TWO-STAGE FACIAL AGE PREDICTION USING GROUP-SPECIFIC FEATURES

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Introduction
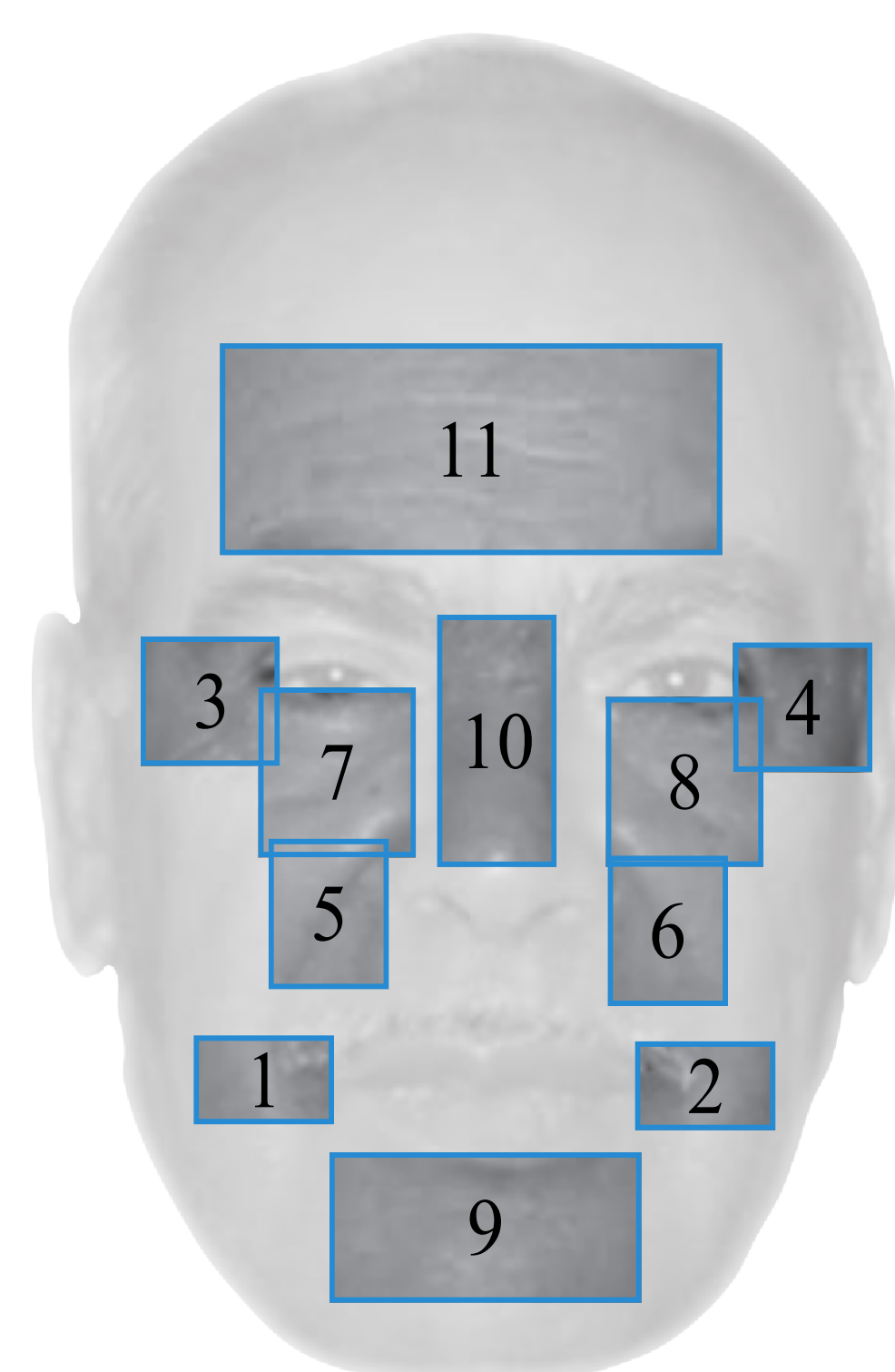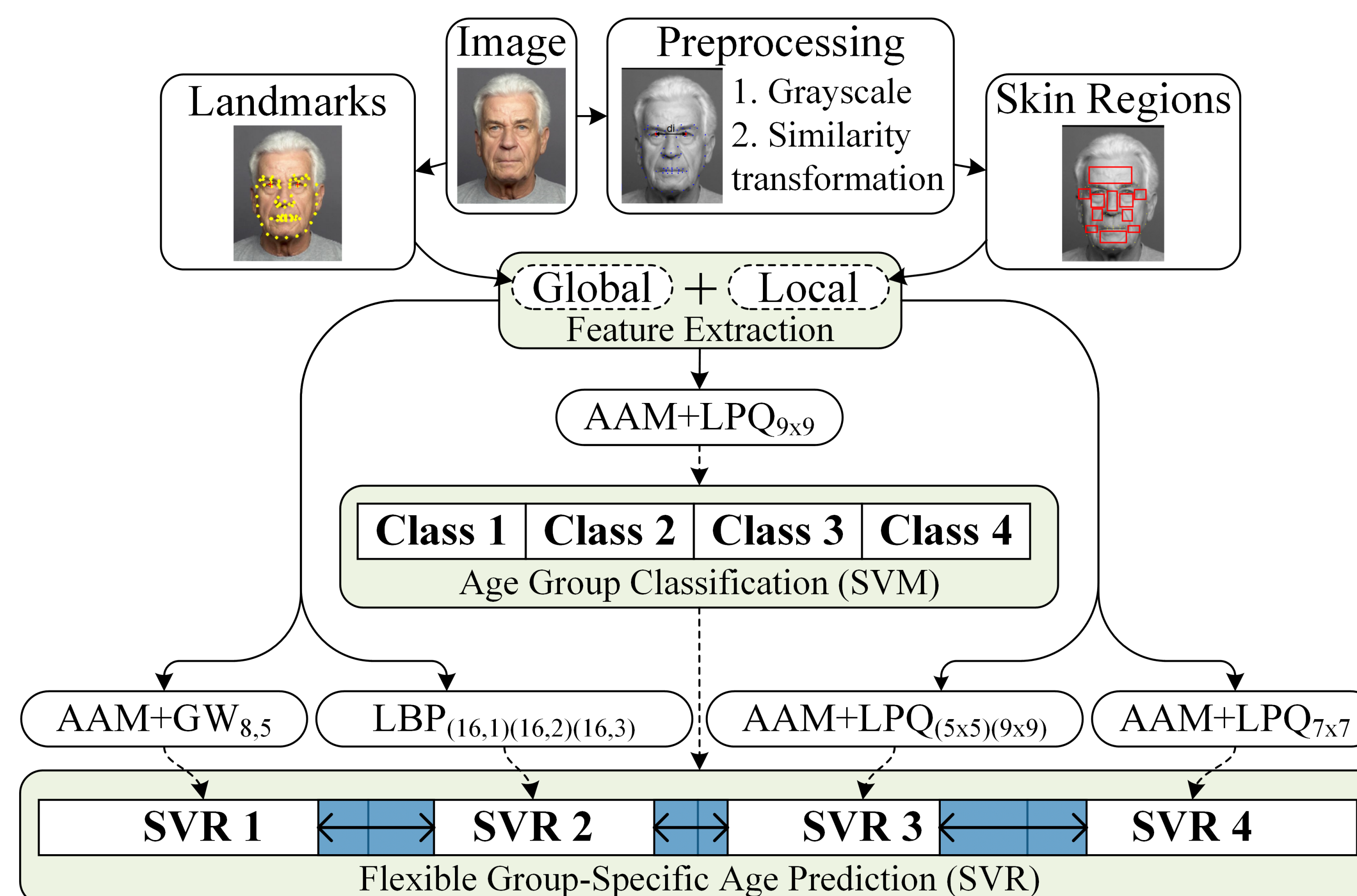
Why age prediction methods?
- Age-invariant person identification
- Age-based access control
- Age-adaptive targeted marketing
- Health indicator

Why is it challenging?
- Complex biological process
- Slow and irreversible
- Depends on gender, heredity, ethnicity, lifestyle
- Perturbations on images like expression, lighting, occlusion, pose, blur, etc
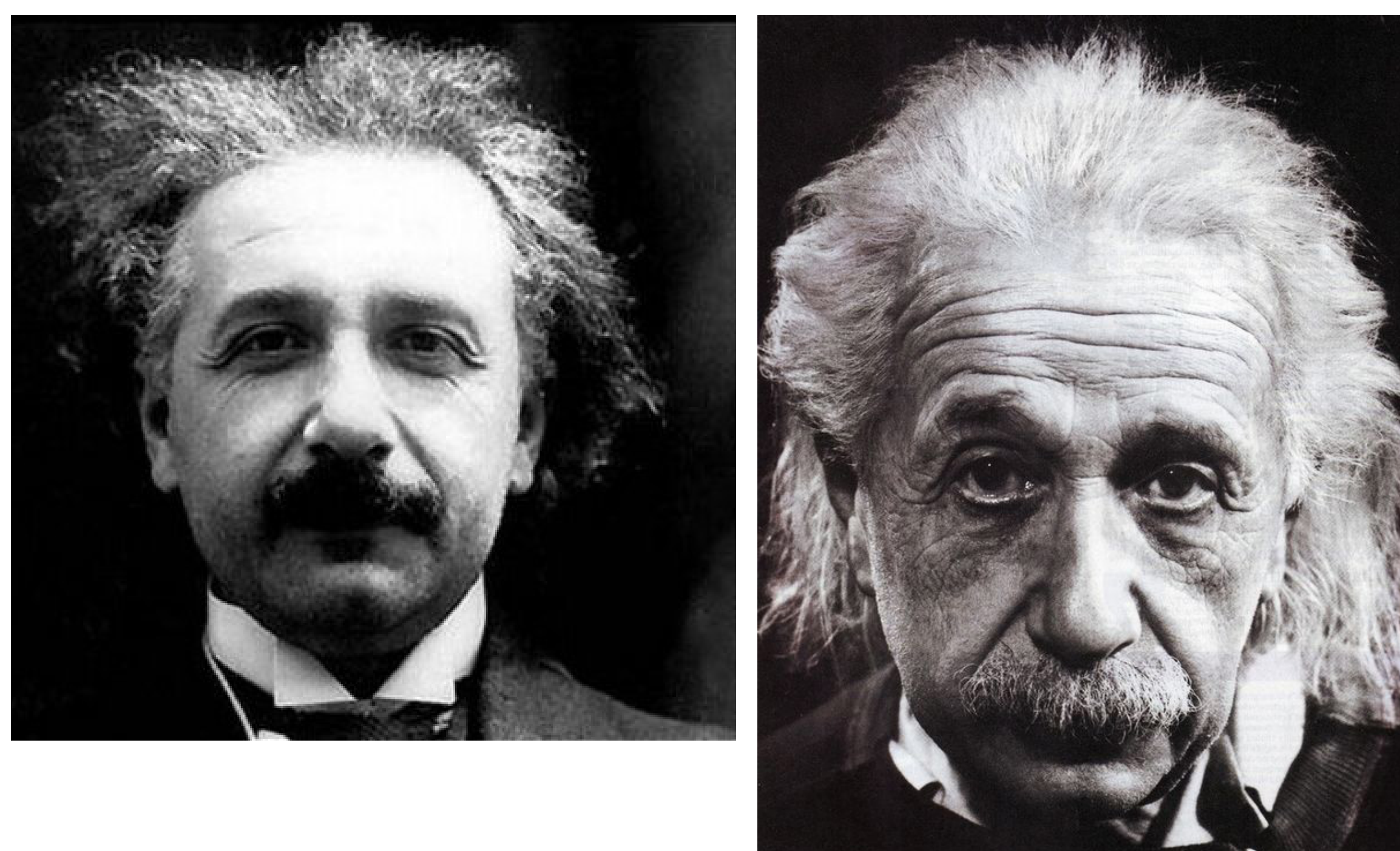

Proposed Approach

1. Left corner of the mouth lines (36x21)
2. Right corner of the mouth lines (36x21)
3. Left periorbital lines (36x31)
4. Right periorbital lines (36x31)
5. Left nasolabial folds (31x36)
6. Right nasolabial folds (31x36)
7. Left cheek lines (41x41)
8. Right cheek lines (41x41)
9. Chin crease (81x36)
10. Top nose (31x61)
11. Horizontal forehead lines (131x51)
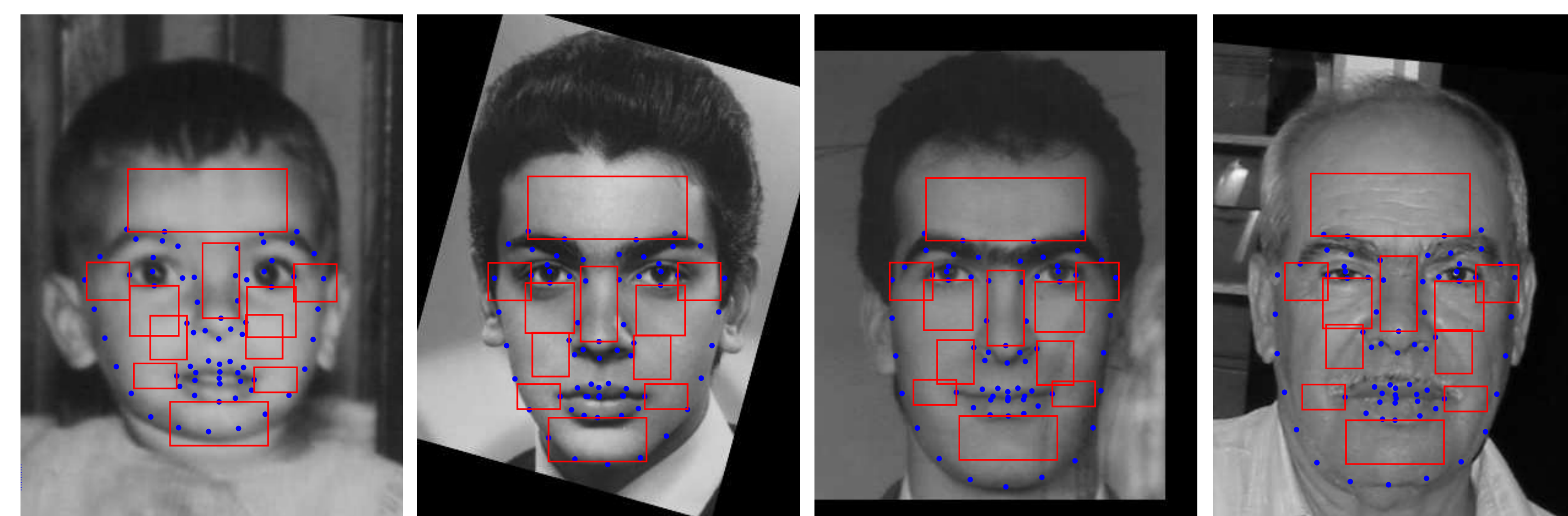
Experimental Results

Evaluated on the FG-NET dataset
- 1,002 facial images of 82 subjects from 0 to 69 yrs old
- 75% training / 25% test
- Leave-one-person-out (LOPO)
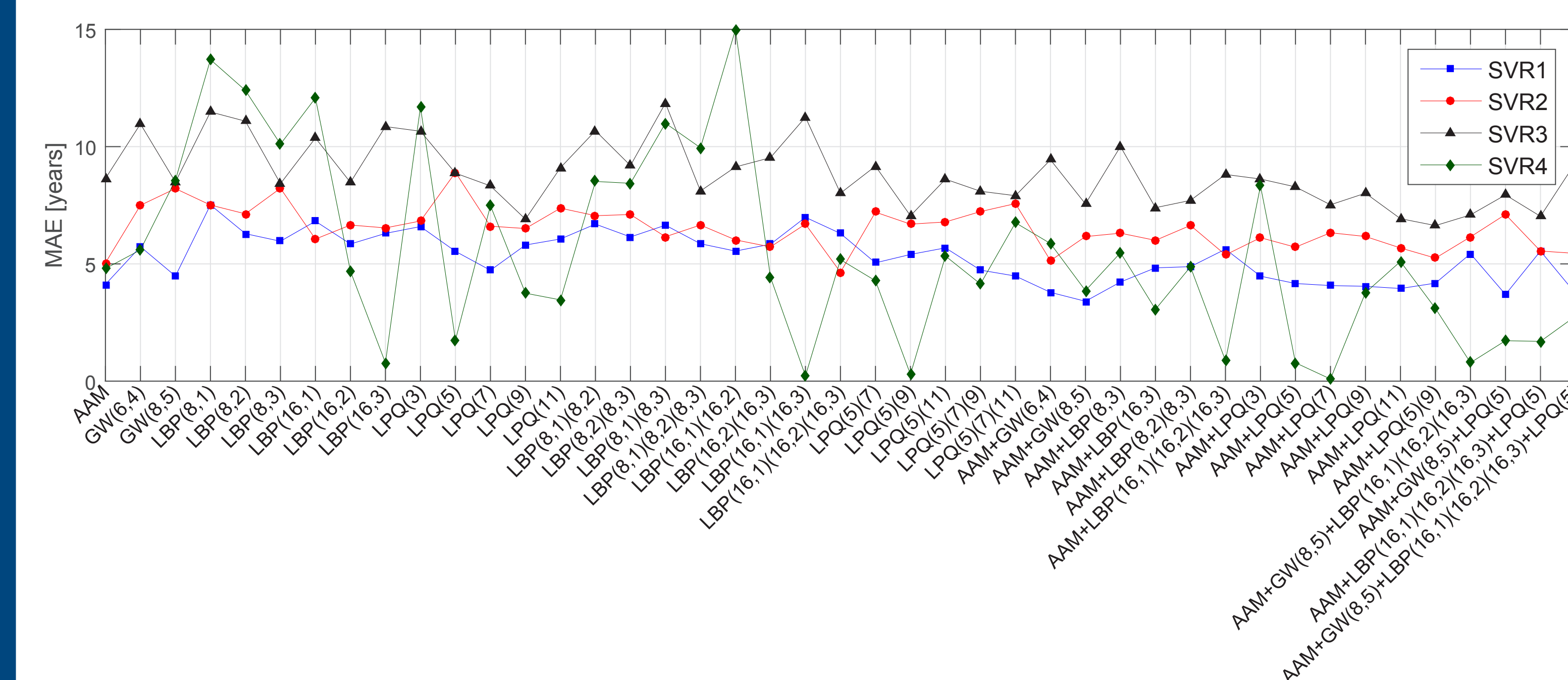
Method	MAE	Method	MAE
WAS [3]	8.06	Choi *et al.* [6]	4.65
AGES [4]	6.77	PLO [22]	4.82
RUN [23]	5.78	CA-SVR [24]	4.67
Ranking [23]	5.33	Han *et al.* [25]	5.10
LARR [26]	5.07	HC-SVR [7]	5.28
SVR [26]	5.66	Wang *et al.* (CNN) [8]	4.26
MTWGP [27]	4.83	ST+CSOHR (CNN) [9]	4.70
OHRank [28]	4.85	Pontes *et al.* [11]	4.50
Duong *et al.* [5]	4.74	**Group-specific features**	**3.98**