Novel Biometrics and Analysis

Mark Nixon, John Carter
Cyber Security Centre
University of Southampton

Gait Biometrics

Gait Tunnel

- Very high recognition rates on a database of >300 subjects
- 12 synch. cameras

Identity Tracking By Gait

- CCR: 95% for different cameras

Tracking multiple subjects:

Ear Biometrics

Image Based

- Face
- Ear

Model Based

- Force Field Feature Extraction
- Parts-based model & log-Gabor analysis

Deployment of….

Face and ear

- Accurate 3D model of all possible head shapes.
- Recognition in unconstrained scenarios, where lighting and head pose cannot be controlled

Gait

- Using gait in CCTV
- High resolution face image via gait

Soft Biometrics

Face Retrieval

- Skin colour query
- Sex query

Databases

- Soton Gait Database: 120 subjects
- Multibiometrics DB: 300 subjects
  - Gait, ear, face (video)

Further Info

Chp.7 - Gait

Chp.11 - Ear

www.gait.ecs.soton.ac.uk

Supported by MoD, DARPA, US Army, EU