

Prof. Müjde Güzelkaya

Personal Information

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Education Information

Doctorate, İstanbul Teknik Üniversitesi, Elektrik-Elektronik Fakültesi, Elektrik Mühendisliği Bölümü, Turkey 1985 - 1990

Undergraduate, İstanbul Teknik Üniversitesi, Elektrik-Elektronik Fakültesi, Elektronik Ve Haberleşme Mühendisliği Bölümü, Turkey 1978 - 1982

Foreign Languages

English

Dissertations

Doctorate, Çok girişli sistemlerde sınırlandırılmalı sonlu zaman kontrolü, İstanbul Teknik Üniversitesi, Elektrik-Elektronik Fakültesi, Elektrik Mühendisliği Bölümü, 1990

Research Areas

Technical Sciences, Information Systems, Communication and Control Engineering, Control and System Engineering, Mathematical Techniques, Optimal Control

Academic Titles / Tasks

Professor, İstanbul Teknik Üniversitesi, Elektrik-Elektronik Fakültesi, Kontrol Ve Otomasyon Mühendisliği Bölümü, 2003 - Continues

Associate Professor, İstanbul Teknik Üniversitesi, Elektrik-Elektronik Fakültesi, Kontrol Ve Otomasyon Mühendisliği Bölümü, 1996 - 2003

Assistant Professor, İstanbul Teknik Üniversitesi, Elektrik-Elektronik Fakültesi, Kontrol Ve Otomasyon Mühendisliği Bölümü, 1990 - 1996

Research Assistant, İstanbul Teknik Üniversitesi, Elektrik-Elektronik Fakültesi, Kontrol Ve Otomasyon Mühendisliği Bölümü, 1983 - 1990

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

- I. **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 (Journal Indexed in SCI)
- II. **Fusion of inverse optimal and model predictive control strategies**
Ulusoy L., Güzelkaya M., Eksin İ.

TRANSACTIONS OF THE INSTITUTE OF MEASUREMENT AND CONTROL, vol.42, no.6, pp.1122-1134, 2020 (Journal Indexed in SCI)

- III. **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 (Journal Indexed in SCI)
- IV. **Design of an integer order proportional-integral/proportional-integral-derivative controller based on model parameters of a certain class of fractional order systems**
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PROCEEDINGS OF THE INSTITUTION OF MECHANICAL ENGINEERS PART I-JOURNAL OF SYSTEMS AND CONTROL ENGINEERING, vol.233, no.3, pp.320-334, 2019 (Journal Indexed in SCI)
- V. **Inverse optimal controller based on extended Kalman filter for discrete-time nonlinear systems**
Almobaied M., Eksin İ., Güzelkaya M.
OPTIMAL CONTROL APPLICATIONS & METHODS, vol.39, no.1, pp.19-34, 2018 (Journal Indexed in SCI)
- VI. **An inverse controller design method for interval type-2 fuzzy models**
Kumbasar T., EKSİN İ., GÜZELKAYA M., YESİL E.
SOFT COMPUTING, vol.21, no.10, pp.2665-2686, 2017 (Journal Indexed in SCI)
- VII. **General derivation and analysis for input-output relations in interval type-2 fuzzy logic systems**
Aliasghary M., EKSİN İ., Güzelkaya M., KUMBASAR T.
SOFT COMPUTING, vol.19, no.5, pp.1283-1293, 2015 (Journal Indexed in SCI)
- VIII. **Improved cascade controller design methodology based on outer-loop decomposition**
Cakiroglu O., Güzelkaya M., EKSİN İ.
TRANSACTIONS OF THE INSTITUTE OF MEASUREMENT AND CONTROL, vol.37, no.5, pp.623-635, 2015 (Journal Indexed in SCI)
- IX. **An active fault tolerant control method based on support vector machines**
Ortac-Kabaoglu R., EKSİN İ., YESİL E., Güzelkaya M.
JOURNAL OF INTELLIGENT & FUZZY SYSTEMS, vol.29, no.5, pp.1761-1768, 2015 (Journal Indexed in SCI)
- X. **Exact analytical inversion of TSK fuzzy systems with singleton and linear consequents**
Ulu C., Güzelkaya M., EKSİN İ.
INTERNATIONAL JOURNAL OF APPROXIMATE REASONING, vol.55, no.6, pp.1357-1368, 2014 (Journal Indexed in SCI)
- XI. **A closed form type reduction method for piecewise linear interval type-2 fuzzy sets**
Ulu C., Güzelkaya M., EKSİN İ.
INTERNATIONAL JOURNAL OF APPROXIMATE REASONING, vol.54, no.9, pp.1421-1433, 2013 (Journal Indexed in SCI)
- XII. **Granular type-2 membership functions: A new approach to formation of footprint of uncertainty in type-2 fuzzy sets**
Ulu C., Güzelkaya M., EKSİN İ.
APPLIED SOFT COMPUTING, vol.13, no.8, pp.3713-3728, 2013 (Journal Indexed in SCI)
- XIII. **Exact inversion of decomposable interval type-2 fuzzy logic systems**
Kumbasar T., EKSİN İ., Güzelkaya M., YESİL E.
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- XIV. **Online tuning of fuzzy PID controllers via rule weighing based on normalized acceleration**
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- XV. **Type-2 fuzzy model based controller design for neutralization processes**
Kumbasar T., EKSİN İ., Güzelkaya M., YESİL E.
ISA TRANSACTIONS, vol.51, no.2, pp.277-287, 2012 (Journal Indexed in SCI)
- XVI. **Adaptive fuzzy model based inverse controller design using BB-BC optimization algorithm**
Kumbasar T., EKSİN İ., Güzelkaya M., YESİL E.
EXPERT SYSTEMS WITH APPLICATIONS, vol.38, no.10, pp.12356-12364, 2011 (Journal Indexed in SCI)

- XVII. **Interval type-2 fuzzy inverse controller design in nonlinear IMC structure**
Kumbasar T., EKSİN İ., Güzelkaya M., YESİL E.
ENGINEERING APPLICATIONS OF ARTIFICIAL INTELLIGENCE, vol.24, no.6, pp.996-1005, 2011 (Journal Indexed in SCI)
- XVIII. **An error-based on-line rule weight adjustment method for fuzzy PID controllers**
Karasakal O., Güzelkaya M., EKSİN İ., YESİL E.
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- XIX. **A rule base modification scheme in fuzzy controllers for time-delay systems**
Genc H. M. , YESİL E., EKSİN İ., Güzelkaya M., TEKİN O. A.
EXPERT SYSTEMS WITH APPLICATIONS, vol.36, no.4, pp.8476-8486, 2009 (Journal Indexed in SCI)
- XX. **Linear time-varying sliding surface design based on co-ordinate transformation for high-order systems**
Tokat S., Eksin İ., Güzelkaya M.
TRANSACTIONS OF THE INSTITUTE OF MEASUREMENT AND CONTROL, vol.31, no.1, pp.51-70, 2009 (Journal Indexed in SCI)
- XXI. **Big Bang Big Crunch Optimization Method Based Fuzzy Model Inversion**
KUMBASAR T., GÜZELKAYA M.
Lecture Notes in Computer Science, pp.732-740, 2008 (Journal Indexed in SCI)
- XXII. **Sliding mode control of high order systems using a constant nonlinear sliding surface on a transformed coordinate axis**
Tokat S., Eksin İ., Güzelkaya M.
JOURNAL OF VIBRATION AND CONTROL, vol.14, no.6, pp.909-927, 2008 (Journal Indexed in SCI)
- XXIII. **Set-point regulator with blending mechanism**
Yesil E., Güzelkaya M., EKSİN İ., TEKİN O. A.
INSTRUMENTATION SCIENCE & TECHNOLOGY, vol.36, no.1, pp.1-17, 2008 (Journal Indexed in SCI)
- XXIV. **Online tuning of set point regulator with a blending mechanism using PI controller**
YEŞİL E., Güzelkaya M., EKSİN İ., TEKİN Ö. A.
Turkish Journal of Electrical Engineering and Computer Sciences, Elektrik, vol.16, no.2, pp.143-157, 2008 (Journal Indexed in SCI Expanded)
- XXV. **Cross-coupled ratio control structure**
Yesil E., Guzelkaya M., EKSİN İ., TEKİN O. A.
INSTRUMENTATION SCIENCE & TECHNOLOGY, vol.35, no.5, pp.523-536, 2007 (Journal Indexed in SCI)
- XXVI. **Implementation of a New Self Tuning Fuzzy PIDController on PLC**
KARASAKAL O., YEŞİL E., GÜZELKAYA M., Eksin İ.
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- XXVII. **Self tuning fuzzy PID type load and frequency controller**
Yesil E., Guzelkaya M., Eksin I.
ENERGY CONVERSION AND MANAGEMENT, vol.45, no.3, pp.377-390, 2004 (Journal Indexed in SCI)
- XXVIII. **Self-tuning of PID-type fuzzy logic controller coefficients via relative rate observer**
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- XXIX. **Design of a sliding mode controller with a nonlinear time-varying sliding surface**
Tokat S., Eksin I., GUZELKAYA M., Soylemez M. T.
TRANSACTIONS OF THE INSTITUTE OF MEASUREMENT AND CONTROL, vol.25, no.2, pp.145-162, 2003 (Journal Indexed in SCI)
- XXX. **A new design method for sliding mode controllers using a linear time-varying sliding surface**
Tokat S., Eksin I., Guzelkaya M.
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- XXXI. **A new methodology for deriving the rule-base of a fuzzy logic controller with a new internal**

structure

Eksin I., Guzelkaya M., GURLEYEN F.

ENGINEERING APPLICATIONS OF ARTIFICIAL INTELLIGENCE, vol.14, no.5, pp.617-628, 2001 (Journal Indexed in SCI)

XXXII. **A new methodology for designing a fuzzy logic controller and PI PD blending mechanism**

Güzelkaya M., EKSİN İ., GÜRLEYEN F.

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XXXIII. **Decoupling in singular systems A polynomial equation approach**

GÖREN A. L. , Güzelkaya M.

KYBERNETIKA, vol.32, no.2, pp.185-198, 1996 (Journal Indexed in SCI Expanded)

Articles Published in Other Journals

I. **A Design Methodology and Analysis for Interval Type 2 Fuzzy PI PD Controllers**

MORTAZA A., EKSİN İ., GÜZELKAYA M., KUMBASAR T.

International Journal Of Innovative Computing Information And Control, vol.10, pp.4215-4230, 2013 (Refereed Journals of Other Institutions)

II. **Type-2 fuzzy model inverse controller design based on BB-BC optimization method**

Kumbasar T., Eksin İ., Güzelkaya M., Yesil E.

IFAC Proceedings Volumes (IFAC-PapersOnline), vol.44, pp.5308-5313, 2011 (Refereed Journals of Other Institutions)

Supported Projects

Güzelkaya M., Project Supported by Higher Education Institutions, Lineer Ardillara Sahip Takagi Sugeno Kang Bulanık Sistemlerin Birebir Tersinin Alınması, 2013 - 2018

Güzelkaya M., Project Supported by Higher Education Institutions, ENVANTÖR KONTROL SİSTEMLERİNDE ORAN KONTROL PROBLEMİ, 2009 - 2018

Citations

Total Citations (WOS):653

h-index (WOS):13