

Mobio Deliverables

4.1 & 4.2 and 4.5 & 4.6

Coordinated by UNIS

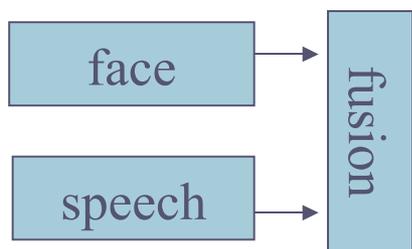


Centre for Vision, Speech and Signal Processing (CVSSP),
School of Electronics and Physical Sciences,
University of Surrey, U.K.



Overview

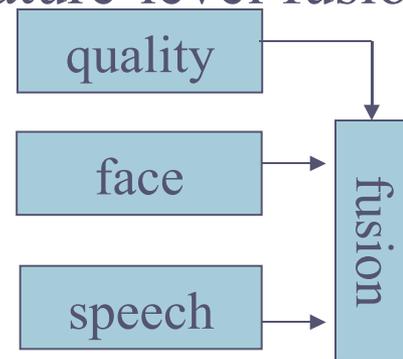
Baseline non-adaptive fusion



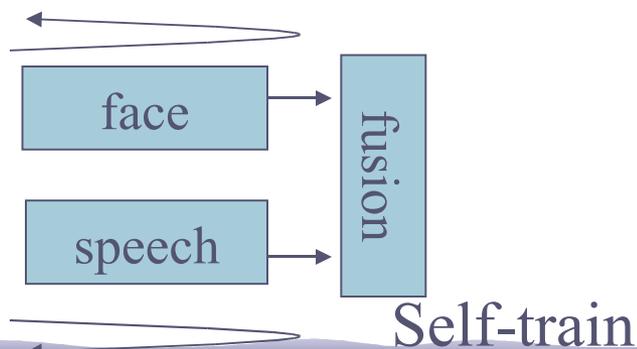
D4.1 (m14) & 4.2 (m18)

Advanced non-adaptive fusion

Feature-level fusion

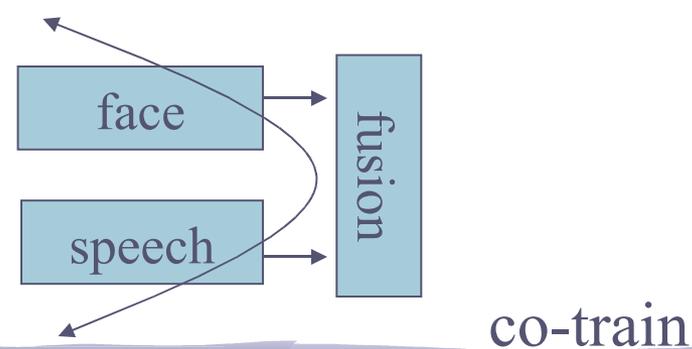


Baseline adaptive fusion

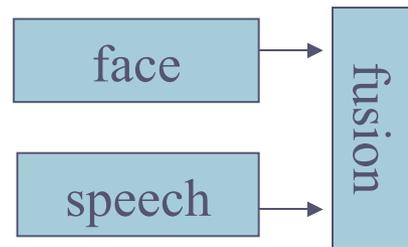


D4.5 (m16) & 4.6 (m20)

Advanced adaptive fusion



Baseline fusion



D4.1 (m14) & 4.2 (m18)

Involved: UNIS, IDIAP



D4.1 Baseline fusion systems

- ☞ Goal: Evaluate the performance of score-level fusion
- ☞ Pre-requisites:
 - Match scores of face and speech systems available
 - Agreed output score format (not crucial)
- ☞ Expected results:
 - Fusion systems (m14)
 - D4.2 report (m18)



Action points

☞ D4.1: systems to submit

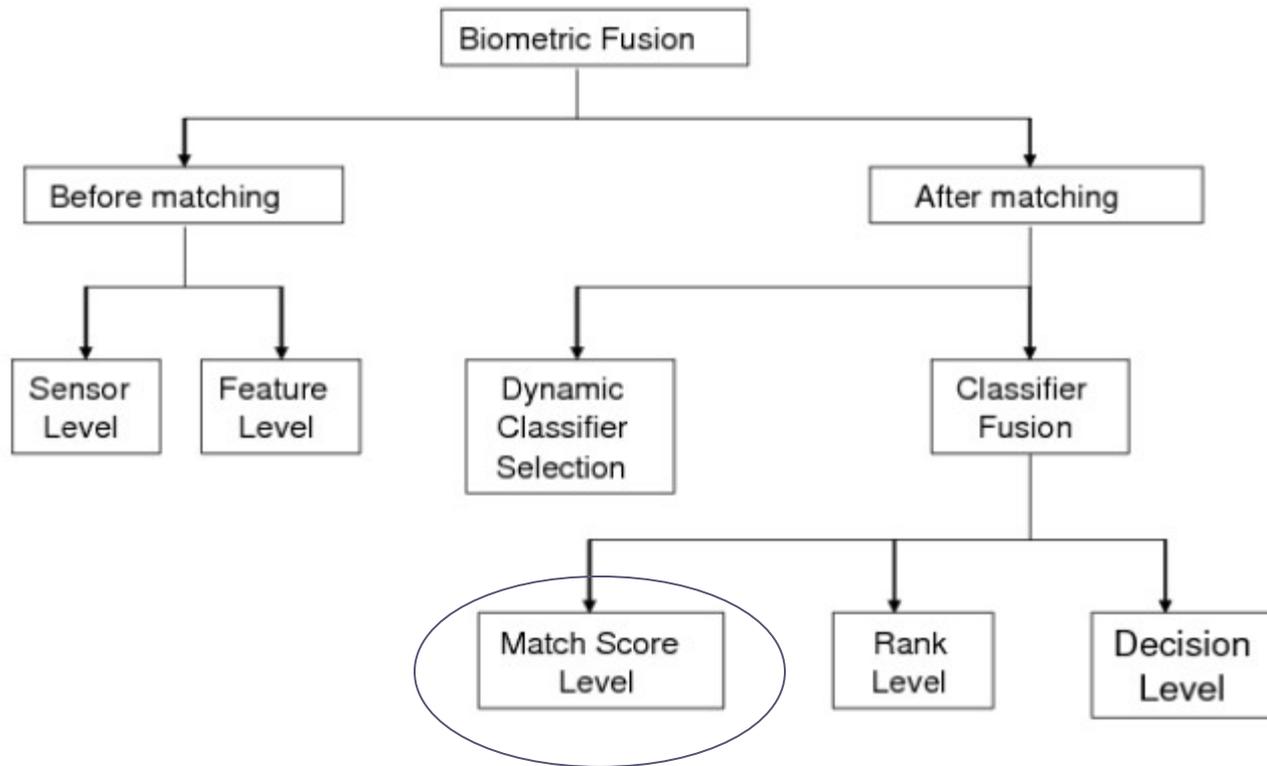
- IDIAP (classifier-based), linear logistic regression
- UNIS (transformation-based)

☞ Tasks

- MOBIO input-output exchange format
- Documentation (user manual) for the software (UNIS/IDIAP)
- Evaluation tool: DET/EPC in Matlab (UNIS)
- Dissemination: SVN
- BANCA protocol P
- Fusion experiment: choose the best face and speech systems (UNIS)



Categorization



Some baseline fusion systems

Transformation-based approach

- When scores are transformed for each system, the fusion design is considered finished
- Transform into posterior probabilities/log-likelihood ratios
- Combine using sum/product

Classifier-based approach

● Linear classifiers

- Weighted sum → weights can be optimised using different approaches: FLD
- Inverse weights
- Logistic regression

● Non-linear classifiers

- MLP/SVM/Decision forest → generally found to be *marginally* better than the linear classifiers

Hybrid

- System outputs are individually transformed; and combined using classifiers



Planning for D4.1 & D4.2

☞ What:

- Task: Investigate different fusion approaches: transformation-based, classifier-based and hybrid approaches
- Deliverables: fusion systems, and (score) data set
- Data set made publicly available?
- Data set: use match scores in D3.2

☞ Who: UNIS, IDIAP

☞ When: end of march (D4.1), end of April (D4.2)

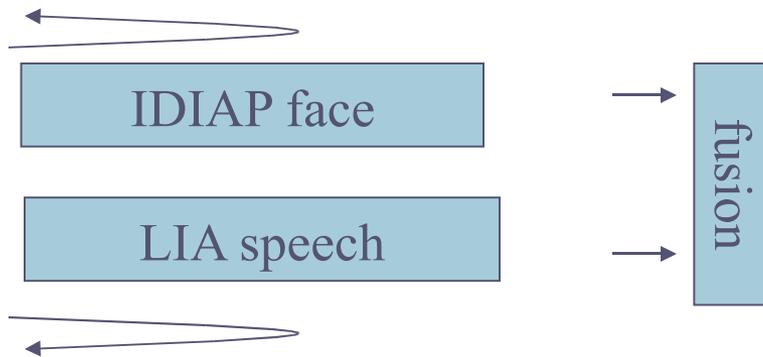


D4.2 Report on the baseline fusion

1. The state-of-the-art on score-level fusion (UNIS)
2. Baseline fusion systems
 1. Linear logistic regression (IDIAP)
 2. Transformation-based, fixed rules (UNIS)
 3. Offline discussion
3. Data set, experimental protocols and evaluation methods (UNIS)
 1. Description of baseline systems – refer to D3.2
4. Results
5. Conclusions



Adaptive baseline systems



Self-train

D4.5 (m16) & 4.6 (m20)



Planning for D4.5 & D4.6

What:

- Task: Investigate baseline adaptive systems
- Draft of the BANCA P protocol – needs to introduce the ordering of test (Chris, Dris & Norman), End of Feb
 - 50% and 50% possibly client or impostors (proportion of client/impostor matter!)
 - With knowledge (oracle)
 - With only impostors in the beginning
 - With only clients first in the beginning
 - Evaluation: (UNIS)
 - in the usual way
 - Proposal of the format
 - A tool to plot the evaluation of performance thru' time (UNIS), summer
- Deliverables:
 - Adaptive speech baseline system (UAPV, end of May)
 - Adaptive face baseline system (UNIS-LBP-FLD???, IDIAP – GMM/DCT, end of May)

Who: UAPV, UNIS, IDIAP, UOULU

When: m16, m20

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D4.6 Report on the baseline adaptive systems – similar to D4.2 [KIV for next meeting]

1. The state-of-the-art on adaptive score-level fusion
2. Description of baseline systems
 1. Face -- IDIAP
 2. Speech -- UAPV
3. Experimental protocols
4. Performance Evaluation
5. Conclusions



