

2024 IEEE Healthcare Innovations and Point of Care Technologies (HI-POCT 2024)

**Tucson, Arizona, USA
19-20 September 2024**



**IEEE Catalog Number: CFP24AMA-POD
ISBN: 979-8-3315-0804-3**

**Copyright © 2024 by the Institute of Electrical and Electronics Engineers, Inc.
All Rights Reserved**

Copyright and Reprint Permissions: Abstracting is permitted with credit to the source. Libraries are permitted to photocopy beyond the limit of U.S. copyright law for private use of patrons those articles in this volume that carry a code at the bottom of the first page, provided the per-copy fee indicated in the code is paid through Copyright Clearance Center, 222 Rosewood Drive, Danvers, MA 01923.

For other copying, reprint or republication permission, write to IEEE Copyrights Manager, IEEE Service Center, 445 Hoes Lane, Piscataway, NJ 08854. All rights reserved.

****** This is a print representation of what appears in the IEEE Digital Library. Some format issues inherent in the e-media version may also appear in this print version.***

IEEE Catalog Number:	CFP24AMA-POD
ISBN (Print-On-Demand):	979-8-3315-0804-3
ISBN (Online):	979-8-3315-0803-6

Additional Copies of This Publication Are Available From:

Curran Associates, Inc
57 Morehouse Lane
Red Hook, NY 12571 USA
Phone: (845) 758-0400
Fax: (845) 758-2633
E-mail: curran@proceedings.com
Web: www.proceedings.com

CURRAN ASSOCIATES INC.
proceedings
.com

TABLE OF CONTENTS

Building Healthcare Applications with LiDAR - Real-Time Tissue Identification for Surgery	1
<i>Noan Le Renard, Steven S. Wong, Stamatia Giannarou, Daniele Faccio, Timothy G. Constandinou, Jinendra Ekanayake</i>	
Evaluating Home-Based EEG Systems for Public Health Telemonitoring: A Scoping Review.....	5
<i>Andrew Wong, Ankit Walishetti, Yuan Yang</i>	
Integrating EEG Source Localization and Resnet CNN for Advanced Stroke Rehabilitation.....	9
<i>Sina Makhdoomi Kaviri, Ramana Kumar Vinjamuri</i>	
Decoding EEG for Spinal Cord Injury Rehabilitation: Integrating Source Localization with Residual CNN.....	13
<i>Sina Makhdoomi Kaviri, Ramana Kumar Vinjamuri</i>	
Development and Validation of an AI-Based MWO Digitization and Performance Evaluation Software for a Peruvian National Hospital	17
<i>Alvaro M. Sevilla-Gutiérrez, Jose A. Huaylinos-Guerrero, Valeria Zavaleta-Jave, Diego P. Salvatierra-Guillermo, Ricardo A. Muñoz-Quiroz, Luis D. J. Diaz-Leguizamon, Julissa E. Venancio-Huerta</i>	
Microfluidic-Based Capacitive Biosensor for Multiplex Assay Detection.....	21
<i>Yudong Wang, Niladri Talukder, Kyuhyuk Cha, Bharath Babu Nunna, Eon Soo Lee</i>	
Tadpole: A Framework for Characterizing Temporal Model Data Drifts at the Point-Of-Care.....	25
<i>Sarah Pungitore, Vignesh Subbian</i>	
Noninvasive Smartphone Identification of Atopic Dermatitis Using Autofluorescence Imaging and Machine Learning.....	29
<i>Jocelyn Reynolds, Katelyn Sosnowski, Christine Carlson, Thomas D. McGuire, Will Roman, Jeong-Yeol Yoon</i>	
Low-Cost, Open-Source Colorimetric Platform for Point-Of-Care (POC) Anti-Human Papillomavirus Type 16 (HPV16) Antibody Detection	33
<i>Joshua Eger, Akshansh Kaushik, Tej Patel, Karen S. Anderson, Jennifer Blain Christen</i>	
Out-Of-Hospital Cardiac Arrest Prediction with ECG Features and Shallow Machine Learning Models.....	37
<i>Heiner Castro-Gutierrez, Suranjan Panigrahi, Steven R. Steinhubl</i>	
Development of Low-Cost Single Cardiac System Using Nylon Ripstop Based Conductive Dry ECG Sensor for Resource Constrained Settings.....	41
<i>Natarajan Sriraam, Vishal Akash, Nitu, Chandra Mohan, Vs Prakash</i>	
Colorimetric On-Chip Detection of Human Papillomavirus for Point-Of-Care Settings	45
<i>Siril Arockiam, Vi T. Nguyen, Clifford Anderson, Mark Knappenberger, Karen S. Anderson, Jennifer Blain Christen</i>	
Low-Cost Microfluidic Fluorescence-Based Assay for Screening Viral Diseases at the Point of Care	49
<i>Vi T. Nguyen, Siril Arockiam, Clifford Anderson, Mark Knappenberger, Karen S. Anderson, Jennifer Blain Christen</i>	

Detection of Triple Respiratory Viruses in Saliva Using Multiplexed RT-LAMP on a Machine Learning-Empowered Portable Device.....	53
<i>Aneesh Kshirsagar, Anthony J. Politza, Tianyi Liu, Weihua Guan</i>	
Analysis of Nitrocellulose-Based Solid-State Calibration Standards for Point-Of-Care (PoC) Fluorometers.....	57
<i>Joshua Eger, William Johns, Akshansh Kaushik, Tej Patel, Karen S. Anderson, Jennifer Blain Christen</i>	
Paper-Microfluidic Platform with Cloud-Based Capillary Flow Analysis for Detection of HPV 16 DNA Towards Oropharyngeal Cancer Screening	61
<i>Reid S. Loeffler, Bofan Song, Darya Pershina, Christian Chan, Rongguang Liang, Jeong-Yeol Yoon</i>	
Post-Care Continuum: Predictive Analytics Platform for Continuous Patient Monitoring After Hospital Discharge	65
<i>Pranav Kunderu, Kshitij Purani, Shivm Patel</i>	
Automatic Detection of Anger Based on Gait and Balance from Wearable Mobility Sensors	69
<i>Ajan Ahmed, Stephen Crowell, Ali Boolani, Masudul H. Imtiaz</i>	
Validating mm-Wave Radar System for Fall Detection and Recovery in Washrooms	73
<i>Jenna Hall, Ji Beom Bae, Joshua Visser, Hajar Abedi, George Shaker, Senior Member</i>	

Author Index