Assoc. Prof. OĞUZHAN KARAHAN

Personal Information

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International Researcher IDs
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Education Information

Doctorate, Kocaeli University, Mühendislik Fakültesi, Elektronik ve Haberleşme Mühendisliği, Turkey 2007 - 2012
Postgraduate, Kocaeli University, Mühendislik Fakültesi, Mekatronik Mühendisliği, Turkey 2004 - 2007
Undergraduate, Kocaeli University, Teknik Eğitim Fakültesi, Elektronik ve Bilgisayar Eğitimi, Turkey 1996 - 2001

Dissertations

Doctorate, Seri ve paralel robotlarda parçacık sürü optimizasyonu ile yörünge kontrolörü tasarımı, Kocaeli Üniversitesi, Fen Bilimleri Enstitüsü, Elektronik Ve Haberleşme Mühendisliği (Dr), 2012
Postgraduate, S60 robotunun dinamik modelinin çıkarılması, Kocaeli Üniversitesi, Fen Bilimleri Enstitüsü, Mekatronik Mühendisliği (Yl), 2007

Research Areas

Control and System Engineering, Robotics and Mechatronics Systems, System Dynamics and Control, Robotics, Modeling and Simulation of Dynamic Systems

Academic Titles / Tasks

Assistant Professor, Kocaeli University, Mühendislik Fakültesi, Elektronik ve Haberleşme Mühendisliği, 2018 - Continues
Assistant Professor, Kocaeli University, Mühendislik Fakültesi, Elektronik ve Haberleşme Mühendisliği, 2016 - 2018

Academic and Administrative Experience

Deputy Head of Department, Kocaeli University, Mühendislik Fakültesi, Elektronik ve Haberleşme Mühendisliği, 2022 - Continues

Published journal articles indexed by SCI, SSCI, and AHCI

I. **Swarm Intelligence Based Nonlinear Friction and Dynamic Parameters Identification for a 6-DOF Robotic Manipulator**
KARAHAN O., Karci H.
JOURNAL OF INTELLIGENT & ROBOTIC SYSTEMS, vol.108, no.2, 2023 (SCI-Expanded)

II. **Optimal trajectory generation in joint space for 6R industrial serial robots using cuckoo search algorithm**
KARAHAN O., Karci H., TANGEL A.
INTELLIGENT SERVICE ROBOTICS, vol.15, no.5, pp.627-648, 2022 (SCI-Expanded)

III. **Real-time trajectory tracking control of Stewart platform using fractional order fuzzy PID controller optimized by particle swarm algorithm**
Bingül Z., Karahan O.
INDUSTRIAL ROBOT-THE INTERNATIONAL JOURNAL OF ROBOTICS RESEARCH AND APPLICATION, vol.49, no.4, pp.708-725, 2022 (SCI-Expanded)

IV. **Control and Robust Stabilization at Unstable Equilibrium by Fractional Controller for Magnetic Levitation Systems**
Ataşlar-Ayyıldız B., Karahan O., Yılmaz S.
FRACTAL AND FRACTIONAL, vol.5, no.3, 2021 (SCI-Expanded)

V. **Design of optimal fractional order fuzzy PID controller based on cuckoo search algorithm for core power control in molten salt reactors**
KARAHAN O.
PROGRESS IN NUCLEAR ENERGY, vol.139, 2021 (SCI-Expanded)

VI. **A novel performance criterion approach to optimum design of PID controller using cuckoo search algorithm for AVR system**
Bingül Z., Karahan O.
Journal of the Franklin Institute, vol.355, pp.5534-5559, 2018 (SCI-Expanded)

VII. **Comparison of PID and FOPID controllers tuned by PSO and ABC algorithms for unstable and integrating systems with time delay**
Bingül Z., Karahan O.
Optimal Control Applications and Methods, vol.39, pp.1431-1450, 2018 (SCI-Expanded)

VIII. **Fractional PID controllers tuned by evolutionary algorithms for robot trajectory control**
Bingül Z., Karahan O.
TURKISH JOURNAL OF ELECTRICAL ENGINEERING AND COMPUTER SCIENCES, vol.20, pp.1123-1136, 2012 (SCI-Expanded)

IX. **Dynamic identification of Staubli RX-60 robot using PSO and LS methods**
Bingül Z., Karahan O.
EXPERT SYSTEMS WITH APPLICATIONS, vol.38, pp.4136-4149, 2011 (SCI-Expanded)

X. **A Fuzzy Logic Controller tuned with PSO for 2 DOF robot trajectory control**
Bingül Z., Karahan O.
EXPERT SYSTEMS WITH APPLICATIONS, vol.38, pp.1017-1031, 2011 (SCI-Expanded)

Articles Published in Other Journals

I. **Design of Smart Bin based on C# Through Raspberry PI**
Karahan O., Beder B.
Journal of Eskisehir Turkish World Application and Research Center (ESTUDAM) Informatics, vol.4, no.1, pp.1-7, 2023 (Peer-Reviewed Journal)

II. **Time-optimal trajectory generation in joint space for 6R industrial serial robots using Cuckoo search algorithm**
Karahan O., Karci H., Tangel A.
Global Journal of Computer Sciences: Theory and Research, vol.12, no.1, pp.42-54, 2022 (Peer-Reviewed Journal)

III. **Mobile Robot Position Controlling System Based On IoT Through Raspberry Pi**
Karahan O., Hökelek H.
Journal of Intelligent Systems: Theory and Applications, vol.3, no.2, pp.25-30, 2020 (Peer-Reviewed Journal)

IV. **Raspberry Pi Firewall and Intrusion Detection System**
Karahan O., Kaya B.
Journal of Intelligent Systems: Theory and Applications, vol.3, no.2, pp.21-24, 2020 (Peer-Reviewed Journal)

V. **CONTROLLER TUNING APPROACH WITH TLBO ALGORITHM FOR THE AUTOMATIC VOLTAGE REGULATOR SYSTEM**
Ayyıldız B., Karahan O.
Eskişehir Technical University Journal of Science and Technology A - Applied Sciences and Engineering, vol.21, no.1, pp.128-146, 2020 (Peer-Reviewed Journal)

VI. **Design of a MAGLEV System with PID Based Fuzzy Control Using CS Algorithm**
Ataslar-Ayyildiz B., Karahan O.
CYBERNETICS AND INFORMATION TECHNOLOGIES, vol.20, no.5, pp.5-19, 2020 (ESCI)

VII. **APPLICATION OF MULTI-OBJECTIVE CONTROLLER TO OPTIMAL TUNING OF PID PARAMETERS FOR DIFFERENT PROCESS SYSTEMS USING CUCKOO SEARCH ALGORITHM**
Karahan O., Ayyıldız B.
Anadolu University Journal of Science and Technology-A Applied Sciences and Engineering, vol.20, pp.1-16, 2019 (Peer-Reviewed Journal)

Books & Book Chapters

I. **Optimized PID Based Controllers for Improving Transient and Steady State Response of Maglev System**
Karahan O., Ayyıldız B.
in: Advances in Engineering Research, Victoria M. Petrova, Editor, Nova Science Publishers, New-York, pp.149-185, 2020

II. **Swarm intelligence for controller tuning and control of fractional systems**
Bingül Z., Karahan O.
in: Swarm Intelligence - Volume 3: Applications, Ying Tan, Editor, The Institution of Engineering and Technology, London, pp.245-281, 2018

III. **Dynamic Modeling and Simulation of Stewart Platform**
Bingül Z., Karahan O.
in: Serial and Parallel Robot Manipulators: Kinematic Dynamics, Control and Optimization, Serdar Küçük, Editor, INTECH Open, Rijeka, pp.19-41, 2012

Refereed Congress / Symposium Publications in Proceedings

I. **IOT-Based Robot Controlling Using Raspberry Pi**
Karahan O., Hökelek H.
Proceedings of 10th International Symposium onIntelligent Manufacturing and Service Systems, Sakarya, Turkey, 9 - 11 September 2019, pp.706-716

II. **Design and Control of the Two-wheeled Self-Balancing RobotUsing Microcontroller**
Özcan B. C., Karahan O., Ayyildiz B.
Proceedings of 10th International Symposium onIntelligent Manufacturing and Service Systems, Sakarya, Turkey, 9 - 11 September 2019, pp.897-904

III. **Raspberry Pi Firewall and Intrusion Detection System**
Karahan O., Kaya B.
Proceedings of 10th International Symposium onIntelligent Manufacturing and Service Systems, Sakarya, Turkey, 9

- 11 September 2019, pp.523-529

IV. **Trajectory Tracking for The Magnetic Ball Levitation System via Fuzzy PID Control Based on CS Algorithm**
AYYILDIZ B., KARAHAN O.
International Symposium on INnovations in Intelligent SyTems and Applications, INISTA 2019, 3 - 05 July 2019

V. **Optimal Design of Fuzzy PID Controller with CS Algorithm for Trajectory Tracking Control**
Karahan O., Ayyildiz B.
Science and Information Conference SAI 2018: Intelligent Computing, London, United Kingdom, 10 - 12 July 2018, vol.858, pp.174-188

VI. **Tuning of Fractional Order PID Controller using CS Algorithm for Trajectory Tracking Control**
Ayyildiz B., Karahan O.
6th International Conference on Control Engineering Information Technology - CEIT 2018, İstanbul, Turkey, 25 - 27 October 2018, pp.251-256

VII. **Fractional Order Fuzzy PID Tracking Control of Stewart Platform Using PSO**
Karahan O., Bingül Z.
6th International Conference on Control Engineering Information Technology - CEIT 2018, İstanbul, Turkey, 25 - 27 October 2018

VIII. **Parçacık Sürüsü Optimizasyonu Kullanılarak Dönel Ters Sarkaç SisteminBulanık Mantık Tabanlı PID Kontrolü**
KARAHAN O., AYYILDIZ B.
OTOMATİK KONTROL ULUSAL TOPLANTISI, Turkey, 21 - 23 September 2017

IX. **RRP Robotunun PSO Tabanlı Kesir Dereceli PID Kontrolü**
KARAHAN O., ÖZTÜRK S.
OTOMATİK KONTROL ULUSAL TOPLANTISI, Turkey, 21 - 23 September 2017

X. **Kalman Filtresi İle PID DenetleyicininYüz Takibi Sistemine Uygulanması**
KARAHAN O., AYYILDIZ B.
OTOMATİK KONTROL ULUSAL TOPLANTISI, Turkey, 21 - 23 September 2017

XI. **Tuning of fractional PID controllers using PSO algorithm for robot trajectory control**
Bingül Z., Karahan O.
2011 IEEE International Conference on Mechatronics, ICM 2011, İstanbul, Turkey, 13 - 15 April 2011, pp.955-960

XII. **Yüksek Hassasiyetli Stewart Platformunun Kesir Dereceli PID Yöntemiyle Konum Kontrolü ve Yörünge Takibi**
Karahan O., Kizir S., Bingül Z.
TOK2010, İstanbul, Turkey, 21 - 23 September 2010

XIII. **Modelling and Identification of STAUBLI RX-60 Robot**
KARAHAN O., Binguel Z.
IEEE Conference on Robotics, Automation and Mechatronics, Chengdu, China, 21 - 24 September 2008, pp.184-189

Metrics

Publication: 36
Citation (WoS): 483
Citation (Scopus): 702
H-Index (WoS): 7
H-Index (Scopus): 10