

PROGRAM REVIEW FALL 2020

*October 21st - 22nd, 30th
November 10th, 16th, 18th*

Wednesday, October 21st

New Proposal Presentations

8:30 - 09:30* **WELCOME & STATE OF CITeR**
TECHNOLOGY ROADMAP UPDATE
KODY WEST (NORTHROP GRUMMAN)
DAN MCCAUGHERTY (ATHENA SCIENCES)
NSF EVALUATION & SURVEYS

09:30 - 12:45* **NEW PROPOSALS & DISCUSSIONS**
10 MIN EACH PLUS BREAKS

Thursday, October 22nd

New Proposals (continued) Progress Reports

08:30 - 09:40* **NEW PROPOSALS**
09:40 - 13:00* **PROGRESS REPORTS**

*Friday, October 30th, 10am-12pm**

Affiliate Advisory Board (AAB) Meeting

November 10th, 16th, 18th - 9am EST start

Final Report Presentations

Nov 10th, 9am -11:00am
Nov 16th, 9am - 11:00am
Nov 18th, 9am - 12noon

**times are EDT unless otherwise listed*

9:30 **NEW PROPOSAL PRESENTATIONS - 7 MINUTE PRESENTATIONS; 3 MINUTE QUESTIONS**

face

ADVERSARIAL TECHNIQUES FOR MINIMIZE DNN REPRESENTATION IN FACE RECOGNITION, 20F-02C

Chen Liu (CU)

BINARY MOBILENET FOR FACE RECOGNITION ON SMARTPHONES, 20F-01WNasser Nasrabadi (WVU) and *Moktari Mostofa* (WVU)**FACE RECOGNITION AT THE EDGE, 20F-05B**

David Doermann (UB), Srirangaraj Setlur (UB)

JOINT FACE POSE ESTIMATION AND FRONTALIZATION, 20F-07W

Nasser Nasrabadi (WVU) and Jeremy Dawson (WVU)

WHERE IS THE LIMIT FOR FACE SUPER-RESOLUTION (FSR)?, 20F-09W

Xin Li (WVU), Xiaoming Liu (MSU)

10:20 – 11:00 **10 MINUTE DISCUSSION & 30 MINUTE BREAK**11:00 **RESUME NEW PROPOSALS**face &
covid**DATASET & MULTI-TASK CNN FOR AUTOMATED DETECTION OF VIDEO-BASED MASK COMPLIANCE, 20F-04C**Chen Liu (CU), Faraz Hussain (CU), Xiaoming Liu (MSU), Stephanie Schuckers (CU), *Keivan Bahmani* (CU)**HIGH RESOLUTION FACE COMPLETION FOR AUTHENTICATION UNDER THE COVID-19 PANDEMIC, 20F-06W**

Gianfranco Doretto (WVU), Don Adjeroh (WVU)

vulnerability

DEEPPFAKE VIDEO FINGERPRINTING, 20F-03B

Siwei Lyu (SUNY) and Xin Li (WVU)

DIGITALLY ALTERED DATA: FINDING THE ORIGINAL FROM NEAR-DUPLICATE BIOMETRIC IMAGES, 20F-01M

Arun Ross (MSU)

MULTIMODAL FEATURE FUSION FOR AUTOMOBILE ABNORMALITY DETECTION, 20F-09B

Srirangaraj Setlur (UB)

NOISE MODELING FOR MORPHING ATTACK DETECTION, 20F-02M

Xiaoming Liu (MSU)

fingerprint

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*Brady Williams* (WVU), Jeremy Dawson (WVU)12:30 – 12:45 **10 MINUTE DISCUSSION & DAY 1 WRAP-UP**

08:30 NEW PROPOSAL PRESENTATIONS (CON'T) - 7 MIN PRESENTATIONS; 3 MIN QUESTIONS

behavioral,
data &
explainable
AI

A STATE-OF-THE-ART SURVEY OF COMMERCIAL MOBILE BEHAVIORAL BIOMETRIC TECHNOLOGIES, 20F-01C
Daqing Hou (CU), Stephanie Schuckers (CU)

BIOMETRIC DATA CLASSIFICATION FOR LARGE-SCALE DATABASE ERROR DETECTION AND CORRECTION (SPECIAL PROJECT), 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)

privacy

FACIAL IMAGE PRIVACY VIA FACE MANIPULATIONS, 20F-05W
John McCauley (WVU), Jeremy Dawson (WVU)

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

09:20 OPEN DISCUSSION ON ALL PROPOSALS

Progress Reports - Delayed Final Reports

09:40 **PROGRESS REPORT SESSION - DELAYED FINAL REPORTS**
3 minute presentations followed by 3 min questions. Moderator will step through projects in the order listed below.

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

UNDERSTANDING (AND MITIGATING) THE PUBLIC CONCERNS IN BIOMETRIC AUTHENTICATION (DHS SP)
19F-07B-SP, Wehnyao Xu (UB), Srirangaraj Setlur (UB), Mark Frank (UB)

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

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)

10:05 30 MINUTE BREAK

10:35 PROGRESS REPORT SESSION - STANDARD PROJECTS

3 minute presentations followed by 3 min questions. Moderator will step through projects in the order listed below.

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)

BIOMETRIC AND BIOGRAPHIC DATA CLEANUP WITH DEPLICATION AND QUALITY SCORING

20S-03W, Guodong Guo (WVU) and Xin Li (WVU)

INVESTIGATING CARDIAC WAVEFORM AND RELATED PHYSIOLOGICAL PARAMETERS IN PERSONAL IDENTIFICATION

20S-08B, Jun Xia (UB)

DETECTING DEEFAKE 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)

DIGITIZATION OF 10-PRINT CARD FINGERPRINTS USING CELLPHONE CAMERAS (SPECIAL PROJECT)

20S-07W-SP, Markel Umphrey (WVU) Jeremy Dawson (WVU), Nasser Nasrabadi (WVU)

BENCHMARKING VIDEO FACE SUPER-RESOLUTION ALGORITHMS

20S-02W, Nasser Nasrabadi (WVU), Jeremy Dawson (WVU), Moktari Mostofa (WVU)

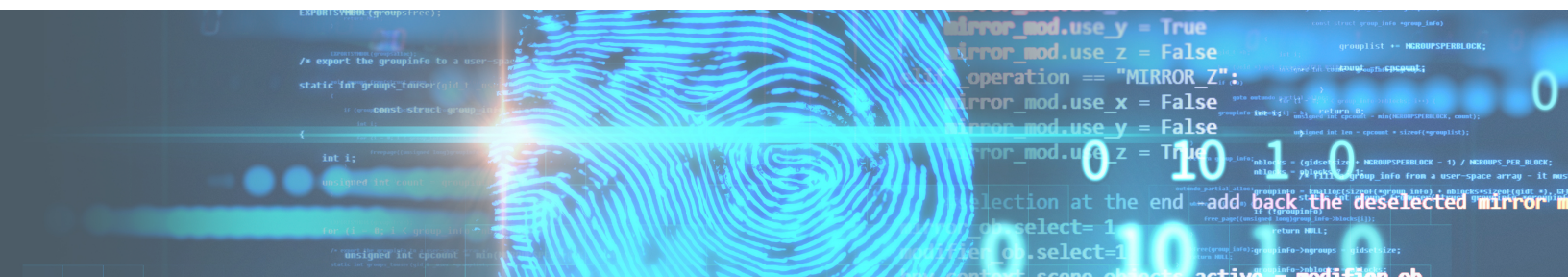
COMPARATIVE DETECTION OF FACIAL IMAGE MANIPULATION TECHNIQUES

20S-03C, Zander Blasingame (CU), Chen Liu (CU)

BIOMETRIC AGING IN CHILDREN, PHASE III

19S-02C, Stephanie Schuckers (CU), Priyanka Das (CU), Laura Holsopple (CU)

11:35 5 MIN GENERAL DISCUSSION ON STANDARD PROGRESS REPORTS



11:40

PROGRESS REPORT SESSION - DHS SPECIAL PROJECTS

3 minute presentations followed by 3 min questions .Moderator will step through projects in the order listed below.

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), *Dennis Murphy* (UB)

REVISITING VOICE BIOMETRIC ENTROPY WITH DEMOGRAPHIC IMPACTS

20S-09B-SP, Wen Yao 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)

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, *Baaria Chaudhry* (WVU), *Poorya Aghdaie* (WVU), Nasser Nasrabadi (WVU), Jeremy Dawson (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, Nasser Nasrabadi (WVU), Jeremy Dawson (WVU), *Sobhan Soleymani* (WVU)

DETECTING DEEPFAKES USING PHYSIOLOGICAL, PHYSICAL, AND SIGNAL FEATURES

20S-02B, Siwei Lyu (UB), David Doermann (UB) and Srirangaraj Setlur (UB)

13:00

END OF PROGRESS REPORTING & END OF PROGRAM REVIEW WRAP-UP

Thank you for attending this portion of the CITeR Fall 2020 Program Review. Join us in November for the Final Reports.

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

TUESDAY, NOVEMBER 10TH, 9AM - 11AM EDT
FINAL REPORT SESSION 1

FEDERATED BIOMETRICS TOWARDS A TRUSTWORTHY SOLUTION TO DATA PRIVACY

19F-07W, Guodong Guo (WVU)

AGE INVARIANT FACE RECOGNITION IN CHILDREN

19F-05C, Stephanie Schuckers (CU), Xin Li (WVU), Chen Liu (CU), *Keivan Bahmani* (CU)

HOW TO ASSESS FACE IMAGE QUALITY WITH DEEP LEARNING

19F-08W, Guodong Guo (WVU)

NON-CONTACT FINGERPRINT PRESENTATION ATTACKS AND DETECTION (GATEWAY)

19F-08C, Stephanie Schuckers (CU), Arun Ross (MSU)

DEEP CROSS-SPECTRAL IRIS MATCHING: HIGH-RESOLUTION VISIBLE IRIS AGAINST LOW-RESOLUTION NIR IRIS

19F-01W, *Moktari Mostofa* (WVU), Jeremy Dawson (WVU), Nasser Nasrabadi (WVU)

FAIRNESS OF FACE RECOGNITION AGAINST SOCIAL COVARIATES

19F-01i-G, Tiago de Freitas Pereira (Idiap Research Institute), Sébastien Marcel (Idiap Research Institute)

MONDAY, NOVEMBER 16TH, 9AM - 11AM EDT
FINAL REPORT SESSION 2

MULTISPECTRAL ANTI-SPOOFING AND LIVENESS DETECTION BASED ON THE FRONT-VIEW CAMERA AND SCREEN OF A SMARTPHONE

19F-01B, Jun Xia (UB)

DEEP FINGERPRINT MATCHING FROM CONTACTLESS TO CONTACT FINGERPRINTS FOR INCREASED INTEROPERABILITY (GATEWAY)

19F-10W-G, Jeremy Dawson (WVU), Nasser Nasrabadi (WVU), Ali Dabouei (WVU)

ABNORMALITY DETECTION FROM AUTOMOBILE AUDIO USING SPECTROGRAPHY (GATEWAY)

19F-05B-G, Nishant Sankaran (UB), Deen Dayal Mohan (UB), Srirangaraj Setlur (UB)

LEVERAGING BIOMETRICS AND SMART CONTRACTS TO CONTROL ACCESS TO INTERNET OF THINGS (delayed Final Report)

19S-01C, Yaoqing Liu (FDU), Stephanie Schuckers (CU)

INVESTIGATING A HARDNESS-SENSITIVE TACTILE FINGERPRINT SCANNER FOR FAKE-FINGER DETECTION (delayed Final Report)

19S-03B, Wenya Xu (UB), Zhanpeng Jin (UB), Srirangaraj Setlur (UB)

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

WEDNESDAY, NOVEMBER 18TH, 9AM-12NOON EDT
DHS SPECIAL PROJECT FINAL REPORT SESSION

MITIGATION OF DEMOGRAPHIC VARIABILITY IN FACE RECOGNITION USING RELATIVE SKIN REFLECTANCE TRAINED WITH A DIRECT MEASURE OF SKIN REFLECTANCE

19F-08C-SP, Stephanie Schuckers (CU), Mahesh Banavar (CU), *Keivan Bahmani* (CU)

IDENTICAL TWINS AS A BENCHMARK FOR HUMAN FACIAL RECOGNITION

19F-11W-SP, Jeremy Dawson (WVU), Nasser Nasrabadi (WVU)

EVALUATION OF THE EQUITABILITY OF SPEAKER RECOGNITION ALGORITHMS

19F-12W-SP, Jeremy Dawson (WVU), Nasser Nasrabadi (WVU)

FACE QUALITY INDEX ASSESSMENT FOR SENSOR AND SUBJECT-BASED DISTORTIONS

19F-13W-SP, *Fariborz Taherkhani* (WVU), Nasser M. Nasrabadi (WVU), Jeremy Dawson (WVU)

ADVERSARIAL LEARNING BASED APPROACH AGAINST FACE MORPHING ATTACKS

19F-09C-SP, Chen Liu (CU), Stephanie Schuckers (CU), *Zander Blasingame* (CU)

DETECTING MORPHED FACES USING DEEP SIAMESE NETWORK

19F-14W-SP, *Sobhan Soleymani* (WVU), Nasser M. Nasrabadi (WVU), Jeremy Dawson (WVU)

BIOMETRIC RECOGNITION TECHNOLOGY UNDER SCRUTINY: PUBLIC OUTREACH ON TECHNOLOGY FUNDAMENTALS

19F-10C-SP, Stephanie Schuckers (CU), Laura Holsopple, (CU), Daqing Hou (CU), Mahesh Banavar (CU)

FACE INMOTION FOR DISAMBIGUATING DOPPELGANGERS AND TWINS

19F-01M-SP Arun Ross (MSU)

Thank you for attending the CITER Fall 2020 Program Review

