IEEE Signal Processing Society
TÜRKİYE CHAPTER

# IEEE SPS Türkiye Chapter
# Emerging Research Topics Seminar Series - I
# Wearable Devices and Artificial Intelligence in Healthcare

**Abstract**: Wearable technologies are becoming increasingly important in modern healthcare due to their potential to enable continuous, non-invasive, and real-time monitoring of physiological signals. The ability to extract meaningful features from these complex physiological signals is critical for developing digital biomarkers—interpretable indicators that reflect normal and pathological processes, as well as treatment responses. Through the integration of advanced sensing hardware, embedded electronics, and intelligent software algorithms, wearable devices support a wide range of applications including cardiovascular monitoring, rehabilitation, elderly care, and remote management of chronic diseases. This talk will outline the end-to-end design stages of a wearable health monitoring system—from hardware development and signal acquisition to data processing and application-specific modeling—and will present illustrative examples from current research initiatives.

**18 June 2025 @ 16:00 (GMT+3)**

**Open live streaming @ "IEEE SPS Turkey" YouTube Channel**
**or participate in the Live Zoom Session https://kocun.zoom.us/j/97398927239**
**(Meeting ID: 973 9892 7239, Passcode: 787284)**

**Bio**: Dr. Beren Semiz is an Assistant Professor of Electrical and Electronics Engineering, and the Director of the Physiological Analysis and Wearable Systems Research Lab at Koc University. Dr. Semiz received her Ph.D. and M.Sc. in Electrical and Computer Engineering from Georgia Institute of Technology (Atlanta, USA) in 2020 and 2018, respectively. Prior to Georgia Institute of Technology, she received her B.Sc. in Electrical and Electronics Engineering from Koc University in 2016, and her high school degree from Robert College in 2012. Her research interests include non-invasive wearable device design, biomedical signal processing, and applied machine learning. Her research projects received mainstream media coverage in the United States, including CNN and Fox; and have led to several publications in major engineering venues and leading medical conferences. Dr. Semiz is a recipient of the Fulbright Scholarship, IEEE Technical Committee on Computational Life Sciences (TCCLS) 2020 PhD Thesis Award, and a CAREER award from TUBITAK in 2021.