



Program of the 5th International Workshop on Computer Vision for Physiological Measurement (CVPM)

In conjunction with IEEE-CVPR 2022

Date: June 19, 2022 (half-day workshop, fully virtual/online)

Time zones:

- New Orleans (Central Standard Time) 9 AM – 12 PM (**reference time**)
- Europe (Central, Amsterdam) 16 PM – 19 PM
- Britain (London) 15 PM – 18 PM
- China (Beijing) 22 PM – 1 AM (Day +1, midnight)
- India (New Delhi) 19:30 PM – 00:30 AM (Day +1, midnight)

Zoom link:

- Link: <https://us06web.zoom.us/j/87484990910?pwd=cDdyV2NTa3p2Ri9lNlR6OEpnZjBjZz09>
- Meeting ID: 87484990910
- Password: cvpm22

Talks:

- Invited keynote (60 min): 45 min content + 15 min Q&A
- Oral spotlight (5 min) with group Q&A

Invited keynotes



Keynote by Prof. Achuta Kadambi
University of California, Los Angeles, USA

Title: Pushing out a Pareto Frontier of Performance-Equity via Computational Imaging

Biography: Achuta Kadambi received the PhD degree from MIT in 2018. He joined UCLA in 2018 where he is Assistant Professor jointly of Electrical Engineering and of Computer Science. He has received early career recognitions from NSF (CAREER), DARPA (YFA), ARO (YIP), Forbes (30 under 30), and has cofounded startups in computational imaging and computer vision. Achuta recently co-authored a textbook Computational Imaging, available through MIT Press.



Keynote by Prof. Ashok Veeraraghavan
Rice University, USA

Title: Seeing below the skin for next-generation wearables

Biography: Dr. Veeraraghavan is a Professor of Electrical and Computer Engineering Department at Rice University. He received his B.Tech. in electrical engineering from Indian Institute of Technology, Madras in 2002, and his master's and Ph.D. from the Department of Electrical and Computer Engineering at the University of Maryland, College Park in 2004 and 2008, respectively. Ashok joined the ECE Department in 2010. He was promoted to Associate Professor in 2017 and Professor in 2020

Session 1 Camera based PPG measurement		
Time	Type	Title
9:00 - 10:00 (in the time zone of New Orleans)	Keynote	Prof. Achuta Kadambi Pushing out a Pareto Frontier of Performance-Equity via Computational Imaging
10:00 - 11:15	Oral spotlight (10)	Pruning rPPG Networks: Toward Small Dense Network with Limited Number of Training Samples
		Remote Pulse Estimation in the Presence of Face Masks
		Remote Heart Rate Estimation by Signal Quality Attention Network
		RTrPPG: An Ultra Light 3DCNN for Real-Time Remote Photoplethysmography
		Federated Remote Physiological Measurement with Imperfect Data
		Optimising rPPG Signal Extraction by Exploiting Facial Surface Orientation
		Efficient Remote Photoplethysmography with Temporal Derivative Modules and Time-Shift Invariant Loss
		Perfusion assessment via local remote photoplethysmography (rPPG)
		Gated Recurrent Unit-Based RNNs for Remote Photoplethysmography Signal Segmentation
		Deep Learning Classifier for Advancing Video Monitoring of Atrial Fibrillation
11:15 – 11:30 Coffee break		
Session 2 Camera based blood pressure monitoring		
11:30 – 12:30	Keynote	Prof. Ashok Veeraraghavan Seeing Below the skin for next-generation wearables
12:30 – 13:00	Oral spotlight (3)	Contactless Blood Pressure Measurement via Remote Photoplethysmography with Synthetic Data Generation Using Generative Adversarial Network
		Remote Estimation of Continuous Blood Pressure by a Convolutional Neural Network Trained on Spatial Patterns of Facial Pulse Wave

		Regression of Classification? Reflection on blood pressure prediction from PPG data using Deep Neural Networks in the scope of practical applications
		Group Q&A
Session 3 Camera based activity monitoring		
13:00 – 13:45	Oral spotlight (5)	Multi-modal Transformer for Nurse Activity Recognition
		Should I take a walk? Estimating Energy Expenditure from Video Data
		Human Stools Classification for Gastrointestinal Health based on an Improved ResNet18 Model with Dual Attention Mechanism
		Predicting Mind-Wandering with Facial Videos in Online Lectures
		Strain Detection based on Breath and Motion Features Obtained by a Force Sensor for Smart Toilet Systems
		Group Q&A
13:45 – 14:00	Wrap up and Best Paper Awards	