Res. Asst. Erhan Yumuk

Personal Information

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Biography

Erhan Yumuk received the B.Sc. degree from the Department of Electronics Engineering of Istanbul Technical University, Istanbul, Turkey, in 2012. He has got another B.Sc. degree from the Department of Control Engineering of the same university as a double major in 2013. He had M.S. degree from the Institute of Science and Technology of the same university on Control and Automation Engineering in 2015. He is currently a Ph.D. student and research assistant in the Department of Control and Automation Engineering of Istanbul Technical University. His research interests include fractional order system control, linear control system theory and process control.

Education Information

Doctorate, Istanbul Technical University, Fen Bilimleri Enstitüsü, Control and Automation Engineering (Dr), Turkey 2015 - Continues
Postgraduate, Istanbul Technical University, Elektrik-Elektronik Fakültesi, Kontrol Ve Otomasyon Mühendisliği (Yl), Turkey 2012 - 2015
Undergraduate Double Major, Istanbul Technical University, Elektrik-Elektronik Fakültesi, Kontrol Mühendisliği, Turkey 2009 - 2013
Undergraduate, Istanbul Technical University, Elektrik-Elektronik Fakültesi, Elektronik Mühendisliği, Turkey 2007 - 2012

Foreign Languages

English, B2 Upper Intermediate

Dissertations

Postgraduate, KESİRLİ MERTEBE TEK KUTUPLU SİSTEM MODELİ İÇİN TAM SAYI MERTEBE PID KONTROLÖR TASARIMI , İstanbul Teknik Üniversitesi, Fen Bilimleri Enstitüsü, Kontrol Ve Otomasyon Mühendisliği, 2015

Research Areas

Information Systems, Communication and Control Engineering, Control and System Engineering, Analysis and Synthesis Methods, Simulation, Modelling and Identification, Optimal Control, System Diagnostics, Engineering and Technology

Academic Titles / Tasks

Research Assistant, Istanbul Technical University, Elektrik-Elektronik Fakültesi, Kontrol Ve Otomasyon Mühendisliği Bölümü, 2013 - Continues

Published journal articles indexed by SCI, SSCI, and AHCI

I. **Online tuning of derivative order term of variable-order fractional proportional-integral-derivative controllers for the first-order time delay systems**
Kurucu M. C., Yumuk E., Güzelkaya M., Eksin İ.
ASIAN JOURNAL OF CONTROL, vol.25, no.4, pp.2628-2640, 2023 (SCI-Expanded)

II. **Reduced inverse integer-order controller design for a class of fractional-order model: Case studyon two-tank liquid-level process**
Yumuk E., Güzelkaya M., Eksin İ.
Proceedings of the Institution of Mechanical Engineers. Part I: Journal of Systems and Control Engineering, vol.237, no.5, pp.815-823, 2023 (SCI-Expanded)

III. **A robust fractional-order controller design with gain and phase margin specifications based on delayed Bode's ideal transfer function**
Yumuk E., Güzelkaya M., Eksin İ.
Journal of the Franklin Institute, vol.359, no.11, pp.5341-5353, 2022 (SCI-Expanded)

IV. **Modified Posicast Control Design Method Based on the Parameters of a Fractional Order System**
Yumuk E., Güzelkaya M., Eksin İ.
JOURNAL OF DYNAMIC SYSTEMS MEASUREMENT AND CONTROL-TRANSACTIONS OF THE ASME, vol.143, no.4, 2021 (SCI-Expanded)

V. **Application of fractional order PI controllers on a magnetic levitation system**
Yumuk E., Güzelkaya M., Eksin İ.
TURKISH JOURNAL OF ELECTRICAL ENGINEERING AND COMPUTER SCIENCES, vol.29, no.1, pp.98-109, 2021 (SCI-Expanded)

VI. **Optimal fractional-order controller design using direct synthesis method**
Yumuk E., Güzelkaya M., Eksin İ.
IET CONTROL THEORY AND APPLICATIONS, vol.14, no.18, pp.2960-2967, 2020 (SCI-Expanded)

VII. **Analytical fractional PID controller design based on Bode's ideal transfer function plus time delay**
Yumuk E., Güzelkaya M., Eksin İ.
ISA Transactions, vol.91, pp.196-206, 2019 (SCI-Expanded)

VIII. **Design of an integer order proportional-integral/proportional-integral-derivative controller based on model parameters of a certain class of fractional order systems**
Yumuk E., Güzelkaya M., Eksin İ.
PROCEEDINGS OF THE INSTITUTION OF MECHANICAL ENGINEERS PART I-JOURNAL OF SYSTEMS AND CONTROL ENGINEERING, vol.233, no.3, pp.320-334, 2019 (SCI-Expanded)

Refereed Congress / Symposium Publications in Proceedings

I. **Online Tuning of Derivative Order Term in Fractional Controllers**
Kurucu M. C., Yumuk E., Güzelkaya M., Eksin İ.
6th International Conference on Control Engineering and Information Technology (CEIT), İstanbul, Turkey, 25 - 27 October 2018

II. **Active Set Method Based Model Predictive Control for a Ball and Beam System**
Nak H., Akkaya Akbatı Ş., Yumuk E.
10th International Conference on Electrical and Electronics Engineering (ELECO), Bursa, Turkey, 30 November -

02 December 2017, pp.871-875

III. **Investigation of the Effects of Fractional and Integer Order Fuzzy Logic PID Controllers on System Performances**
Kurucu M. C., Yumuk E., Güzelkaya M., Eksin B.
10th International Conference on Electrical and Electronics Engineering (ELECO), Bursa, Turkey, 30 November - 02 December 2017, pp.775-779

IV. **Tek Kutuplu Kesirli Mertebe Modeller için İndirgenmiş Tam Sayı Mertebe Ters Kontrolör Tasarımı**
Yumuk E., Güzelkaya M., Eksin İ.
Otomatik Kontrol Ulusal Toplantısı TOK'2016, Eskişehir, Turkey, 29 September - 01 October 2016, pp.413-418

V. **Reduced Integer Order Inverse Controller Design for Single Fractional Pole Model**
Yumuk E., Güzelkaya M., Eksin İ.
24th Mediterranean Conference on Control and Automation (MED), Athens, Greece, 21 - 24 June 2016, pp.148-153

VI. **Design of an integer order PID controller for single fractional order pole model**
Yumuk E., Güzelkaya M., Eksin İ., Ulu C.
IEEE Conference on System, Process and Control, ICSPC 2015, Bandar Sunway, Malaysia, 19 - 20 December 2015, pp.85-90

VII. **Kesirli Mertebe Modeller için Tam Sayı Mertebe Kontrolör Tasarımı**
Yumuk E., Güzelkaya M., Eksin İ.
Otomatik Kontrol Türk Milli Komitesi Ulusal Toplantısı, Denizli, Turkey, 10 - 12 September 2015, pp.839-844

Supported Projects

Güzelkaya M., Yumuk E., Project Supported by Higher Education Institutions, KESİRLİ MERTEBE SİSTEM MODELLERİ İÇİN KONTROLÖR TASARIM YÖNTEMLERİ (CONTROLLER DESIGN METHODOLOGIES FOR FRACTIONAL ORDER SYSTEM MODELS), 2018 - 2022

Metrics

Publication: 29
Citation (WoS): 53
Citation (Scopus): 106
H-Index (WoS): 4
H-Index (Scopus): 5

Scholarships

Yurt İçi Lisans Üstü Bursu Programı, TUBITAK, 2012 - Continues