

## PROGRAM REVIEW SPRING 2020

*May 13th & 14th, 2020  
Summer 2020*

### **Program Review, Day 1 - *Wednesday, May 13th***

9:30 - 10:00 **WELCOME & STATE OF CITeR  
NSF EVALUATION & SURVEYS**

10:00 - 14:10 **NEW PROPOSALS & DISCUSSIONS**  
10 MIN EACH PLUS BREAKS

14:20 - 14:30 **CLOSING REMARKS**

### **Program Review, Day 2 - *Thursday, May 14th***

10:00 - 13:10 **NEW PROPOSALS - DHS SPECIAL PROJECTS**

### **Affiliate Advisory Board (AAB) Meeting**

*Friday, June 5th, 10am-12pm EDT*

### **Summer 2020**

**PROGRESS REPORT Q&A SESSIONS - 10AM START, 1HR DURATION**  
JUNE 16TH, 18TH

**DHS PROGRESS REPORT Q&A SESSION - 10AM START, 2HR DURATION**  
JUNE 23RD

**FINAL REPORTS PRESENTATIONS - 10AM START, 1 HR DURATION**  
JULY 2ND - UPDATE ON DELAYED FINAL REPORTS  
JULY 7TH, 9TH, 14TH - FINAL REPORTS

Proposals session - 10 minute presentations (7 minute orals; 3 minutes for questions)

10:00 **START OF NEW PROJECT PRESENTATIONS**

fingerprint

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

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

**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)

behavioral  
&  
performance

**ENSEMBLE LEARNING ASSISTED ONE-CLASS CLASSIFIER APPROACH TOWARDS FACE CLASSIFICATION**

20S-04C, Chen Liu (CU), Xuan Qi (CU)

**ADVERSARIAL TEACHER-STUDENT NETWORKS FOR LEARNING EFFICIENT REPRESENTATIONS OF CONVOLUTIONAL NETWORKS TOWARDS LIGHT-WEIGHT FACE RECOGNITION**

20S-02C, Chen Liu (CU), Zhiliu Yang (CU), Zander Blasingame (CU)

**BIOMETRIC AND BIOGRAPHIC DATA CLEANUP WITH DEPLICATION AND QUALITY SCORING**

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

**A STATE-OF-THE-ART SURVEY OF COMMERCIAL MOBILE BEHAVIORAL BIOMETRIC TECHNOLOGIES**

20S-01C, Daqing Hou (CU), Stephanie Schuckers (CU)

**INVESTIGATING CARDIAC WAVEFORM AND RELATED PHYSIOLOGICAL PARAMETERS IN PERSONAL IDENTIFICATION**

20S-08B, Jun Xia (UB)

11:20 - 11:50 **10 MINUTE DISCUSSION & BREAK**

11:50 **RESUME NEW PROPOSALS**

vulnerabilities

**DEEP SPOOF DETECTION FOR TEXT-INDEPENDENT SPEAKER VERIFICATION**

20S-05W, Nasser Nasrabadi (WVU), Jeremy Dawson (WVU), Sobhan Soleymani (WVU)

**DETECTING DEEPPFAKE VIDEOS BY ANALYZING BOTH AUDIO AND VISUAL CUES**

20S-02M, Arun Ross (MSU), Xiaoming Liu (MSU)

**DETECTING DEEPPFAKES USING PHYSIOLOGICAL, PHYSICAL, AND SIGNAL FEATURES**

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

**LIVDET 2021**

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

**ROBUST AND ATTACK-RESISTANT VOICE IDENTIFICATION TECHNOLOGY USING 5G/WIFI SENSORS**

20S-06B, Wenyao Xu (UB), Srirangaraj Setlur (UB)

- 12:40 **DISCUSSION & BREAK**
- 13:10 **RESUME NEW PROPOSALS**

face &  
iris

**T-SNE INSPIRED RELATIVISTIC FEATURE EMBEDDINGS FOR IMPROVED FACE RECOGNITION.**

20S-07B, Setlur (UB), Venugopal Govindaraju (UB), Nishant Sankaran (UB)

**DEEP OFF-ANGLE IRIS IMAGE FRONTALIZATION**

20S-04W, Jeremy Dawson (WVU), Nasser Nasrabadi (WVU)

**BENCHMARKING VIDEO FACE SUPER-RESOLUTION ALGORITHMS**

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

**UNCONSTRAINED FACE RECOGNITION: CROSS-QUALITY, CROSS-AGE, AND CROSS-FILTERING**

20S-09W, Guodong Guo (WVU) and Xin Li (WVU)

**COMPARATIVE DETECTION OF FACIAL IMAGE MANIPULATION TECHNIQUES**

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

**HUMAN RECOGNITION IN FILTER-BASED IMAGES USING DEEP LEARNING**

20S-06C, Faraz Hussain (CU), Stephanie Schuckers (CU), M. G. Sarwar Murshed (CU)

- 14:10 **DISCUSSION**
- 14:20 **CLOSING REMARKS**
- 14:30 **DAY 1 ENDS**



10:00 AM **START OF NEW PROPOSAL PRESENTATIONS - DHS SPECIAL PROJECTS**

privacy  
enhancing

**FACIAL IMAGE PRIVACY VIA FACE MANIPULATIONS**

20S-11W-SP, Jeremy Dawson (WVU), Nasser Nasrabadi (WVU)

**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)

demographics

**REVISITING VOICE BIOMETRIC ENTROPY WITH DEMOGRAPHIC IMPACTS**

20S-09B-SP, Wenyao Xu (UB), Srirangaraj (Ranga) Setlur (UB)

**ADDRESSING THE DEMOGRAPHIC INFLUENCE ON FACE BIOMETRICS**

20S-15W-SP, Guodong Guo (WVU) and Xin Li (WVU)

11:10 **BREAK**

11:40 **PROPOSALS RESUME**

uniqueness  
&  
face  
morphing

**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, 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)

**TOOLKIT FOR EXPLAINABLE AI IN BIOMETRIC RECOGNITION**

20S-10C-SP, Stephanie Schuckers (CU), Mahesh Banavar (CU), Keivan Bahmani (CU)

other

**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)

**A COMPREHENSIVE SURVEY ON VOICE BIOMETRICS: TECHNOLOGIES, APPLICATIONS AND CHALLENGES**

20S-11B-SP, Wenyao Xu (UB), Srirangaraj Setlur (UB)

13:10 **CLOSING REMARKS**

**Progress Reports - slides will be submitted but not presented, Q & A session only**

**TUESDAY, JUNE 16TH @ 10AM EDT**

Faster and More Accurate Mobile Touch Dynamics Via Feature Selection and Sequence Learning, 19F-03C, Daqing Hou, Mahesh Banavar, Stephanie Schuckers (CU)

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)

Biometric Aging in Children, Phase III, 19S-02C, Stephanie Schuckers (CU), Priyanka Das (CU), Laura Holsopple (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)

Face inMotion for Disambiguating Doppelgangers and Twins, 19F-01M-SP Arun Ross (MSU)

**THURSDAY, JUNE 18TH @ 10AM EDT**

Evaluation of Match Performance of Livescan vs. Contactless Mobile Phone Fingerprints, 19F-09W, Jeremy Dawson (WVU)

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, Nasser Nasrabadi, Ali Dabouei (WVU)

Abnormality Detection from Automobile Audio using Spectrography (Gateway), 19F-05B-G, Nishant Sankaran, Deen Dayal Mohan, Srirangaraj Setlur (UB)

Deep Cross-Spectral Iris Matching: High-Resolution Visible Iris Against Low-Resolution NIR Iris, 19F-01W, Jeremy Dawson (WVU), Nasser Nasrabadi (WVU)

Fairness of Face Recognition against Social Covariates, 19F-01i-G, Tiago de Freitas Pereira, Sébastien Marcel (Idiap Research Institute - CH)

**TUESDAY, JUNE 23RD @ 10AM EDT - DHS SPECIAL PROJECTS (2HRS)**

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 & Nasser Nasrabadi (WVU)

Evaluation of the Equitability of Speaker Recognition Algorithms, 19F-12W-SP Jeremy Dawson & Nasser Nasrabadi (WVU)

Face Quality Index Assessment for Sensor and Subject-Based Distortions, 19F-13W-SP Nasser M. Nasrabadi and Jeremy Dawson (WVU)

Adversarial Learning Based Approach Against Face Morphing Attacks, 19F-09C-SP Chen Liu, Stephanie Schuckers, Zander Blasingame (CU)

Detecting Morphed faces Using Deep Siamese Network, 19F-14W-SP Nasser M. Nasrabadi and Jeremy Dawson (WVU)

Biometric Recognition Technology Under Scrutiny: Public Outreach on Technology Fundamentals, 19F-10C-SP, Stephanie Schuckers, Laura Holsopple, Daqing Hou, Mahesh Banavar

Understanding (and Mitigating) the Public Concerns in Biometric Authentication (DHS Special Project), 19F-07B-SP, Wehnyao Xu, Srirangaraj Setlur, Mark Frank (UB)

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

**THURSDAY, JULY 2 @ 10AM EDT - Q&A, Delayed Spring 2020 Final Reports**

This day will be reserved for a Q&A session for those with delayed Spring 2020 Final Reports.  
A second session will be added if necessary.

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

Three 1-hour long Final Report Sessions have been scheduled and the following final reports have tentatively been assigned to a session. *However, researchers can request a delay due to the COVID-19 situation, therefore, the schedule may change with some final reports being presented at the Fall 2020 meeting. Projects requesting a delay will be required to present a project progress report on Thursday, July 2nd.*

**TUESDAY, JULY 7TH @ 10AM EDT - FINAL REPORT SESSION 1**

**INVESTIGATING A HARDNESS-SENSITIVE TACTILE FINGERPRINT SCANNER FOR FAKE-FINGER DETECTION**

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

**MULTIMODAL DATA COLLECTION TO SUPPORT DOD TESTING AND EVALUATION PROJECTS (SPECIAL PROJECT)**

19S-07W, Jeremy Dawson (WVU)

**LEVERAGING BIOMETRICS AND SMART CONTRACTS TO CONTROL ACCESS TO INTERNET OF THINGS**

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

**THURSDAY, JULY 9TH @ 10AM EDT - FINAL REPORT SESSION 2**

**AN END-TO-END DEEP SUPER-RESOLUTION FACE RECOGNITION SYSTEM IN THE WILD**

19S-03W, Nasser Nasrabadi (WVU), Mokter Mostofa (WVU), Nyma Ferdous (WVU)

**HUMAN AGE ESTIMATION USING GENOMIC DATA**

19S-01W, Don Adjero (WVU), Jeremy Dawson (WVU), Gianfranco Doretto (WVU), Nasser Nasrabadi (WVU)

**ESTIMATION OF AGE OF CHILDREN BASED ON FINGERPRINT IMAGES**

19S-05C, Chenchen Liu (CU), Jeremy Dawson (WVU), Stephanie Schuckers (CU)

**TUESDAY, JULY 14TH @ 10AM EDT - FINAL REPORT SESSION 3**

**DEEP PROFILE-TO-FRONTAL FACE VERIFICATION IN THE WILD**

19S-06W, Fariborz Taherkhani (WVU), Veeru Talreja (WVU), Jeremy Dawson (WVU), Nasser Nasrabadi (WVU)

**ADAPTIVE TEMPLATE POOLING FOR SET BASED FACE RECOGNITION**

19S-02B, Deen Mohan (UB), Nishant Sankaran (UB), Sergey Tulyakov (UB), Srirangaraj Setlur (UB)