IEEE/ACM CHASE 2024 Conference Program

Day 1 (Wednesday, June 19, 2024) – Conference

8:00-8:45	**Breakfast**
8:45-9:00	**Open Remarks) (Christina Ballroom)**
9:00-10:00	**Keynote Speech 1: Dr. Jill Higginson, University of Delaware (Christina Ballroom)**
10:15-11:15	**ACM Health Session (60 minutes) (Christina Ballroom)** 1. Inferring Activity Patterns from Sparse Step Counts Data with Recurrent Neural Networks 2. Self-supervised Representation Learning on Electronic Health Records with Graph Kernel Infomax 3. WalkingWizard - A truly wearable EEG Headset for Everyday Use 4. Passive and Context-Aware In-Home Vital Signs Monitoring Using Co-Located UWB-Depth Sensor Fusion
11:15-11:30	**Coffee Break**
11:30-12:45	**Conference Session I (75 minutes) - Disease Diagnosis and Prediction (Christina Ballroom, Session Chair: Fatima Abu Deeb)** 1. Adaptive Attention Aware Fusion for Human-in-Loop Behavioral Health Detection Martin Brown, Abm Adnan Azmee, Md Abdullah Al Hafiz Khan, Dominic Thomas, Yong Pei, and Monica Nandan, Kennesaw State University 2. Biomarker Trajectory Prediction and Causal Analysis of the Impact of the Covid-19 Pandemic on CVD Patients using Machine Learning Methods Trusting Inekwe, Worcester Polytechnic Institute Winnie Mkandawire, University of Massachusetts Chan Medical School Brian Wee, Havard College Emmanuel Agu, Worcester Polytechnic Institute Andres Colubri, University of Massachusetts Chan Medical School 3. Using Mobile Daily Mood and Anxiety Self-ratings to Predict Depression Symptom Improvement Soumyashree Sahoo, Chinmaey Shende, Md Zakir Hossain, Parit Patel, Xinyu Wang, Md Ishtyaq Mahmud, Jinbo Bi, Jayesh Kamath, Alexander Russell, Dongjin Song, and Bing Wang, University of Connecticut 4. Assessing Perceived Stress, Sleep Disturbance, and Fatigue Among Pilot and Non-Pilot Trainees Samuel Andres Gomez, Sudip Vhaduri, Mark D Wilson, and Julius C Keller, Purdue University 5. Automating Weak Label Generation for Data Programming with Clinicians in the Loop Jean Park, Sydney Pugh, Kaustubh Sridhar, Mengyu Liu, Ramneet Kaur, Souradeep Dutta, Elena Bernadis, Oleg Sokolsky, and Insup Lee, University of Pennsylvania
12:45-14:00	**Lunch**

14:00-15:15	**Conference Session II (75 minutes) - Smart Sensing for Health Applications (Christina Ballroom. Session Chair: Huajie Shao)** 1. Enabling Coexistence of Indoor Millimeter-Wave Networking and Human Activity Sensing Moh Sabbir Saadat, and Sanjib Sur, University of South Carolina 2. M4X: Enhancing Cross-View Generalizability in RF-Based Human Activity Recognition by Exploiting Synthetic Data in Metric Learning Mengjing Liu, Zongxing Xie, and Fan Ye, Stony Brook University 3. Gait-Guard: Turn-aware Freezing of Gait Detection for Non-intrusive Intervention Systems Kenneth Koltermann, and John Clapham, William & Mary GinaMari Blackwell, Virginia Commonwealth University Woosub Jung, Towson University Evie Burnet, Ye Gao, and Huajie Shao, William & Mary Leslie Cloud, and Ingrid Pretzer-Aboff, Virginia Commonwealth University Gang Zhou, William & Mary 4. APC: Contactless Healthy Sitting Posture Monitoring with Microphone Array Kaiyuan Ma, Shunan Song, and Lingling An, Xidian University Shiwen Mao, Auburn University Xuyu Wang, Florida International University 5. UbiHeart: A Novel Approach for Non-Invasive Blood Pressure Monitoring Through Real-Time Facial Video Kazi Shafiul Alam, Sayed Mashroor Mamun, Masud Rabbani, Parama Sridevi, and Sheikh Iqbal Ahamed, Marquette University
15:15-15:30	**Coffee Break**
15:30-16:35	**Short Paper Session 1 (65 minutes) – Smart Sensing for Healthcare** (**Christina Ballroom. Session Chair: Gargi Mitra**) 1. Sound Tagging in Infant-centric Home Soundscapes Mohammad Nur Hossain Khan, and Bashima Islam, Worcester Polytechnic Institute Jialu Li, Nancy L. McElwain, and Mark Hassagawa-Johnson, University of Illinois Urbana-Champaign 2. AudioInsight: Detecting Social Contexts Relevant to Social Anxiety from Speech Varun Reddy, Zhiyuan Wang, Emma R. Toner, Maria A. Larrazabal, Mehdi Boukhechba, Bethany A. Teachman, and Laura E Barnes, University of Virginia 3. Multimodal Speech Recognition using EEG and Audio Signals: A Novel Approach for Enhancing ASR Systems Anarghya Das, and Puru Soni, University at Buffalo (North Campus) Ming-Chun Huang, Duke Kunshan University

	Wenyao Xu, University at Buffalo (North Campus)
	4. Enhancing Dementia Care with Social Robot-Guided Music Interventions Tyler Morris, Sydney Walker, Laython V. Holder, and Eric Vaughan, University of Tennessee Knoxville Darina V. Petrovsky, Rutgers University Sai Swaminathan, and Xiaopeng Zhao, University of Tennessee Knoxville
	5. ToPick: Time-of-Pickup Measurement for the Elderly using Wearables. John Clapham, Ken Koltermann, Xinyu Chen, Minglong Sun, Evie Burnet, and Gang Zhou, William & Mary
16:45-17:50	**Short Paper Session 2 (65 minutes) – Health Data Management** (**Christina Ballroom**, **Session Chair: Ahmed Eltawil**) 1. Semantic Learning and Attention Dynamics for Behavioral Classification in Police Narratives Dinesh Chowdary Attota, Abm adnan Azmee, Md Abdullah Al Hafiz Khan, Yong Pei, Dominic Thomas, and Monica Nandan, Kennesaw State University 2. Automated Scene Classification in Endoscopy Videos Using Convolutional Neural Networks Xiaolong Liang, University of Massachusetts Lowell Shuijiao Chen, Xiangya Hospital of Central South University Qilei Chen, Yu Cao, and Benyuan Liu, University of Massachusetts Lowell Xiaowei Liu, Xiangya Hospital of Central South University 3. A Quantized Parsimonious CNN Model for Sleep Polysomnogram Data Streams Anna Wang Qijia Huang, Duke University 4. Decentralized Electronic Health Records Management via Redactable Blockchain and Revocable IPFS Hao Guo, Northwestern Polytechnical University Wanxin Li, Xi'an Jiaotong-Liverpool University Collin Meese, and Mark Nejad, University of Delaware 5. EQS-Band Human Body Communication through Frequency Hopping and MCU-Based Transmitter Abdelhay Ali, Amr N. Abdelrahman, Abdulkadir Celik, and Ahmed M. Eltawil, King Abdullah University of Science and Technology

Day 2 (Thursday, June 20, 2024) – Conference

7:30-8:30	**Breakfast**

8:30-9:30	**Keynote Speech 2: Dr. Yiran Chen, Duke University (Christina Ballroom)**
9:45-10:30	**Conference Session III (45 minutes) – Therapy and Rehabilitation (Christina Ballroom, Session Chair: Maria Valero)**
	1. Towards User Compliance and Reciprocity Within Human-Robot Interaction Through Completion of a Pregiving Favor
	Reilly Moberg, University of Minnesota Duluth
	Edward Downs, University of Minnesota Duluth
	Abby Shelby, University of Minnesota Duluth
	Arshia Khan, University of Minnesota Duluth
	2. MicroXercise: A Micro-Level Comparative and Explainable System for Remote Physical Therapy
	Hanchen Wang, Vanderbilt University
	Nibraas Khan, Vanderbilt University
	Anna Chen, Vanderbilt University
	Nilanjan Sarkar, Vanderbilt University
	Meiyi Ma, Vanderbilt University
	3. CBSA: A Deep Transfer Learning Framework for Assessing Post-Stroke Exercises
	Manohar Murikipudi, Kennesaw State University
	Abm Adnan Azmee, Kennesaw State University
	Md Abdullah Al Hafiz Khan, Kennesaw State University
	Yong Pei, Kennesaw State University
10:30-10:45	**Coffee Break**
10:45-11:30	**Conference Session IV (45 minutes) - AI for Healthcare (Christina Ballroom, Session Chair: Zhaozhuo Xu)**
	1. ChatDiet: Empowering Personalized Nutrition-Oriented Food Recommender Chatbots through an LLM-Augmented Framework
	Zhongqi Yang, University of California, Irvine
	Elahe Khabiti, University of California, Irvine
	Nitish Nagesh, University of California, Irvine
	Mahyar Abbasian, University of California, Irvine
	Iman Azimi, University of California, Irvine
	Ramesh Jain, University of California, Irvine
	Amir Rahmani, University of California, Irvine
	2. Systematically Assessing the Security Risks of AI/ML-enabled Connected Healthcare Systems
	Mohammed Elnawawy, University of British Columbia

	Mohammadreza Hallajiyan, University of British Columbia
	Gargi Mitra, University of British Columbia
	Shahrear Iqbal, National Research Council
	Karthik Pattabiraman, University of British Columbia
	3. Explainable AI and Transformer Models: Unraveling the Nutritional Influences on Alzheimer's Disease Mortality
	Ziming Liu, University of Tennessee, Knoxville
	Longjian Liu, Drexel University
	Robert E. Heidel, University of Tennessee, Knoxville
	Xiaopeng Zhao, University of Tennessee, Knoxville
11:30-13:00	**Lunch**
13:00-14:30	**NSF-NIH Smart and Connected Health Aspiring PI Workshop** **Program Directors from NSF and NIH** Yamini Goli, National Science Foundation Martin Thomas, National Science Foundation Wolff-Hughes Dana, NIH/NCI Duncan Christopher, NIH/NIEHS Zahavi David, NIH/OD Meghan Hartwick, NIH/NIAID
14:45-15:30	**Lightning Talk**
15:30-15:45	**Coffee Break**
15:45-17:00	**Conference Session V (75 minutes) – Smart Technology for Healthcare (Christina Ballroom**, Session Chair: Weiqian Sun) 1. TinyMSI: A cost-effective handheld device for non-contact diabetic wound monitoring Alexander Gherardi, University at Buffalo, SUNY Tianyu Chen, University at Buffalo, SUNY Huining Li, University at Buffalo, SUNY Jun Xia, University at Buffalo, SUNY Wenyao Xu, University at Buffalo, SUNY 2. Reconstructing Human Gaze Behavior from EEG Using Inverse Reinforcement Learning Jiaqi Gong, University of Alabama Shengting Cao, University of Alabama Soroush Korivand, Southern Methodist University Nader Jalili, Southern Methodist University 3. Illuminating Precise Stencils on Surgical Sites using Projection-based Augmented Reality

	Muhammad Twaha Ibrahim, University of California Irvine
	Lohrasb H. Sayadi, University of California Irvine
	Raj Vyas, University of Califorina Irvine
	M. Gopi, University of Califorina Irvine
	Aditi Majumder, University of Califorina Irvine
	4. ReActHE: a Homomorphic Encryption Friendly Deep Neural Network for Privacy-Preserving Biomedical Prediction
	Chen Song, Temple University
	Xinghua Shi, Temple University
	5. A Deep-Learning-Based Multi-modal ECG and PCG Processing Framework for Label Efficient Heart Sound Segmentation
	Qijia Huang, Duke University
	Huanrui Yang, University of California, Berkeley
	Eric Zeng
	Yiran Chen, Duke University
17:30-19:30	**Award Ceremony, Reception & Demo/Poster Session (Le Chameleon Ballroom)**

Day 3 (Friday, June 21, 2024) Morning: Conference; Afternoon: Workshop

7:45-8:45	**Breakfast**
8:45-9:45	**Keynote Speech 3: Dr. George Demiris, University of Pennsylvania**
10:00 – 11:00	**Conference Session VI (60 minutes) - Health Data Management and Analysis (Christina Ballroom, Session Chair: Sai Praveen Kadiyala)**
	1. EHRFlow: A Visual Analytics Approach to Studying Healthcare professionals' Communication Effectiveness and Efficiency
	Hsiao-Ying Lu, University of California at Davis
	Yiran Li, University of California at Davis
	Kwan-Liu Ma, University of California at Davis
	2. Semi-Path: An Interactive Semi-supervised Learning Framework for Gigapixel Pathology Image Analysis
	Zhengfeng Lai, University of California, Davis
	Joohi Chauhan, University of California, Davis
	Dongjie Chen, University of California, Davis
	Brittany N Dugger, University of California, Davis
	Sen-Ching Cheung, University of Kentucky
	Chen-Nee Chuah, University of California, Davis

	3. Patient Flow Modeling and Simulation to Study HAI Incidents in an Emergency Department Sarawat Murtaza Sara, University of Missouri-Kansas City Ravi Chandra Thota, University of Missouri-Kansas City Md Yusuf Sarwar Uddin, University of Missouri-Kansas City Majid Bani-Yaghoub, University of Missouri-Kansas City Mohamed Nezar Abourraja, Siemens Gamesa Renewable Energy, Vejle, Denmark Gary Sutkin, University of Missouri-Kansas City 4. HealthGAT: Node Classifications in Electronic Health Records using Graph Attention Networks Fahmida Liza Piya, University of Delaware Mehak Gupta, Southern Methodist University Rahmat Beheshti, University of Delaware
11:00-11:15	**Coffee Break**
11:15-12:20	**Short paper Session 3 (65 minutes) – AI/MI for Healthcare (Christina Ballroom, Session Chair: Shawn Li)** 1. Multi-Level Cancer Profiling through Joint Cell-Graph Representations Luis Carlos Rivera Monroy, Friedrich Alexander University Erlangen-Nuremberg Leonhard Rist, Friedrich Alexander University Erlangen-Nuremberg Frauke Wilm, Friedrich Alexander University Erlangen-Nuremberg Christian Ostalecki, Friedrich Alexander University Erlangen-Nuremberg Andreas Baur, Friedrich Alexander University Erlangen-Nuremberg Julio Vera, Friedrich Alexander University Erlangen-Nuremberg Katharina Breininger, Friedrich Alexander University Erlangen-Nuremberg Andreas Maier, Friedrich Alexander University Erlangen-Nuremberg 2. Integrating Wearable Sensor Data and Self-reported Diaries for Personalized Affect Forecasting Zhongqi Yang, University of California, Irvine Yuning Wang, University of Turku Ken S. Yamashita, University of California, Irvine Elahe Khatibi, University of California, Irvine Iman Azimi, University of California, Irvine Nikil Dutt, University of California, Irvine Jessica L. Borelli, University of California, Irvine Amir M. Rahmani, University of California, Irvine

	3. On Large Visual Language Models for Medical Imaging Analysis: An Empirical Study Minh-Hao Van, University of Arkansas Prateek Verma, University of Arkansas Xintao Wu, University of Arkansas 4. Accurate Body Pose Matching for Individuals with Stroke using Siamese Networks Ruslan Gokhman, Yeshiva University Talya Sawdayi, Yeshiva University Rana Khan, Yeshiva University Ashwin Satyanarayana, City Tech, CUNY Ramana Vinjamuri, University of Maryland, Baltimore County Sai Praveen Kadiyala, Yeshiva University 5. Leveraging Large Language Models to Annotate Activities of Daily Living Captured with Egocentric Vision Sloke Shrestha, University of Texas at Austin Edison Thomaz, University of Texas at Austin
12:20-12:45	**Conference Closing:** Farewell from the General Chair **(Christina Ballroom)**
1st Interdisciplinary Workshop on Smart Textile Technologies and Metamaterials for Healthcare	