XVIII.   **A comprehensive review of deep learning in colon cancer**

Pacal I., KARABOĞA D., BAŞTÜRK A., AKAY B., Nalbantoglu U.

COMPUTERS IN BIOLOGY AND MEDICINE, vol.126, 2020 (SCI-Expanded)

XIX.   **Cryptanalysis of Polyalphabetic Cipher Using Differential Evolution Algorithm**

Sabonchi A. K. S., AKAY B.

TEHNICKI VJESNIK-TECHNICAL GAZETTE, vol.27, no.4, pp.1101-1107, 2020 (SCI-Expanded)

XX. **Spam filtering using a logistic regression model trained by an artificial bee colony algorithm**
Dedeturk B. K., AKAY B.
APPLIED SOFT COMPUTING, vol.91, 2020 (SCI-Expanded)

XXI. **A Survey and Systematic Categorization of Parallel K-means and Fuzzy-c-Means Algorithms**
Jamel A. A. M., AKAY B.
COMPUTER SYSTEMS SCIENCE AND ENGINEERING, vol.34, no.5, pp.259-281, 2019 (SCI-Expanded)

XXII. **Application of artificial bee colony algorithm for maximizing heat transfer in a perforated fin**
Das R., Singh K., AKAY B., Gogoi T. K.
PROCEEDINGS OF THE INSTITUTION OF MECHANICAL ENGINEERS PART E-JOURNAL OF PROCESS MECHANICAL ENGINEERING, vol.232, no.1, pp.38-48, 2018 (SCI-Expanded)

XXIII. **Pareto front feature selection based on artificial bee colony optimization**
Hancer E., Xue B., Zhang M., Karaboga D., Akay B.
INFORMATION SCIENCES, vol.422, pp.462-479, 2018 (SCI-Expanded)

XXIV. **Application of artificial bee colony algorithm for inverse modelling of a solar collector**
Das R., AKAY B., Singla R. K., Singh K.
INVERSE PROBLEMS IN SCIENCE AND ENGINEERING, vol.25, no.6, pp.887-908, 2017 (SCI-Expanded)

XXV. **Comparisons of metaheuristic algorithms and fitness functions on software test data generation**
ŞAHİN Ö., AKAY B.
APPLIED SOFT COMPUTING, vol.49, pp.1202-1214, 2016 (SCI-Expanded)

XXVI. **A survey on the applications of artificial bee colony in signal, image, and video processing**
AKAY B., KARABOĞA D.
SIGNAL IMAGE AND VIDEO PROCESSING, vol.9, no.4, pp.967-990, 2015 (SCI-Expanded)

XXVII. **The Artificial Bee Colony algorithm in layer optimization for the maximum fundamental frequency of symmetrical laminated composite plates**
APALAK M. K., KARABOĞA D., AKAY B.
ENGINEERING OPTIMIZATION, vol.46, no.3, pp.420-437, 2014 (SCI-Expanded)

XXVIII. **Synchronous and asynchronous Pareto-based multi-objective Artificial Bee Colony algorithms**
Akay B.
JOURNAL OF GLOBAL OPTIMIZATION, vol.57, no.2, pp.415-445, 2013 (SCI-Expanded)

XXIX. **A study on particle swarm optimization and artificial bee colony algorithms for multilevel thresholding**
Akay B.
APPLIED SOFT COMPUTING, vol.13, no.6, pp.3066-3091, 2013 (SCI-Expanded)

XXX. **Artificial bee colony algorithm for large-scale problems and engineering design optimization**
AKAY B., KARABOĞA D.
JOURNAL OF INTELLIGENT MANUFACTURING, vol.23, no.4, pp.1001-1014, 2012 (SCI-Expanded)

XXXI. **A modified Artificial Bee Colony algorithm for real-parameter optimization**
AKAY B., KARABOĞA D.
INFORMATION SCIENCES, vol.192, pp.120-142, 2012 (SCI-Expanded)

XXXII. **Mix Proportioning of Aggregates for Concrete by Three Different Approaches**
HAKTANIR T., KARABOĞA D., AKAY B.
JOURNAL OF MATERIALS IN CIVIL ENGINEERING, vol.24, no.5, pp.529-537, 2012 (SCI-Expanded)

XXXIII. **Modeling discharge-sediment relationship using neural networks with artificial bee colony algorithm**
KİSİ O., ÖZKAN C., AKAY B.
JOURNAL OF HYDROLOGY, vol.428, pp.94-103, 2012 (SCI-Expanded)

XXXIV. **Neural networks with artificial bee colony algorithm for modeling daily reference evapotranspiration**
ÖZKAN C., KİSİ O., AKAY B.
IRRIGATION SCIENCE, vol.29, no.6, pp.431-441, 2011 (SCI-Expanded)

XXXV. **Partial transmit sequences based on artificial bee colony algorithm for peak-to-average power ratio reduction in multicarrier code division multiple access systems**

TAŞPINAR N., KARABOĞA D., Yildirim M., AKAY B.

IET COMMUNICATIONS, vol.5, no.8, pp.1155-1162, 2011 (SCI-Expanded)

XXXVI. **Partial Transmit Sequences Based On Artificial Bee Colony Algorithm for PAPR Reduction in MC-CDMA Systems**

TAŞPINAR N., KARABOĞA D., YILDIRIM M., AKAY B.

IET COMMUNICATIONS, vol.5, no.8, pp.1155-1162, 2011 (SCI-Expanded)

XXXVII. **A modified Artificial Bee Colony (ABC) algorithm for constrained optimization problems**

KARABOĞA D., AKAY B.

APPLIED SOFT COMPUTING, vol.11, no.3, pp.3021-3031, 2011 (SCI-Expanded)

XXXVIII. **PAPR reduction using artificial bee colony algorithm in OFDM systems**

TAŞPINAR N., KARABOĞA D., Yildirim M., AKAY B.

TURKISH JOURNAL OF ELECTRICAL ENGINEERING AND COMPUTER SCIENCES, vol.19, no.1, pp.47-58, 2011 (SCI-Expanded)

XXXIX. **Proportional-integral-derivative controller design by using artificial bee colony, harmony search, and the bees algorithms**

KARABOĞA D., AKAY B.

PROCEEDINGS OF THE INSTITUTION OF MECHANICAL ENGINEERS PART I-JOURNAL OF SYSTEMS AND CONTROL ENGINEERING, vol.224, pp.869-883, 2010 (SCI-Expanded)

XL. **A comparative study of Artificial Bee Colony algorithm**

KARABOĞA D., AKAY B.

APPLIED MATHEMATICS AND COMPUTATION, vol.214, no.1, pp.108-132, 2009 (SCI-Expanded)

XLI. **A survey: algorithms simulating bee swarm intelligence**

KARABOĞA D., AKAY B.

ARTIFICIAL INTELLIGENCE REVIEW, vol.31, pp.61-85, 2009 (SCI-Expanded)

XLII. **On the performance of artificial bee colony (ABC) algorithm**

Karaboga D., Basturk B.

APPLIED SOFT COMPUTING, vol.8, no.1, pp.687-697, 2008 (SCI-Expanded)

XLIII. **A powerful and efficient algorithm for numerical function optimization: artificial bee colony (ABC) algorithm**

Karaboga D., Basturk B.

JOURNAL OF GLOBAL OPTIMIZATION, vol.39, no.3, pp.459-471, 2007 (SCI-Expanded)

Articles Published in Other Journals

I. **Parameter Tuning of Artificial Bee Colony Algorithm Using Iterative F-Race Algorithm**

Şahin Ö., Akay B.

Erciyes Üniversitesi Fen Bilimleri Enstitüsü Dergisi, vol.37, no.1, pp.12-25, 2021 (Peer-Reviewed Journal)

II. **A survey on the studies employing machine learning (ML) for enhancing artificial bee colony (ABC) optimization algorithm**

Karaboğa D., Akay B., Karaboğa N.

Cogent Engineering, vol.7, no.1, pp.1855741, 2020 (ESCI)

III. **Sınırlama Ele Alış Metotlarının Yapay Arı Kolonisi Algoritması Üzerinde Etkisinin İncelenmesi**

ALICI KARACA D., AKAY B.

Erciyes Üniversitesi Fen Bilimleri Enstitüsü Dergisi, vol.36, no.3, pp.385-399, 2020 (Peer-Reviewed Journal)

IV. **Artificial Bee Colony Algorithm Variants on Constrained Optimization**

AKAY B., KARABOĞA D.

International Journal of Optimization and Control: Theories & Applications, vol.7, no.1, 2017 (Peer-Reviewed Journal)

V. **KLASİK KRİPTOLOJİ YÖNTEMLERİNİN KARŞILAŞTIRILMASI**

Z H O., A S., AKAY B.

e-Journal of New World Sciences Academy, vol.11, no.4, pp.100-108, 2016 (Peer-Reviewed Journal)

VI. **Artificial Bee Colony ABC Optimization Algorithm For Training Feed Forward Neural Networks Bu çalısma LNCS tarafından konferans yayınından makale olarak yayınlanmıstır**
KARABOĞA D., AKAY B., ÖZTÜRK C.
LNCS: Modeling Decisions forArtificial Intelligence, vol.4617, pp.318-329, 2007 (Scopus)

Books & Book Chapters

I. **Artificial Bee Colony Algorithm and Its Application to Content Filtering in Digital Communication**
DEDETÜRK B. K., AKAY B., KARABOĞA D.
in: Nature-Inspired Metaheuristic Algorithms for Engineering Optimization Applications, Carbas Serdar, Toktas Abdurrahim, Ustun Deniz, Editor, Springer Nature, pp.337-355, 2021

II. **Artificial Bee Colony Algorithm and Its Application to Content Filtering in Digital Communication**
DEDETÜRK B. K., AKAY B., KARABOĞA D.
in: Nature-Inspired Metaheuristic Algorithms for Engineering Optimization Applications, Carbas Serdar, Toktas Abdurrahim, Ustun Deniz,, Editor, Springer Nature, Singapore, pp.337-355, 2021

III. **Artificial Bee Colony Algorithm and An Application to Software Defect Prediction**
Akay R., Akay B.
in: Metaheuristic Optimization Methods: Algorithms and Engineering Applications, Fouad Bennis,Rajib K Bhattacharjya, Editor, Springer, London/Berlin , Berlin, pp.73-92, 2020

IV. **Artificial Bee Colony - Modifications and An Application to Software Requirements Selection**
Akay B.
in: Swarm Intelligence Algorithms: Modifications and Applications, Adam Slowick, Editor, CRC, New York , Florida, pp.1-26, 2020

V. **Artificial Bee Colony Algorithm**
Akay B., Karaboğa D.
in: Swarm Intelligence Algorithms: A Tutorial, Adam Slowick, Editor, CRC, New York , Florida, pp.1-25, 2020

VI. **Artificial Bee Colony Algorithm Variants and Its Application to Colormap Quantization**
Akay B., Demir K.
in: Evolutionary and Swarm Intelligence Algorithms, Jagdish Chand Bansal,Pramod Kumar Singh,Nikhil R. Pal ., Editor, Springer, London/Berlin , Berlin, pp.25-41, 2019

VII. **Recent Advances in Evolutionary Algorithms for Job Shop Scheduling**
AKAY B., YAO X.
in: Automated Scheduling and Planning, E. Ozcan, N. Urquhart, S. Uyar, Editor, Springer-Verlag Gmbh- Berlin Heidelberg, Berlin, pp.191-224, 2013

Refereed Congress / Symposium Publications in Proceedings

I. **Deep Learning Based Steatosis Quantification of Liver Histopathology Images Using Unsupervised Feature Extraction**
KARAGÖZ M. A., KARABOĞA D., AKAY B., BAŞTÜRK A., Nalbantoglu O. U.
2nd International Conference on Computing and Machine Intelligence, ICMI 2022, İstanbul, Turkey, 15 - 16 July 2022

II. **Developing A Deep Learning Network For Recognition of Dental Implant Systems**
Leblebicioğlu Kurtuluş İ., Karaboğa D., Akay B., Baştürk A., Durmaz Yılmaz Ö. M., Kılıç K., Nalbantoğlu Ö. U., Yılmaz S.
25th Scientific Congress of Turkish Prosthodontics and Implantology Association, Muğla, Turkey, 4 - 07 November 2021

III. **Statistics based Cryptanalytic by Artificial Bee Colony Algorithm**
Sabonchi A., AKAY B.

The International Advanced Technologies Symposium, IATS17, 19 - 21 October 2017, pp.3874-3879

IV. **Cryptanalysis using Artificial Bee Colony Algorithm Guided by Frequency based Fitness Value**
Sabonchi A. K. S., AKAY B.
1st International Symposium on Multidisciplinary Studies and Innovative Technologies, ISMSIT 2017, Tokat,
Turkey, 2 - 04 November 2017, pp.334-338

V. **An Investigation of Range-based Localization Methods in Wireless Sensor Networks**
Jasim L., AKAY B.
1st International Symposium on Multidisciplinary Studies and Innovative Technologies, ISMSIT 2017, Tokat,
Turkey, 2 - 04 November 2017, pp.78-83

VI. **Derin öğrenme tabanlı önerici sistemler (Deep learning based recommender systems)**
AKAY B., KAYNAR O., DEMİRKOPARAN F.
IEEE Conferences 2017 International Conference on Computer Science and Engineering (UBMK), Antalya, Turkey,
Turkey, 5 - 08 October 2017, pp.645-648

VII. **Öğrenme-Öğretme Temelli ve Armoni Arama Algoritmaları ile Test Verisi Üretimi**
Akay B., Şahin Ö.
10. Ulusal Yazılım Mühendisliği Sempozyumu, Çanakkale, Turkey, 24 - 26 October 2016, pp.154-165

VIII. **Döngü İçeren Kod Parçaları için Test Verisi Üretiminde Meta-sezgisel Algoritmaların İncelemesi**
ŞAHİN Ö., AKAY B.
1st International Conference on Engineering Technology and Applied Sciences, Afyon, Turkey, 21 April - 22
October 2016, pp.362-369

IX. **A multi-objective artificial bee colony approach to feature selection using fuzzy mutual information**
Hancer E., XUE B., ZHANG M., KARABOĞA D., AKAY B.
IEEE Congress on Evolutionary Computation, CEC 2015, Sendai, Japan, 25 - 28 May 2015, pp.2420-2427

X. **İşlemci Çizelgelemesi için Karınca Koloni Yaklaşımı**
AKAY B., KARABOĞA D.
Akıllı Sistemlerde Yenilikler ve Uygulamaları (ASYU) 2012, Trabzon, Türkiye„ Trabzon, Turkey, 1 - 04 July 2012,
pp.111-115

XI. **Structural Optimization of Wavelet Packets using Swarm Algorithms**
AKAY B., KIRMIZI I.
IEEE International Conference on Fuzzy Systems (FUZZ-IEEE) / International Joint Conference on Neural
Networks (IJCNN) / IEEE Congress on Evolutionary Computation (IEEE-CEC) / IEEE World Congress on
Computational Intelligence (IEEE-WCCI), Brisbane, Australia, 10 - 15 June 2012

XII. **2-Opt Based Artificial Bee Colony Algorithm For Solving Traveling Salesman Problem**
AKAY B., AYDOĞAN E., KARACAN L.
2nd World Conference on Information Technology (WCIT-2011), Antalya, Turkey, Turkey, 1 - 04 November 2011,
pp.666-672

XIII. **Wavelet Packets Optimization using Artificial Bee Colony Algorithm**
AKAY B., KARABOĞA D.
IEEE Congress on Evolutionary Computation (CEC), Louisiana, United States Of America, 5 - 08 June 2011, pp.89-
94

XIV. **Solving Integer Programming Problems by Using Artificial Bee Colony Algorithm**
AKAY B., KARABOĞA D.
11th Congress of the Italian-Association-for-Artificial-Intelligence, Reggio Emilia, Italy, 9 - 12 December 2009,
vol.5883, pp.355-364

XV. **Parameter Tuning for the Artificial Bee Colony Algorithm**
AKAY B., KARABOĞA D.
1st International Conference on Computational Collective IntelligenceWroclaw Univ Technol, Wroclaw, Poland, 5 -
07 October 2009, vol.5796, pp.608-619

XVI. **Solving Large Scale Numerical Problems Using Artificial Bee Colony Algorithm**
KARABOĞA D., AKAY B.
Proceedings of 6th International Symposium on Intelligent and Manufacturing Systems, 6th Int. Symp. on Intelligent

and Manufacturing Systems, Features, Strategies and Innovation, Sakarya, Turkiye,, Tunisia, 1 - 04 November 2008, pp.401-410

XVII. **Artificial bee colony (ABC) optimization algorithm for training feed-forward neural networks**
KARABOĞA D., AKAY B., ÖZTÜRK C.
4th International Conference on Modeling Decisions for Artificial Intelligence, Kitakyushu, Japan, 16 August 2007 - 18 August 2008, vol.4617, pp.318-321

XVIII. **Training Neural Networks With ABC Optimization Algorithm On Medical Pattern Classification**
KARABOĞA D., ÖZTÜRK C., AKAY B.
International Conference on Multivariate Statistical Modelling & High Dimensional Data Mining, Kayseri, Turkiye,, Turkey, 1 - 04 June 2008, pp.31

XIX. **Effect Of Region Scaling On The Initialization Of Particle Swarm Optimization, Differential Evolution And Artificial Bee Colony Algorithms On Multimodal High Dimensional Problems, Kayseri, Turkiye**
KARABOĞA D., AKAY B.
International Conference on Multivariate Statistical Modelling & High Dimensional Data Mining, Kayseri, Turkiye,, Turkey, 1 - 04 June 2008, pp.117

XX. **Artificial Bee Colony Algorithm On Training Artificial Neural Networks**
KARABOĞA D., AKAY B.
IEEE 15th Signal Processing and Communications Applications, SIU 2007, Eskişehir, Türkiye,, Eskişehir, Turkey, 1 - 04 June 2007, pp.1-4

XXI. **D. Karaboga, B. Basturk, Artificial Bee Colony (ABC) Optimization Algorithm For Solving Constrained Optimization Problems**
KARABOĞA D., AKAY B.
Advances in Soft Computing: Foundations of Fuzzy Logic and Soft Computing Lecture Notes in Computer Science Volume 4529/2007, 12th International Fuzzy Systems Association World Congress, IFSA 2007, Cancun, Mexico,, Mexico, 1 - 04 June 2007, pp.789-798

XXII. **An Artificial Bee Colony (ABC) Algorithm For Numeric Function Optimization**
AKAY B., KARABOĞA D.
Proceedings of IEEE SIS'06, IEEE Swarm Intelligence Symposium 2006,, United States Of America, 1 - 04 May 2006, pp.13-19

XXIII. **Yüz Tanıma Ile Havaalanı Personelinin Kimliklendirilmesi**
AKAY B., KARABOĞA D.
Hasem 06, Kayseri VI. Havacılık Sempozyumu, Nevşehir, Türkiye, Nevşehir, Turkey, 1 - 04 May 2006, pp.449-453

XXIV. **Image Segmentation Using Differential Evolution Algorithm**
KARABOĞA D., AKAY B.
Proceedings of the IEEE 13th Signal Processing and Communications Applications Conference,, Kayseri, Turkey, 1 - 04 May 2005, pp.33-36

Other Publications

I. **Artificial Bee Colony (Abc), Harmony Search And Bees Algorithms On Numerical Optimization, Iproms 2009 Innovative Production Machines And -Systems Virtual Conference, Cardiff, UK.**
KARABOĞA D., AKAY B.
Other, pp.417-422, 2009

Supported Projects

Genç M. S., Genç G., Akay B., Selçuklu S. B., Akarsu B., Azgın Ş. T., Yeşilata B., AB IPA Project, Erciyes Üniversitesi Kampüsünde Enerji Verimliliği Önlemlerinin ve Uygulamalarının Öncelik Sıralamalarının Çok Amaçlı Optimizasyonu , 2020 - 2022

KARABOĞA D., AKAY B., KURBAN R., ÖZDEMİR Ö., YILMAZ M., SEKMEN U., İNCE A., Project Supported by Higher Education Institutions, DALGIÇ POMPA GRUPLARININ YAPAY ZEKA TEKNİKLERİ İLE ENERJİ VERİMLİLİĞİ OPTİMİZASYONU: GERMİRALTI KAPTAJ ALANI ÖRNEĞİ, 2020 - 2021

AKAY B., SABONCHI A. K. S., Project Supported by Higher Education Institutions, Yapay Zeka Algoritmaları ile Kriptoanaliz, 2016 - 2020

AKAY B., ŞAHİN Ö., Project Supported by Higher Education Institutions, Yazılım Test Verisi Üretiminde Yapay Zeka Tekniklerinin İncelenmesi, 2016 - 2016

AKAY B., SABONCHI A. K. S., OBAID Z. H., Project Supported by Higher Education Institutions, Kriptoloji Yöntemlerinin Karşılaştırılması, 2016 - 2016

AKAY B., KARABOĞA D., Project Supported by Higher Education Institutions, Yapay Arı Kolonisi Algoritmasının Tek Modlu Sürekli Fonksiyonlar Üzerinde Hesaplama Karmaşıklığının Analizi, 2010 - 2014

KARABOĞA D., AYEN A., AKAY B., ÖZTÜRK İ. A., Project Supported by Higher Education Institutions, Bal Arısı Algoritması İle Internet/Intranet Trafik Akışı Optimizasyonu, 2006 - 2008

KARABOĞA D., AKAY B., Project Supported by Higher Education Institutions, Bilgisayar Destekli Yöntemler İle Dismorfik Hastalıklara Otomatik Tanı Konması, 2005 - 2006

Patent

Akay B., Karaboğa D., Kurban R., Özdemir Ö., Sekmen U., İnce A., BİRDEN FAZLA POMPANIN ENERJİ VERİMLİLİĞİ ODAKLI OPTİMAL OLARAK BİR ARADA ÇALIŞTIRILMASI İÇİN YAPAY ARI KOLONİ ALGORİTMASI TEMELLİ BİR YÖNTEM VE BİR SU TEMİN SİSTEMİ, Patent, CHAPTER F Mechanical engineering; Lighting; Heating; Weaponry; Destroyed Materials, The Invention Registration Number: 2020/22405 , Standard Registration, 2022

Activities in Scientific Journals

International Journal of Swarm Intelligence, Committee Member, 2012 - Continues

Memberships / Tasks in Scientific Organizations

TÜBİTAK BİDEB, Member of Advisory Board, 2019 - Continues

Scientific Research / Working Group Memberships

Intelligent Systems Research Group, ERCİYES ÜNİVERSİTESİ, Türkiye, http://mf.erciyes.edu.tr/abc, 2005 - Continues

Metrics

Publication: 81
Citation (WoS): 11806
Citation (Scopus): 14642
H-Index (WoS): 26
H-Index (Scopus): 26

Scholarships

2219- Yurt Dışı Doktora Sonrası Araştırma Burs Programı, TUBITAK, 2011 - Continues

Awards

Akay B., TÜBA GEBIP-Üstün Başarılı Genç Bilim İnsanı Ödülü , Türkiye Bilimler Akademisi (Tüba), November 2022

Leblebicioğlu Kurtuluş İ., Karaboğa D., Kılıç K., Akay B., Baştürk A., Nalbantoğlu Ö. U., Durmaz Yılmaz Ö. M., Yılmaz S., Sözlü Sunum Birincilik Ödülü, Türk Prostodonti Ve İmplantoloji Derneği (Tpid), November 2021

Akay B., Most-Cited Scientists In 2020, Plos Biology, Elsevier,
Https://Elsevier.Digitalcommonsdata.Com/Datasets/Btchxktzyw/3, October 2021

Karaboğa D., Akay B., Karaboğa N., "Best Paper Award" , 2020, Taylor & Francis, Cogent Engineering,
"Https://Think.Taylorandfrancis.Com/Journal-Prize-Cogent-Engineering/", December 2020

Akay B., Most-Cited Scientists in 2019, Plos Biology, Elsevier,
Https://Elsevier.Digitalcommonsdata.Com/Datasets/Btchxktzyw/2, October 2020

Akay B., Most-Cited Scientists in 2018, Plos Biology, Elsevier,
Https://Elsevier.Digitalcommonsdata.Com/Datasets/Btchxktzyw/1, July 2019

Akay B., Highly Cited Researcher, Clarivate Analytics (Web Of Science), November 2018

AKAY B., E-Devlet Yenilikçi Proje Yarışması, turkiye.gov.tr, May 2014