

## Asst. Prof. NESLİHAN AVCU

### Personal Information

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### International Researcher IDs

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Publons / Web Of Science ResearcherID: Q-1786-2019

ScopusID: 24723481800

Yoksis Researcher ID: 137704

### Education Information

Doctorate, Dokuz Eylul University, Fen Bilimleri Enstitüsü, Elektrik-Elektronik Mühendisliği (Dr), Turkey 2008 - 2013

Postgraduate, Dokuz Eylul University, Fen Bilimleri Enstitüsü, Elektrik-Elektronik Mühendisliği (YI) (Tezli), Turkey 2006 - 2008

Undergraduate, Anadolu University, Faculty Of Business Administration, Department Of Business, Turkey 2002 - 2008

Undergraduate, Dokuz Eylul University, Mühendislik Fakültesi, Elektrik - Elektronik Mühendisliği Bölümü, Turkey 2001 - 2006

### Dissertations

Doctorate, Analysis of bistability behaviour of lac operon by using systems theory, Dokuz Eylul University, Fen Bilimleri Enstitüsü, Elektrik-Elektronik Mühendisliği (Dr), 2013

Postgraduate, On applications of circuits systems and signal theory in systems biology, Dokuz Eylul University, Fen Bilimleri Enstitüsü, Elektrik-Elektronik Mühendisliği (YI) (Tezli), 2008

### Research Areas

Biomedical Engineering, Electrical and Electronics Engineering

### Academic Titles / Tasks

Assistant Professor, Dokuz Eylul University, Mühendislik Fakültesi, Elektrik - Elektronik Mühendisliği Bölümü, 2021 - Continues

Research Assistant, Dokuz Eylul University, Mühendislik Fakültesi, Elektrik - Elektronik Mühendisliği Bölümü, 2007 - 2022

Research Assistant, University of Edinburgh, Biyoloji Bilimleri Fakültesi, Synthesis Merkezi, 2015 - 2016

Research Assistant, Université Paris 12, Bilim Ve Teknoloji Fakültesi, 2013 - 2014

### Courses

**Doctorate**

Fuzzy Logic, Computing and Control, Doctorate, 2022 - 2023

#### **Postgraduate**

Fuzzy Systems, Postgraduate, 2022 - 2023, 2021 - 2022

#### **Undergraduate**

Development of Reading and Writing Skills, Undergraduate, 2022 - 2023

Control Systems, Undergraduate, 2021 - 2022

Engineering Design, Undergraduate, 2022 - 2023

Artificial Neural Networks, Undergraduate, 2021 - 2022

KPD1001 Career Planning, Undergraduate, 2020 - 2021

EED1009 Development of Reading and Writing Skills, Undergraduate, 2020 - 2021

EED1008 Linear Algebra, Undergraduate, 2019 - 2020

EED1007 Development of Reading and Writing Skills, Undergraduate, 2019 - 2020

#### **Associate Degree**

EOT4000 Elektrik ve Elektronikte Ölçme Teknikleri (ÖÖ), Associate Degree, 2020 - 2021

EOT4000 Elektrik ve Elektronikte Ölçme Teknikleri (İÖ), Associate Degree, 2020 - 2021

### **Published journal articles indexed by SCI, SSCI, and AHCI**

- I. **Bifurcation analysis of bistable and oscillatory dynamics in biological networks using the root-locus method**  
AVCU N., Guzelis C.  
IET SYSTEMS BIOLOGY, vol.13, no.6, pp.333-345, 2019 (SCI-Expanded)
- II. **Aggregation for Computing Multi-Modal Stationary Distributions in 1-D Gene Regulatory Networks**  
AVCU N., Pekergin N., Pekergin F., Guzelis C.  
IEEE-ACM TRANSACTIONS ON COMPUTATIONAL BIOLOGY AND BIOINFORMATICS, vol.15, no.3, pp.813-827, 2018 (SCI-Expanded)
- III. **Discriminant-based bistability analysis of a TMG-induced lac operon model supported with boundedness and local stability results**  
AVCU N., KALAYCI DEMİR G., Pekergin F., ALYÜRÜK H., ÇAVAŞ L., Guzelis C.  
TURKISH JOURNAL OF ELECTRICAL ENGINEERING AND COMPUTER SCIENCES, vol.24, no.3, pp.719-732, 2016 (SCI-Expanded)
- IV. **Determining the bistability parameter ranges of artificially induced lac operon using the root locus method**  
Avcu N., ALYÜRÜK H., KALAYCI DEMİR G., Pekergin F., ÇAVAŞ L., Guzelis C.  
COMPUTERS IN BIOLOGY AND MEDICINE, vol.61, pp.75-91, 2015 (SCI-Expanded)

### **Articles Published in Other Journals**

- I. **Classification of Imbalanced Cardiac Arrhythmia Data**  
Ecemiş C., Avcu N., Sarı Z.  
EUROPEAN JOURNAL OF SCIENCE AND THEOLOGY, no.34, pp.546-552, 2022 (Scopus)
- II. **Fuzzy Controller for Optimization of Operation Time in Washing Machine**  
Avcu N., Çalmaz M. A.  
EUROPEAN JOURNAL OF SCIENCE AND THEOLOGY, no.34, pp.561-567, 2022 (Scopus)

### **Books**

- I. **Coexistence of Deterministic and Stochastic Bistability in a 1-D Birth-Death Process with Hill Type**

## **Nonlinear Birth Rates**

AVCU N., PEKERGİN N., PEKERGİN F., KALAYCI DEMİR G., GÜZELİŞ C.

in: ISCS 2014 Interdisciplinary Symposium on Complex Systems, Ali Sanayei sanayei, Otto E. Rössler, Ivan Zelinka , Editor, Springer International Publishing, pp.77-86, 2015

## **Papers Published in Refereed Scientific Meetings**

- I. **Target Finding Problem Application in Multi-Robot Systems with Reinforcement Learning**  
Çalmaz M. A., Avcu N.  
25.Otomatik Kontrol Ulusal Konferansı (TOK 2024), Konya, Turkey, 12 - 14 September 2024, pp.1-6
- II. **Q-Learning Based Target Finding Problem Application in Multi-Robot Systems**  
Karadal O., Avcu N.  
25.Otomatik Kontrol Ulusal Konferansı (TOK 2024), Konya, Turkey, 12 - 14 September 2024, pp.1-6
- III. **Cardiac Arrhythmia Classifier**  
Ecemiş C., Avcu N., Sarı Z.  
2nd International Conference on Applied Engineering, Konya, Turkey, 10 March - 13 November 2022, pp.489-492
- IV. **Smart Washing Machine**  
Çalmaz M. A., Avcu N.  
2nd International Conference on Applied Engineering and Natural Sciences, Konya, Turkey, 10 - 13 March 2022, pp.485-488
- V. **Stability Analysis of Equilibrium Points of the COVID-19 Model in Optimal Drug Treatment by Geometric Location of Roots Method**  
Avcu N.  
OTOMATİK KONTROL ULUSAL KONGRESİ – TOK 2021, Van, Turkey, 2 - 04 September 2021, pp.18-23
- VI. **Markovian Queueing System with Ordered Entry**  
İŞGÜDER H. O., AVCU N.  
11th International Statistics Days Conference, Muğla, Turkey, 3 - 07 October 2018
- VII. **Numerically Efficient Analysis of a One-Dimensional Stochastic Lac Operon Model**  
AVCU N., Pekergin N., Pekergin F., GÜZELİŞ C.  
30th International Symposium on Computer and Information Sciences (ISCIS), London, Canada, 21 - 24 September 2015, vol.363, pp.261-271
- VIII. **Coexistence of Deterministic and Stochastic Bistability in a 1 D Birth Death Process with Hill Type Nonlinear Birth Rates**  
AVCU N., PEKERGİN N., PEKERGİN F., KALAYCI DEMİR G., GÜZELİŞ C.  
Interdisciplinary Symposium On Complex Systems / Emergence, Complexity AndComputation, Florence, Italy, 15 - 18 September 2014
- IX. **TMG Uyarımlı Bir Lak Operon Modeli İçin Sınırlılık ve Yerel Kararlılık Analizi**  
Avcu N., Kalaycı Demir G., Pekergin F., Alyürük H., Çavaş L., Güzelış C.  
Elektrik-Elektronik ve Bilgisayar Mühendisliği Sempozyumu, Bursa, Turkey, 29 November - 01 December 2012
- X. **Investigating the Effects of the Methods Used in Frequency Domain Measures in Heart Rate Variability Analysis**  
İsler Y., AVCU N., KOCAOĞLU A., KUNTALP M.  
IEEE 16th Signal Processing and Communications Applications Conference, Aydın, Turkey, 20 - 22 April 2008, pp.601-604
- XI. **Musical genre classification using higher-order statistics**  
AVCU N., GÜRKAN KUNTALP D., ALPKOÇAK A.  
IEEE 15th Signal Processing and Communications Applications Conference, Eskişehir, Turkey, 11 - 13 June 2007, pp.826-827

## **Metrics**

Publication: 18

Citation (WoS): 21

Citation (Scopus): 27

H-Index (WoS): 3

H-Index (Scopus): 3