CITeR NSF

PROGRAM REVIEW SPRING 2021

May 5th-6th & 14th, 2021
June 8th & 9th, 2021

Day 1 - New Presentations

Wednesday, May 5th

09:00 - 09:30 **WELCOME & STATE OF CITER**
NSF EVALUATION & SURVEYS

09:30 - 13:30 **NEW PROPOSALS & DISCUSSIONS**
10 MIN EACH PLUS BREAKS

Day 2 - Progress & Std Final Report Presentations

Thursday, May 6th

08:30 - 10:00 **PROGRESS REPORTS**
10:30 - 14:00 **STANDARD FINAL REPORTS**

Affilate Advisory Board (AAB) Meeting

Friday, May 14th, 10:00 to 12:30

Special Project Final Reports - June 2021

Tuesday, June 8th
SESSION 1 - 09:00 TO 11:30

Wednesday, June 9th
SESSION 2 - 13:00 TO 15:30

Please Note: All meeting times are Eastern Daylight Time (EDT)

9:30 **START OF NEW PROJECT PROPOSAL PRESENTATIONS - 10 MINUTE PRESENTATIONS (7 MINUTE ORALS; 3 MINUTES FOR QUESTIONS)**

Fingerprint

CONTACTLESS PALMPRINT RECOGNITION USING A DEEP LEARNING-BASED ALGORITHM
21S-02W, Jeremy Dawson (WVU), Nasser Nasrabadi (WVU), *John McCauley* (WVU)

DETECTION OF OVER-ROTATED BIOMETRIC IMAGES AND INCORRECT LABELING OF FINGERPRINTS
21S-03B, Srirangaraj Setlur (UB), Stephanie Schuckers (CU), Faraz Hussain (CU), *Keivan Bahmani* (CU), Sarwar Murshed (CU)

EVALUATION OF THE PERFORMANCE OF MULTI-FINGER CONTACTLESS FINGERPRINT MATCHING
21S-04W, Jeremy Dawson (WVU), *Ali Dabouei* (WVU)

INVESTIGATE THE EFFORT OF ACOUSTIC COUPLING ON ULTRASONIC FINGERPRINT IMAGING
21S-05B, Jun Xia (UB)

EXPANSION OF CONTACTLESS MOBILE PHONE FINGERPRINT DATASETS
21S-04W, Jeremy Dawson (WVU), Masudul Imtiaz (CU)

10:20 – 11:00 **10 MINUTE DISCUSSION & 30 MINUTE BREAK**

Face

MULTI-CAMERA FACE RECOGNITION WITH QUALITY-BASED ATTENTION MECHANISM
21S-06W, Nasser M. Nasrabadi (WVU), *Moktari Mostofa* (WVU)

DIFFERENTIAL PERFORMANCE MITIGATION IN FACE RECOGNITION BASED ON A NOVEL SKIN REFLECTANCE ESTIMATE
21S-05C, Stephanie Schuckers (CU), Mahesh Banavar (CU), Sabastien Marcel (Idiap)

ATMOSPHERIC TURBULENCE CORRECTION FOR FACE RECOGNITION AT AN EXTREME DISTANCE
21S-01W, Nasser Nasrabadi (WVU), Jeremy Dawson (WVU), Amol Joshi (WVU)

OPEN-SOURCE FACE-AWARE CAPTURE WITH ANTI-SPOOFING FOR SECURING PASSPORT PHOTO CAPTURE
21S-06C, Masudul Imtiaz (CU), S. Hossain (CU), *Keivan Bahmani* (CU), Stephanie Schuckers (CU)

PERIOCULAR FACE RECOGNITION ENHANCED WITH SOFT BIOMETRICS UNDER UNCONSTRAINED ENVIRONMENTS
21S-07W, Nasser M. Nasrabadi (WVU), *Veeru Talreja* (WVU)

11:50 – 12:00 **10 MINUTE DISCUSSION**

12:00   **CONTINUATION OF NEW PROJECT PROPOSAL PRESENTATIONS**

Multimodal

MULTIMODAL VOICE IDENTIFICATION USING MICROPHONE AND RF SENSORS
21S-07B, Wenyao Xu (UB), Ranga Setlur (UB)

COLLECTION OF MULTIMODAL BIOMETRICS OF CHILDREN BY A NOVEL MULTIMODAL IDENTIFICATION SYSTEM
21S-03C, Masudul Imtiaz (CU), M.B.Sarker (CU), Stephanie Schuckers (CU), Anil Jain (MSU)

MULTI-MODAL GAIT AND ANTHROPOMETRIC DATA COLLECTION
21S-06B, Karthik Dantu (UB), Srirangaraj Setlur (UB)

BIOMETRICS AT SCALE: GENERATING LARGE-SCALE SYNTHETIC FINGERPRINT AND IRIS DATASETS
21S-01M, Arun Ross (MSU), Anil K. Jain (MSU)

Security

DEEPFAKE DETECTION WITH BUILT-IN DEFENSE AGAINST ANTI-FORENSICS
21S-01B, Siwei Lyu (UB), Xin Li (WVU), Srirangaraj Setlur (UB)

PERIOCULAR AND AGING: DEEPER UNDERSTANDING OF AGING VARIABILITY ON BIOMETRIC PERFORMANCE
21S-07C, Soumyabrata Dey (CU)

TOWARDS A UNIVERSAL ATTACK DETECTOR FOR AUTOMATED FACE RECOGNITION (AFR) SYSTEMS
21S-02M, Xiaoming Liu (MSU), Anil Jain (MSU)

AN OPEN SOURCE MOBILE APPLICATION FOR DEEP FAKE DETECTION OF A DIGITAL IMAGE AT CELL PHONE.
21S-02C, Masudul Imtiaz (CU), A. B. Sarker (CU), S. Hossain (CU), Soumyabrata. Dey (CU)

13:20 – 13:30   **10 MINUTE DISCUSSION & DAY 1 WRAP**

08:30 - 10:30   **PROGRESS REPORT PRESENTATIONS & DISCUSSION FOLLOWED BY BREAK**

JOINT FACE POSE ESTIMATION AND FRONTALIZATION, 20F-07W
Nasser Nasrabadi (WVU) and Jeremy Dawson (WVU), *Fariborz Taherkhani* (WVU)

HIGH RESOLUTION FACE COMPLETION FOR AUTHENTICATION UNDER THE COVID-19 PANDEMIC, 20F-06W
Gianfranco Doretto (WVU), Don Adjeroh (WVU), *Zaigham Randhawa* (WVU)

DEEPFAKE VIDEO FINGERPRINTING, 20F-03B - SP
Siwei Lyu (SUNY) and Xin Li (WVU)

DIGITALLY ALTERED DATA: FINDING THE ORIGINAL FROM NEAR-DUPLICATE BIOMETRIC IMAGES, 20F-01M-SP
Arun Ross (MSU)

MULTIMODAL FEATURE FUSION FOR AUTOMOBILE ABNORMALITY DETECTION, 20F-09B
Srirangaraj Setlur (UB)

TOUCHLESS FINGERPRINT BIOMETRICS AT BORDER CROSSING WITH USER MOBILE PHONES, 20F-12B
Nalini Ratha (UB)

LEVERAGING FINGER RELATIONSHIPS FOR 2-FINGER AUTHENTICATION ON MOBILE DEVICES, 20F-08B
Sergey Tulyakov (UB)

DEEP DEBLURRING OF FINGERPHOTOS CAPTURED BY SMARTPHONES, 20F-03W
Amol Joshi (WVU), Jeremy Dawson (WVU)

BIOMETRIC DATA CLASSIFICATION FOR LARGE-SCALE DATABASE ERROR DETECTION & CORRECTION, 20F-02W-SP
John Dando (WVU), Jeremy Dawson (WVU), Nasser Nasrabadi (WVU)

TOOLKIT FOR EXPLAINABLE AI IN BIOMETRIC RECOGNITION, 20F-06C
Stephanie Schuckers (CU), Mahesh Banavar (CU), *Keivan Bahmani* (CU)

PRESERVING THE PRIVACY OF FACE EMBEDDINGS IN MODERN FACE RECOGNITION SYSTEMS, 20F-01I
Vedrana Krivokuća Hahn and Sébastien Marcel (Idiap – CH)

Progress reports on delayed final reports....

BIOMETRIC AGING IN CHILDREN, PHASE III (DELAYED FINAL REPORT), 19S-02C
Stephanie Schuckers (CU), *Priyanka Das* (CU), Laura Holsopple (CU)

BIOMETRIC AND BIOGRAPHIC DATA CLEANUP WITH DEDUPLICATION AND QUALITY SCORING, 20S-03W
Guodong Guo (WVU) and Xin Li (WVU)

FASTER AND MORE ACCURATE MOBILE TOUCH DYNAMICS VIA FEATURE SELECTION AND SEQUENCE LEARNING, 19F-03C
Daqing Hou, Mahesh Banavar, Stephanie Schuckers (CU)

COMPARATIVE DETECTION OF FACIAL IMAGE MANIPULATION TECHNIQUES, 20S-03C
Zander Blasingame (CU), Chen Liu (CU)

Standard Project Final Reports - slides will be submitted prior to the sessions
20 minute presentations (15 minute orals; 5 minutes for questions)

10:30   **START OF FINAL REPORT PRESENTATIONS**

CONTACTLESS FINGERPRINT RECOGNITION USING SMARTPHONE CAMERAS
20S-01M, Anil Jain (MSU)

FINGERPRINT SEGMENTATION FOR JUVENILES AND ADULTS
20S-05C, *Keivan Bahmani* (CU), Stephanie Schuckers (CU)

INVESTIGATING CARDIAC WAVEFORM AND RELATED PHYSIOLOGICAL PARAMETERS IN PERSONAL IDENTIFICATION
20S-08B, Jun Xia (UB)

DETECTING DEEPFAKE VIDEOS BY ANALYZING BOTH AUDIO AND VISUAL CUES
20S-02M, Arun Ross (MSU), Xiaoming Liu (MSU)

LIVDET 2021
20S-07CW, *Sandip Purnapatra* (CU), David Yambay (CU), Stephanie Schuckers (CU), Thirimachos Bourlai (WVU)

12:15   **BREAK (30 MINUTES)**

BENCHMARKING VIDEO FACE SUPER-RESOLUTION ALGORITHMS
20S-02W, Nasser Nasrabadi (WVU), Jeremy Dawson (WVU), Moktari Mostofa (WVU)

DIGITIZATION OF 10-PRINT CARD FINGERPRINTS USING CELLPHONE CAMERAS (SPECIAL PROJECT)
20S-07W-SP, Markel Umphrey (WVU) Jeremy Dawson (WVU), Nasser Nasrabadi (WVU)

deylayed final reports from fall 2020...

EVALUATION OF MATCH PERFORMANCE OF LIVESCAN VS. CONTACTLESS MOBILE PHONE FINGERPRINTS
19F-09W, *Brady Williams* (WVU), *John McCauley* (WVU), *John Dando* (WVU), Jeremy Dawson (WVU)

13:45 – 14:00   **FINAL REPORT DISCUSSION & DAY 2 WRAP**

Special Project Final Reports - slides will be submitted prior to the sessions
20 minute presentations (15 minute orals; 5 minutes for questions)

TUESDAY, JUNE 8TH @ 09:00-11:30 - FINAL REPORT SESSION 1

PRIVACY ENHANCING BIOMETRIC SENSORS
20S-03M-SP, Arun Ross (MSU)

HOMOMORPHICALLY ENCRYPTED MATCHING AND SEARCH
20S-04M-SP, Anil Jain (MSU)

PRIVACY-PRESERVING BIOMETRIC-BASED AUTHENTICATION USING SECURE MULTI-PARTY COMPUTATION
20S-08B-SP, Marina Blanton (UB)

REVISITING VOICE BIOMETRIC ENTROPY WITH DEMOGRAPHIC IMPACTS
20S-09B-SP, Wenyao Xu (UB), Srirangaraj (Ranga) Setlur (UB)

VIDEO SERIES EXPANSION--BIOMETRIC RECOGNITION TECHNOLOGY UNDER SCRUTINY: PUBLIC OUTREACH ON TECHNOLOGY FUNDAMENTALS
,20S-12C-SP, Stephanie Schuckers (CU), Laura Holsopple (CU), Daqing Hou (CU), Mahesh Banavar (CU)

DETERMINING THE UNIQUENESS OF FACIAL IMAGES IN LARGE DATASETS
20S-12W-SP, Jeremy Dawson (WVU), Nasser Nasrabadi (WVU), *Uche Osahor* (WVU)

UNDERSTANDING (and MITIGATING) the PUBLIC CONCERNS in BIOMETRIC AUTHENTICATION (Fall 2020 delayed Final)
19F-07B-SP, Wehnyao Xu (UB), Srirangaraj Setlur (UB), Mark Frank (UB)

WEDNESDAY, JUNE 9TH @ 13:00-15:30 - FINAL REPORT SESSION 2

ON THE UNIQUENESS OF FACIAL IDENTITY
20S-05M-SP, Xiaoming Liu (MSU), Anil Jain (MSU)

UNIQUENESS AND PERMANENCE OF IRIS
20S-09CW-SP, *Priyanka Das* (CU), Stephanie Schuckers (CU), Joseph Scufka (CU), Natalia Schmid (WVU), Matt Valenti (WVU)

WAVELET-BASED MORPHED ARTIFACTS DETECTION
20S-13W-SP, Nasser Nasrabadi (WVU), Jeremy Dawson (WVU), *Baaria Chaudhary* (WVU)

DETECTING FACE MORPHING: DATASET CONSTRUCTION AND BENCHMARK EVALUATION
20S-14W-SP, *Jacob Dameron* (WVU), Guodong Guo (WVU), and Xin Li (WVU)

DEEP SPOOF DETECTION FOR TEXT-INDEPENDENT SPEAKER VERIFICATION
20S-05W-SP, Nasser Nasrabadi (WVU), Jeremy Dawson (WVU), *Sobhan Soleymani* (WVU)

DETECTING DEEPFAKES USING PHYSIOLOGICAL, PHYSICAL, AND SIGNAL FEATURES
20S-02B-SP, Siwei Lyu (UB), David Doermann (UB) and Srirangaraj Setlur (UB)

FMONET: FACE MORPHING WITH ADVERSARIAL NETWORKS AND CHALLENGE (Fall 2020 delayed Final)
19F-06B-SP, David Doermann (UB), Ranga Setlur (UB)