FALL 2019

Instructor: Harry Wechsler wechsler@gmu.edu ENG 4448

Biometrics / Identity Management – 80854 – CS 667 001

Art and Design Building L008 – T 4:30 – 7:10

Office Hours: T 3:45 – 4:15 and 7:30 – 8:00

(Tentative) Course Description: Learn basic principles and methods for automatic personal authentication and smart identity management. Biometric technologies include face, fingerprint, iris, and gait recognition. Topics include (1) Biometrics and Forensics, (Modular) System Design and Architectures, Explanation and Prediction, and Learning and Model Selection; (2) Protocols and Standards, Benchmarks and Metrics, Interoperability, Performance Evaluation, and Cross-Validation; (2A) Software Platforms and Hardware; (3) Probability, Bayes and Maximum a Posteriori (MAP) Classification, Naïve Bayes, and Statistics; (4) Image Analysis and Pattern Recognition, (Eigen-Faces) PCA and LDF / Fisher Face Representations, Video Analysis, and Visual Query Answering. Advanced Topics include Data Fusion and Multi-Modal Biometrics, Deep Learning, Generative Adversarial Networks (GAN), De-Identification and Re-Identification, Deep Fakes and Spoofing, Aging and Plastic Surgery, and Transfer Learning. Interoperability covers Data Sets and Demographics, in the Wild Biometric Environments, and Scalability.

(Weekly) Lecture and Discussion: (1) Background and Methods; (2) Critical Thinking; (3) Challenges and Emerging Themes; and (4) Ethics, Privacy, and Security.

https://registrar.gmu.edu/calendars/fall-2019/

First day of classes: August 27

Fall Break: October 15

Last day of classes: December 3

https://registrar.gmu.edu/calendars/fall-2019/final-exams/

Exam Date and Time: T, 12/17, 4:30 – 7:15

Grading

Homework#1 (Face Recognition) Assignment 15%

Homework#2 (Special Topics Report) Assignment 15%

Term (Team) Project (De-Identification and Re-Identification) 30%

Mid-Term 15%

Final 25%

Special Accommodations
If you are a student with a disability, please see your instructor and contact the Office of Disability Services (ODS) at (703) 993-2474. All academic accommodations must be arranged through ODS
http://ods.gmu.edu

Academic Integrity and Honor Code