Assoc. Prof. ELİF VAROL ALTAY

Personal Information

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International Researcher IDs
ScholarID: mT6Zl10AAAAJ
ORCID: 0000-0001-8087-2754
Publons / Web Of Science ResearcherID: P-9753-2019
ScopusID: 57203221455
Yoksis Researcher ID: 229560

Education

Doctorate, Firat University, Turkey 2017 - 2021
Postgraduate, Firat University, Turkey 2014 - 2017
Undergraduate, Firat University, Turkey 2010 - 2014

Foreign Languages

English

Dissertations

Doctorate, Nümerik verilerde otomatik kural madenciliği için çok amaçlı melez akıllı optimizasyon tabanlı model geliştirme, Firat University, 2021
Postgraduate, Kaotik kuş sürüsü optimizasyon algoritmaları, Firat University, 2017

Research Areas

Avesis Research Areas: Artificial Intelligence, Computer Learning and Pattern Recognition, Software
WoS Research Areas: Engineering Computing & Technology (Eng), Computer Science Artificial Intelligence, Computer Science Software Engineering
Scopus Research Areas: Artificial Intelligence, Software

Academic Positions

Associate Professor, Manisa Celal Bayar University, Hasan Ferdi Turgutlu Teknoloji Fakültesi, Yazılım Mühendisliği, 2022 - Present
Research Assistant, Kirklareli University, 2021 - 2022
Research Assistant, Firat University, 2019 - 2021
Research Assistant, Kirklareli University, 2018 - 2019
Research Assistant, Firat University, 2017 - 2018

Research Assistant, Kirklareli University, 2015 - 2017

Academic and Administrative Experience

Chairperson of Unit Quality Commission, Manisa Celal Bayar University, Hasan Ferdi Turgutlu Teknoloji Fakültesi, Yazılım Mühendisliği, 2024 - Present

Courses

Postgraduate

Bilgisayar Bilimlerinde Özel Konular, Postgraduate, 2025 - 2026, 2024 - 2025, 2023 - 2024, 2022 - 2023

Esnek Hesaplama Yöntemleri, Postgraduate, 2024 - 2025, 2023 - 2024

Undergraduate

Yapay Zeka, Undergraduate, 2024 - 2025

Yapay Zeka, Undergraduate, 2024 - 2025

Biçimsel Diller ve Otomata Teorisi, Undergraduate, 2024 - 2025

Optimizasyon Teknikleri, Undergraduate, 2024 - 2025

Sosyal Sorumluluk, Undergraduate, 2023-2024, 2022-2023

Nesneye Yönelik Programlama, Undergraduate, 2023-2024, 2022-2023

Profesyonel Yazılım Gelişirme II, Undergraduate, 2023-2024, 2022-2023

Yazılım Mühendisliğinde Özel Konular, Undergraduate, 2022 - 2023

Yazılım Ölçme ve Sınama, Undergraduate, 2021-2022

Nesneye Yönelik Programlama, Undergraduate, 2021-2022

Supervised Theses

Varol Altay E., Flutter Tabanlı Mobil Uygulamalarda On-Device Makine Öğrenmesi Çalışmalarının Performans, Enerji Tüketimi ve Çoklu Model Etkileşimi Açısından Sistematik Analiz, Postgraduate, B.KIZILAY(Student), 2026

VAROL ALTAY E., Siber Güvenlik Veri Setlerinde Meta-sezgisel Makine Öğrenmesi Yöntemlerinin Performanslarının İncelenmesi, Postgraduate, E.SUDE(Student), 2024

VAROL ALTAY E., Kaotik üçgenleme topolojisi toplama optimizasyon algoritması, Postgraduate, S.MUTLU(Student), 2024

Articles

I. **Investigation of the Performance of Artificial Neural Networks Using Different Learning Algorithms in Biomedicine Datasets**
   Ulas M., Altay O., Varol Altay E.
   IEEE Access, vol.14, pp.4756-4791, 2026 (SCI-Expanded, Scopus)
II. **Average Localization Error Prediction for 5G Networks: An Investigation of Different Machine Learning Algorithms**
   ALTAY O., ÖZÇEVİK M., VAROL ALTAY E., ÖZÇEVİK Y.
   Wireless Personal Communications, vol.136, no.1, pp.289-319, 2024 (SCI-Expanded, Scopus)
III. **AOSMA-MLP: A Novel Method for Hybrid Metaheuristics Artificial Neural Networks and a New Approach for Prediction of Geothermal Reservoir Temperature**
   Gurgenc E., Altay O., Altay E.
   APPLIED SCIENCES-BASEL, vol.14, no.8, 2024 (SCI-Expanded, Scopus)
IV. **A Comparative Study of Metaheuristic Optimization Algorithms for Solving Real-World Engineering Design Problems**

Altay E., ALTAY O., ÖZÇEVİK Y.
CMES-COMPUTER MODELING IN ENGINEERING & SCIENCES, vol.139, no.1, 2024 (SCI-Expanded, Scopus)

V. **A novel chaotic transient search optimization algorithm for global optimization, real-world engineering problems and feature selection**
ALTAY O., Altay E.
PEERJ COMPUTER SCIENCE, vol.9, 2023 (SCI-Expanded, Scopus)

VI. **Hybrid Archimedes optimization algorithm enhanced with mutualism scheme for global optimization problems**
VAROL ALTAY E.
ARTIFICIAL INTELLIGENCE REVIEW, vol.56, no.7, pp.6885-6946, 2023 (SCI-Expanded, Scopus)

VII. **A novel hybrid multilayer perceptron neural network with improved grey wolf optimizer**
ALTAY O., VAROL ALTAY E.
NEURAL COMPUTING & APPLICATIONS, vol.35, no.1, pp.529-556, 2023 (SCI-Expanded, Scopus)

VIII. **Investigation of Slime Mould Algorithm and Hybrid Slime Mould Algorithms Performance in Global Optimization Problems**
ALTAY O., VAROL ALTAY E.
Dicle Üniversitesi Mühendislik Fakültesi Mühendislik Dergisi, vol.13, no.4, pp.661-671, 2022 (TRDizin)

IX. **Hybrid artificial neural network based on a metaheuristic optimization algorithm for the prediction of reservoir temperature using hydrogeochemical data of different geothermal areas in Anatolia (Turkey)**
Varol Altay E., Gurgenc E., Altay O., Dikici A.
Geothermics, vol.104, 2022 (SCI-Expanded, Scopus)

X. **GERÇEK DÜNYA MÜHENDİSLİK TASARIM PROBLEMLERİNİN ÇÖZÜMÜNDE KULLANILAN METASEZGİSEL OPTİMİZASYON ALGORİTMALARININ PERFORMANSLARININ İNCELENMESİ**
VAROL ALTAY E.
International Journal of Innovative Engineering Applications, vol.6, no.1, pp.65-74, 2022 (TRDizin)

XI. **Chaos numbers based a new representation scheme for evolutionary computation: Applications in evolutionary association rule mining**
Altay E., Alatas B.
CONCURRENCY AND COMPUTATION-PRACTICE & EXPERIENCE, vol.34, no.5, 2022 (SCI-Expanded, Scopus)

XII. **Güncel metasezgisel optimizasyon algoritmalarının CEC2020 test fonksiyonları ile karşılaştırılması**
VAROL ALTAY E., ALTAY O.
Dicle Üniversitesi Mühendislik Fakültesi Mühendislik Dergisi, vol.12, no.5, pp.729-741, 2021 (TRDizin)

XIII. **Differential evolution and sine cosine algorithm based novel hybrid multi-objective approaches for numerical association rule mining**
Altay E., Alatas B.
Information Sciences, vol.554, pp.198-221, 2021 (SCI-Expanded, Scopus)

XIV. **A novel clinical decision support system for liver fibrosis using evolutionary multi-objective method based numerical association analysis**
Altay E., Alatas B.
Medical Hypotheses, vol.144, 2020 (SCI-Expanded, Scopus)

XV. **Performance analysis of multi-objective artificial intelligence optimization algorithms in numerical association rule mining**
Varol Altay E., Alatas B.
Journal of Ambient Intelligence and Humanized Computing, vol.11, no.8, pp.3449-3469, 2020 (SCI-Expanded, Scopus)

XVI. **Association analysis of Parkinson disease with vocal change characteristics using multi-objective metaheuristic optimization**
Altay E., Alatas B.
MEDICAL HYPOTHESES, vol.141, 2020 (SCI-Expanded, Scopus)

XVII. **Intelligent optimization algorithms for the problem of mining numerical association rules**

Varol Altay E., Alatas B.
Physica A: Statistical Mechanics and its Applications, vol.540, 2020 (SCI-Expanded, Scopus)

XVIII. **Bird swarm algorithms with chaotic mapping**
Varol Altay E., Alatas B.
Artificial Intelligence Review, vol.53, no.2, pp.1373-1414, 2020 (SCI-Expanded, Scopus)

XIX. **Randomness as source for inspiring solution search methods: Music based approaches**
Altay E., Alatas B.
Physica A: Statistical Mechanics and its Applications, vol.537, 2020 (SCI-Expanded, Scopus)

XX. **Nicel Birliktelik Kural Madenciliği İçin Baskın Olmayan Sıralama Genetik Algoritma-II'nin Duyarlılık Analizi**
VAROL ALTAY E., ALATAŞ B.
INTERNATIONAL JOURNAL OF INFORMATICS TECHNOLOGIES, 2020 (TRDizin)

XXI. ALTAY E., Alatas B.
Dicle Üniversitesi Mühendislik Fakültesi Mühendislik Dergisi, vol.8, no.1, pp.133-145, 2017 (TRDizin)

Books

I. **Investigating the Performance of Machine Learning Methods for Malware Detection**
Akkaya E. S., Varol Altay E.
in: International Congress of Electrical and Computer Engineering, Muhammet Nuri Seyman, Editor, Springer, London/Berlin , Balıkesir, pp.329-340, 2025

II. **Investigating the Performance of Recently Proposed Metaheuristic Optimization Algorithms on Real-World Engineering Design Problems**
Varol Altay E., Polat A. B., Altay O.
in: Optimization and Data Science in Industrial Engineering, A. Mirzazadeh,Zohreh Molamohamadi,Erfan Babaee Tirkolaee,Gerhard-Wilhelm Weber,Kathryn E. Stecke, Editor, Springer, London/Berlin , İstanbul, pp.355-368, 2025

III. **IoT-Based HVAC Optimization Using the RIME Metaheuristic Algorithm**
Varol Altay E., Altay O.
in: Current Concepts and Innovative Research in Computer Sciences and Engineering, ALAYBEYOĞLU AYŞEGÜL, Editor, All Sciences Academy, Konya, pp.72-83, 2025

IV. **Meta-Sezgisel ve Yapay Zeka Yöntemleriyle IoT'de Optimizasyon: Güncel Yaklaşımlar ve Eğilimler (2024-2025)**
ALTAY O., VAROL ALTAY E.
in: Mühendislikte Yeni Yaklaşımlar: Kuram, Yöntem, Uygulama, KALE GÜLSADE, ÖZDEMİR SITKI ALPER, Editor, Duvar Yayınevi, pp.107-122, 2025

V. **Akıllı Binalarda HVAC ve Aydınlatma Sistemlerinin Metasezgisel Optimizasyonu**
Varol Altay E., Altay O.
in: Mühendislikte Kuram ve Uygulamalı Çalışmalar, CENGİZ MEHMET SAİT,EL EMİN, Editor, Duvar Yayınevi, Ankara, pp.42-57, 2025

VI. **Assessment of Grey Wolf Optimizer and Its Variants on Benchmark Functions**
Varol Altay E., Altay O.
in: Lecture Notes in Networks and Systems, Fausto Pedro García Márquez,Akhtar Jamil,Süleyman Eken,Alaa Ali Hameed, Editor, Springer, London/Berlin , Frankfurt, pp.55-66, 2023

VII. **Assessment of Grey Wolf Optimizer and Its Variants on Benchmark Functions**
Varol Altay E., Altay O.
in: Lecture Notes in Networks and Systems, Fausto Pedro García Márquez,Akhtar Jamil,Süleyman Eken,Alaa Ali Hameed, Editor, Springer, London/Berlin , Düsseldorf, pp.55-66, 2023

VIII. **Performance Comparisons of Socially Inspired Metaheuristic Algorithms on Unconstrained Global Optimization**
Varol Altay E., Alataş B.

in: Advances in Computer Communication and Computational Sciences, Sanjiv K. Bhatia,Shailesh Tiwari,Krishn K. Mishra,Munesh C. Trivedi, Editor, Springer, Frankfurt, pp.163-175, 2019

Papers Presented at Peer-Reviewed Scientific Conferences

I. **Dhole Optimization Algorithm-Based Multilayer Perceptron Trainer**
Altay O., Varol Altay E.
6th International Conference on Scientific and Innovative Studies, 9 - 10 December 2025, (Full Text)

II. **IoT-Enabled Adaptive Traffic Signal Optimization Using Runge Kutta Optimization Algorithm**
Varol Altay E., Altay O.
6th International Conference on Scientific and Innovative Studies, 9 - 10 December 2025, (Full Text)

III. **Meta-Sezgisel Algoritmalar Kullanılarak Hepatitis C Veri Seti ÜzerindeÖzellik Seçimi: BGWO, PSO, GA ve SMA Karşılaştırması**
Varol Altay E.
6th International Conference on Contemporary Academic Research, 25 - 26 November 2025, (Full Text)

IV. **Sensor Technologies in Smart Agriculture**
Panpallı A., ALTAY O., VAROL ALTAY E.
3rd International Conference on Recent and Innovative Results in Engineering and Technology, 15 November 2025, (Full Text)

V. **Kablosuz Sensör Ağlarında Enerji Tüketiminin Artificial Protozoa Optimizer ile Optimizasyonu**
VAROL ALTAY E., ALTAY O.
4th International Conference on Modern and Advanced Research, 6 November - 07 September 2025, (Full Text)

VI. **IoT-Based Vehicle Routing Optimization Using Artificial Protozoa Optimizer**
VAROL ALTAY E., ALTAY O.
4th International Conference on Modern and Advanced Research, 6 - 07 November 2025, (Full Text)

VII. **AI-Powered Application for Classifying Recyclable Materials**
Çakır Ş. N., Varol Altay E.
9th International Artificial Intelligence and Data Processing Symposium (IDAP'25), Malatya, Turkey, 6 - 07 September 2025, pp.1-6, (Full Text)

VIII. **TTACM: Optimization Method Based on Triangulation Topology Aggregation with Chaotic Maps**
Mutlu S., Varol Altay E.
1st International Conference on Pioneer and Academic Research, Konya, Turkey, 13 - 14 June 2025, pp.93-99, (Full Text)

IX. **Investigating the Performance of Machine Learning Methods for Malware Detection**
Akkaya E. S., Varol Altay E.
3rd International Congress of Electrical and Computer Engineering (ICECENG'24), Balıkesir, Turkey, 27 - 30 November 2024, (Full Text)

X. **Investigating the Performance of Recently Proposed Metaheuristic Optimization Algorithms on Real-World Engineering Design Problems**
Polat A. B., Varol Altay E., Altay O.
International Conference on Optimization and Data Science in Industrial Engineering (ODSIE 2024), Manisa, Turkey, 7 - 08 November 2024, (Full Text)

XI. **The Impact of the Distance Weighting Function on the Performance of K-Nearest Neighbor Algorithm in Medical Data sets**
Varol Altay E.
3rd International Conference on Innovative Academic Studies, Konya, Turkey, 26 - 28 September 2023, (Full Text)

XII. **Assessment of Grey Wolf Optimizer and Its Variants on Benchmark Functions**
Varol Altay E., Altay O.
International Conference on Computing, Intelligence and Data Analytics, ICCIDA 2022, Kocaeli, Turkey, 16 - 17 September 2022, vol.643 LNNS, pp.55-66, (Full Text)

XIII. **Marine Predators Algorithm for Solving Engineering Design Problems**
Varol Altay E.
2nd International Conference on Applied Engineering and Natural Sciences, Konya, Turkey, 10 - 13 March 2022, (Summary Text)

XIV. **Solution of Process Synthesis Problem Using Metaheuristic Optimization Algorithms**
Altay E.
2022 Innovations in Intelligent Systems and Applications Conference, ASYU 2022, Antalya, Turkey, 7 - 09 September 2022, (Full Text)

XV. **Sensitivity analysis of MODENAR method for mining of numeric association rules**
Varol Altay E., Alataş B.
2019 1st International Informatics and Software Engineering Conference (UBMYK), Ankara, Turkey, 6 - 07 November 2019, (Full Text)

XVI. **Multi-objective association analysis of Parkinson disease with intelligent optimization algorithms**
Varol Altay E., Alataş B.
2019 1st International Informatics and Software Engineering Conference (UBMYK), Ankara, Turkey, 6 - 07 November 2019, (Full Text)

XVII. **Makine Öğrenmesi Yöntemleri Kullanarak Sosyal Ağlarda Siber Zorbalığı Tespit Etme**
Varol Altay E., Alataş B.
IEEE International Conference on Big Data, Deep Learning and Fighting with Cyber Terrorism-IBIGDELFT 2018, Ankara, Turkey, 3 - 04 December 2018, (Full Text)

XVIII. **Music Based Metaheuristic Methods for Constrained Optimization**
Varol Altay E., Alataş B.
IEEE 6th International Symposium on Digital Forensic and Security, Ankara, Turkey, 22 - 25 March 2018, (Full Text)

XIX. **Performance Comparisons of Socially Inspired Metaheuristic Algorithms on Unconstrained Global Optimization**
Varol E., Alataş B.
The International Conference on Computational Sciences, Advanced Database and Computing, Phuket, Thailand, 11 - 12 October 2017, (Full Text)

XX. **Performance Comparisons of Chicken Swarm Algorithm with Swarm Inspired Metaheuristic Algorithms in Unconstrained Benchmark Functions**
Varol E., Alataş B.
ICAIE 2017, Elazığ, Turkey, 10 - 12 May 2017, (Full Text)

XXI. **Performance Comparisons of Sports Inspired Metaheuristic Algorithms on Global Optimization**
Varol E., Alataş B.
ICAIE 2017, Elazığ, Turkey, 10 - 12 May 2017, (Full Text)

Funded Projects

Varol Altay E., TUBITAK Project, 2209-A - Üniversite Öğrencileri Araştırma Projeleri Destekleme Programı, Geri Dönüşüm Malzemelerini Ayırt Etmek için Yapay Zeka Destekli Uygulama, 2025 - 2025

BORANDAĞ E., YÜCALAR F., ÖZÇEVİK M., ÇELİKTEN T., AYGÜN İ., VAROL ALTAY E., ASLAN E., ÖZÇİFT A., AYGÜN E. N., ALTAY O., et al., Project Supported by Higher Education Institutions, Dijital Dönüşüm ve Yenilikçi Teknolojiler Çalıştayı, 2023 - 2024

Varol Altay E., TUBITAK Project, 1501 - Industry R & D Projects Support Program, ENDÜSTRİYEL AĞLARDA DAĞITIK MİMARİ VE AUTOML TABANLI YENİ NESİL SALDIRI TESPİT SİSTEMİ, 2022 - 2025

Altay O., VAROL ALTAY E., TUBITAK Project, 1501 - Industry R & D Projects Support Program, Finansal Varlık Analizinin Dijitalleşmesi İçin Akıllı Robotik Süreç Platformu, 2022 - 2025

VAROL ALTAY E., ULAŞ M., TUBITAK Project, Fabrikaların Endüstri 4.0 ile Akıllı Fabrikaya Dönüşümü için IIOT Cihazı Geliştirilmesi, 2021 - 2021

Peer Reviews in Scientific Publications

EVOLUTIONARY INTELLIGENCE, SCI Journal, March 2026
KNOWLEDGE AND INFORMATION SYSTEMS, SCI Journal, December 2025
PEERJ COMPUTER SCIENCE, SCI Journal, May 2024

Metrics

Publication: 50
Citation (WoS): 448
Citation (Scopus): 559
H-Index (WoS): 10
H-Index (Scopus): 11

Congress and Symposium Activities

6th International Conference on Scientific and Innovative Studies ICSIS, Attendee, Konya, Turkey, 2025
6th International Conference on Scientific and Innovative Studies ICSIS 2025, Attendee, Konya, Turkey, 2025
6th International Conference on Contemporary Academic Research ICCAR 2025, Attendee, Konya, Turkey, 2025
4th International Conference on Modern and Advanced Research ICMAR, Attendee, Konya, Turkey, 2025
3rd International Congress of Electrical and Computer Engineering (ICECENG'24), Attendee, Balıkesir, Turkey, 2024
International Conference on Optimization and Data Science in Industrial Engineering (ODSIE 2024), Attendee, İstanbul, Turkey, 2024
1st International Informatics and Software Engineering Conference , Attendee, Ankara, Turkey, 2019
IEEE 6th International Symposium on Digital Forensic and Security, Attendee, Ankara, Turkey, 2018