

Assoc. Prof. Murat Okatan

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International Researcher IDs

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Education Information

Doctorate, Boston University, United States Of America 1997 - 2002

Postgraduate, Syracuse University, United States Of America 1995 - 1997

Undergraduate Double Major, Bogazici University, Faculty Of Engineering, Department Of Electrical And Electronics Engineering, Turkey 1990 - 1995

Foreign Languages

French, C2 Mastery

English, C2 Mastery

Dissertations

Doctorate, A stochastic model of mechanisms underlying plasticity in depressing excitatory cortical synapses., Boston University, 2002

Research Areas

Biomedical Engineering, Neurosystems

Academic Titles / Tasks

Assistant Professor, Istanbul Technical University, Bilişim Enstitüsü, Hesaplamalı Bilim Ve Mühendislik, 2019 - Continues

Assistant Professor, Sivas Cumhuriyet University, Sivas Teknik Bilimler Meslek Yüksekokulu, Elektrik Ve Enerji, 2018 - 2019

Assistant Professor, Sivas Cumhuriyet University, Teknoloji Fakültesi, Biyomedikal Mühendisliği Bölümü, 2014 - 2018

Assistant Professor, Sivas Cumhuriyet University, Teknoloji Fakültesi, Mekatronik Mühendisliği Bölümü, 2013 - 2014

Research Assistant PhD, Ankara University, Faculty Of Medicine, Department Of Basic Medical Sciences, 2011 - 2013

Research Assistant PhD, Boston University, 2007 - 2011
Research Assistant PhD, Harvard University, 2003 - 2007
Research Assistant, Boston University, 1997 - 2001
Research Assistant, Syracuse University, 1995 - 1997

Academic and Administrative Experience

Head of Department, Sivas Cumhuriyet University, Teknoloji Fakültesi, Biyomedikal Mühendisliği Bölümü, 2016 - 2017
Head of Department, Sivas Cumhuriyet University, Teknoloji Fakültesi, Biyomedikal Mühendisliği Bölümü, 2014 - 2017
Vice Dean, Sivas Cumhuriyet University, Teknoloji Fakültesi, Biyomedikal Mühendisliği Bölümü, 2013 - 2016

Courses

HBM 597E - Hesaplamalı Bilim ve Mühendislik'te Özel Konular, Postgraduate, 2019 - 2020
BLU621E: Hesaplamalı Sinirbilimi, Doctorate, 2019 - 2020

Published journal articles indexed by SCI, SSCI, and AHCI

- I. **Truncation thresholds: a pair of spike detection thresholds computed using truncated probability distributions**
Okatani M., Kocaturk M.
TURKISH JOURNAL OF ELECTRICAL ENGINEERING AND COMPUTER SCIENCES, vol.25, no.2, pp.1436-1447, 2017 (SCI-Expanded)
- II. **Taller Peaks: an improved spike detection algorithm that simultaneously reduces type I and type II errors for Wave_clus**
Okatan M.
TURKISH JOURNAL OF ELECTRICAL ENGINEERING AND COMPUTER SCIENCES, vol.25, no.4, pp.2583-2594, 2017 (SCI-Expanded)
- III. **Hippocampal cell assemblies: time encoding neurons or goal representations?**
Okatan M.
FRONTIERS IN NEURAL CIRCUITS, vol.4, 2010 (SCI-Expanded)
- IV. **Correlates of Reward-Predictive Value in Learning-Related Hippocampal Neural Activity**
Okatan M.
HIPPOCAMPUS, vol.19, no.5, pp.487-506, 2009 (SCI-Expanded)
- V. **Analyzing functional connectivity using a network likelihood model of ensemble neural spiking activity**
Okatan M., Wilson M., Brown E.
NEURAL COMPUTATION, vol.17, no.9, pp.1927-1961, 2005 (SCI-Expanded)
- VI. **Oscillatory entrainment of striatal neurons in freely moving rats**
Berke J., Okatan M., Skurski J., Eichenbaum H.
NEURON, vol.43, no.6, pp.883-896, 2004 (SCI-Expanded)
- VII. **Frequency-dependent synaptic potentiation, depression and spike timing induced by Hebbian pairing in cortical pyramidal neurons**
Okatan M., Grossberg S.
NEURAL NETWORKS, vol.13, no.7, pp.699-708, 2000 (SCI-Expanded)

Articles Published in Other Journals

I. **Hippocampal conceptual representations and their reward value**

Okatan M.

Frontiers in Systems Neuroscience, vol.4, 2010 (Scopus)

Refereed Congress / Symposium Publications in Proceedings

I. **Using Johnson's SU Distribution for Modeling the Background Activity in Extracellular Neural Recordings**

Ogutcen M. Y., Kocaturk M., Okatan M.

2021 Medical Technologies Congress, TIPTEKNO 2021, Antalya, Turkey, 4 - 06 November 2021

II. **A Python Code for Maximum Likelihood Estimation of the Location and Scale Parameters of the Truncated Normal Distribution**

Ogutcen M. Y., Kocaturk M., Okatan M.

2021 Medical Technologies Congress, TIPTEKNO 2021, Antalya, Turkey, 4 - 06 November 2021

III. **Hücre Dışı Sinirsel Kayıtlardan Verimli Bilgi Çıkarımında Kırpma Eşiklerinin Kullanılabilirliğinin Araştırılması**

DAĞDEVİR E., KOCATÜRK M., OKATAN M.

ELEKTRİK ELEKTRONİK MÜHENDİSLİĞİ KONGRESİ (EEMKON 2019), İstanbul, Turkey, 14 - 16 November 2019

IV. **Comparing different amplitude thresholds in extracellular neural recordings Hücre dışı sinirsel kayıtlarda farklı genlik eşiklerinin karşılaştırılması**

DAĞDEVİR E., Kocaturk M., Okatan M.

27th Signal Processing and Communications Applications Conference, SIU 2019, Sivas, Turkey, 24 - 26 April 2019

V. **Likelihood-based amplitude thresholding in extracellular neural recordings Hücre dışı sinirsel kayıtlarda olabilirliğe dayalı genlik eşikleme**

DAĞDEVİR E., Kocaturk M., Okatan M.

27th Signal Processing and Communications Applications Conference, SIU 2019, Sivas, Turkey, 24 - 26 April 2019

VI. **High Performance Decoding of Behavioral Information from Background Activity in Extracellular Neural Recordings Davranışla İlgili Bilgilerin Hücre Dışı Sinirsel Kayıtlarda Arka Plan Etkinliğinden Yüksek Başarılı Çıkarımı**

Okatan M., Kocaturk M.

2018 Medical Technologies National Congress, TIPTEKNO 2018, Magusa, Cyprus (Gkry), 8 - 10 November 2018

VII. **A comparative study on the estimation of noise standard deviation using DATE and truncation thresholds Gürültü Standart Sapmasının DATE ve Kırpma Eşikleri ile Kestirimi Üzerine Karşılaştırmalı bir Çalışma**

Okatan M.

26th IEEE Signal Processing and Communications Applications Conference, SIU 2018, İzmir, Turkey, 2 - 05 May 2018, pp.1-4

VIII. **Comparison of truncation thresholds with four different robust scale estimators Kırpma Eşikleri'nin Dört Farklı Gürbüz Ölçek Kestirimci ile Kıyaslanması**

Okatan M.

26th IEEE Signal Processing and Communications Applications Conference, SIU 2018, İzmir, Turkey, 2 - 05 May 2018, pp.1-4

IX. **Firing rate dependence of truncation thresholds "kırpma Eşikleri"nin Aksiyon Potansiyeli Sıklığına Bağımliliği Firing Rate Dependence of "truncation Thresholds"**

Okatan M., Kocaturk M.

Medical Technologies National Conference, TIPTEKNO 2015, Bodrum, Turkey, 15 - 18 October 2015

X. **Action potential detection in extracellular recordings using truncation thresholds Hücre Dışı Kayıtlarda Aksiyon Potansiyellerinin "kırpma Eşikleri" Kullanılarak Belirlenmesi**

Okatan M., Kocaturk M.

Medical Technologies National Conference, TIPTEKNO 2015, Bodrum, Turkey, 15 - 18 October 2015

- XI. **Filter phase delay's share in the estimated phase delay Süzgeç evre gecikmesinin kestirilen evre gecikmesindeki pay**
Okatan M.
2013 21st Signal Processing and Communications Applications Conference, SIU 2013, Haspolat, Turkey, 24 - 26 April 2013
- XII. **Phase spectrum of point process recursive filters Noktasal süreç özyineli süzgeç lerinin evre izgesi**
Okatan M.
2012 20th Signal Processing and Communications Applications Conference, SIU 2012, Fethiye, Mugla, Turkey, 18 - 20 April 2012
- XIII. **Reward-predictive value in learning-related hippocampal neural activity**
Okatan M., Komorowski R., Eichenbaum H.
IEEE 35th Annual Northeast Bioengineering Conference, NEBEC 2009, Boston, MA, United States Of America, 3 - 05 April 2009

Supported Projects

- Okatan M., TUBITAK Project, Hücre Dışı Sinirsel Kayıtlardan Verimli Bilgi Çıkarımında Kırpma Eşiklerinin Kullanılabilirliğinin Araştırılması, 2018 - 2020
- Okatan M., Project Supported by Higher Education Institutions, Kırpma eşiklerinin hızlı hesaplanabilmesi için uyarlanı bir algoritmanın geliştirilmesi, 2018 - 2019
- Okatan M., Project Supported by Higher Education Institutions, Hücre Dışı Kayıtlarda Aksiyon Potansiyellerini Belirlemede Kullanılan Gerilim Eşiğinin Hesabı İçin Yeni Bir Yöntem, 2015 - 2016
- Eichenbaum H., Project Supported by Public Organizations in Other Countries, HIPPOCAMPAL AND CORTICAL CODING IN MEMORY, 1995 - 2011
- Eichenbaum H., Project Supported by Public Organizations in Other Countries, NATIONAL INSTITUTE OF MENTAL HEALTH (NIMH - ABD) Silvio O. Conte Center Grant NIH/NIMH MH71702, 2008 - 2009
- Brown E., Project Supported by Public Organizations in Other Countries, Statistical Analysis of Hippocampal Information Encoding, 2000 - 2009
- Brown E., Project Supported by Public Organizations in Other Countries, Dynamic Signal Processing Analyses of Neural Plasticity, 2002 - 2007
- Brown E., Project Supported by Public Organizations in Other Countries, STATISTICAL MODELING OF NEURAL INFORMATION ENCODING, 2000 - 2005
- Grossberg S., Project Supported by Public Organizations in Other Countries, Learning and Intelligent Systems: Neurophysiological, Computational, and Educational Studies of Sequence Learning and Cognitive Planning, 1997 - 2002

Metrics

- Publication: 60
Citation (WoS): 496
Citation (Scopus): 518
H-Index (WoS): 4
H-Index (Scopus): 4

Non Academic Experience

- Neural Arts. Inc. (Boston, Massachusetts, ABD)
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