

Asst. Prof. Mehmet KOCATÜRK

Personal Information

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International Researcher IDs

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Publons / Web Of Science ResearcherID: AAH-5812-2021

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Education Information

Doctorate, Bogazici University, Biyomedikal Mühendisliği Enstitüsü, Biyomedikal Mühendisliği (Dr), Turkey 2007 - 2015

Postgraduate, Bogazici University, Biyomedikal Mühendisliği Enstitüsü, Biyomedikal Mühendisliği (Yl) (Tezli), Turkey 2004 - 2007

Undergraduate, Istanbul Technical University, Elektrik-Elektronik Fakültesi, Elektronik Ve Haberleşme Mühendisliği Bölümü, Turkey 1999 - 2004

Dissertations

Doctorate, A hybrid biological/in silico neural network based brain-machine interface, Bogazici University, Biyomedikal Mühendisliği Enstitüsü, Biyomedikal Mühendisliği (Dr), 2015

Research Areas

Biomedical Engineering, Biosignal Processing, Rehabilitation

Academic Titles / Tasks

Istanbul Medipol University, Mühendislik ve Doğa Bilimleri Fakültesi, Biyomedikal Mühendisliği Bölümü, 2016 - Continues

Courses

Biomedical Instrumentation, Undergraduate, 2022 - 2023

Microprocessors, Undergraduate, 2022 - 2023

Principles of Medical Device Design, Undergraduate, 2022 - 2023

Artificial Neural Networks, Undergraduate, 2022 - 2023

ADVISING THeses

- Mehmet K., A Video Tracking System for Detecting and Restraining Movements of Freely Moving Rodents, Postgraduate, B.ÖZHAN(Student), 2023
- Mehmet K., A Semi-Automated Rodent Behavioral Paradigm for Visuomotor Skill Learning, Postgraduate, H.BULUT(Student), 2023
- Mehmet K., A new rodent behavioral paradigm for studying closed-loop cursor control, Postgraduate, A.AYYAZ(Student), 2022
- Yasemin Y. D., Mehmet K., Design and optimization of a durable gold-based microelectrode for dopamine detection, Postgraduate, B.BWOGI(Student), 2021
- Mehmet K., Design of a multichannel electrophysiology amplifier and a rat behavioral paradigm for motor neuroprosthetic control, Postgraduate, S.MUHAMMAD(Student), 2020
- Mehmet K., Evaluation of dopamine signaling in the rat ventromedial striatum for varying reward proximity, Postgraduate, M.HAZIQ(Student), 2020
- Mehmet K., Design of a voltammetry system for in vivo measurement of dopamine concentration, Postgraduate, R.RIAZ(Student), 2018
- Mehmet K., Neural network-based adaptive myoelectric signal classification via utilization of entropy history, Postgraduate, K.NAZLIHAN(Student), 2017

Published journal articles indexed by SCI, SSCI, and AHCI

- I. **Decoding the Spike-Band Subthreshold Motor Cortical Activity**
Okatan M., KOCATÜRK M.
Journal of Motor Behavior, vol.56, no.2, pp.161-183, 2024 (SCI-Expanded)
- II. **A behavioral paradigm for cortical control of a robotic actuator by freely moving rats in a one-dimensional two-target reaching task**
Zaidi S. M. T., Kocatürk S., Baykaş T., KOCATÜRK M.
Journal of Neuroscience Methods, vol.373, 2022 (SCI-Expanded)
- III. **Truncation thresholds: A pair of spike detection thresholds computed using truncated probability distributions**
Okatan M., KOCATÜRK M.
Turkish Journal of Electrical Engineering and Computer Sciences, vol.25, no.2, pp.1436-1447, 2017 (SCI-Expanded)
- IV. **Toward building hybrid biological/in silico neural networks for motor neuroprosthetic control**
Kocaturk M., Gulcur H. O., Canbeyli R.
Frontiers in Neurorobotics, vol.9, no.AUG, 2015 (SCI-Expanded)

Refereed Congress / Symposium Publications in Proceedings

- I. **Using Johnson's SU Distribution for Modeling the Background Activity in Extracellular Neural Recordings**
Ogutcen M. Y., KOCATÜRK 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., KOCATÜRK M., Okatan M.
2021 Medical Technologies Congress, TIPTEKNO 2021, Antalya, Turkey, 4 - 06 November 2021
- III. **Learned vs. Hand-Crafted Features for Deep Learning Based Aperiodic Laboratory Earthquake Time-Prediction**
Zaidi T., Samy A., KOCATÜRK M., Ates H. F.
28th Signal Processing and Communications Applications Conference, SIU 2020, Gaziantep, Turkey, 5 - 07 October 2020

- IV. **Comparing different amplitude thresholds in extracellular neural recordings Hücre dışı sinirsel kayıtlarda farklı genlik eşiklerinin karşılaştırılması**
DAĞDEVİR E., KOCATÜRK 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., KOCATÜRK 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., KOCATÜRK M.
2018 Medical Technologies National Congress, TIPTEKNO 2018, Magusa, Cyprus (Gkry), 8 - 10 November 2018
- VII. **A microcontroller-based wireless multichannel neural data transmission system**
Mukati M. R., Kocatürk S., KOCATÜRK M., Baykaş T.
21st National Biomedical Engineering Meeting, BIYOMUT 2017, İstanbul, Turkey, 24 - 26 November 2017
- VIII. **Firing rate dependence of truncation thresholds "kırpma Eşikleri"nin Aksiyon Potansiyeli Sıklığına Bağlılığı Firing Rate Dependence of "truncation Thresholds"**
Okatan M., Kocatürk M.
Medical Technologies National Conference, TIPTEKNO 2015, Bodrum, Turkey, 15 - 18 October 2015
- IX. **Action potential detection in extracellular recordings using truncation thresholds Hücre Dışı Kayıtlarda Aksiyon Potansiyellerinin "kırpma Eşikleri" Kullanılarak Belirlenmesi**
Okatan M., Kocatürk M.
Medical Technologies National Conference, TIPTEKNO 2015, Bodrum, Turkey, 15 - 18 October 2015

Supported Projects

- KOCATÜRK M., ÇAĞAVI E., İnsan Uyarılmış Pluripotent Kök Hücre Kaynaklı Kardiyomiyosit ve Duyu Nöron Etkileşiminin Mikroeletrot Dizili Mikroakışkan Sistemde In Vitro İncelenmesi, 2019 - Continues
- KOCATÜRK M., Motor Ve Nöroprotetik Yetenek Öğrenme Sırasında Striatal Dopamin Konsantrasyonu Değişimlerinin Araştırılması, 2018 - Continues
- Yılmaz O., Kocatürk M., Kara E., Öztürk Ş. T., TÜBİTAK Project, Akustik Reflekse Dayalı Utrikül ve Sakkül Fonksiyonları Değerlendirilmesi Sağlayan Cihaz Prototipi Geliştirilmesi, 2024 - 2026
- Kocatürk M., Işcan Z., TÜBİTAK Project, Design of a Brain-Machine Interface Utilizing Neural Correlates of Prediction Error, 2023 - 2026
- KURT H., YÜKSEL DURMAZ Y., KOCATÜRK M., Dopamin Konsantrasyonu Ölçümüne Yönelik Kronik İmplantasyona Uygun Mikroeletrot Dizisi Tasarımı, 2018 - 2022
- KOCATÜRK M., Hücre Dışı Sinirsel Kayıtlardan Verimli Bilgi Çıkarımında Kırpma Eşiklerinin Kullanılabilirliğinin Araştırılması, 2018 - 2020
- KOCATÜRK M., Project Supported by Higher Education Institutions, Kırpma eşiklerinin hızlı hesaplanabilmesi için uyarlanabilir bir algoritmanın geliştirilmesi, 2018 - 2019
- KOCATÜRK M., Biyometrik ve Kablosuz Motor Nöroprotez Tasarımı, 2015 - 2019