

Timeline of Developments in ASMs and AAMs

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This document lists some of the key papers in the developments of Active Shape Models and Active Appearance Models.

This is a first draft, so may miss out some relevant work - if you think something significant is missing, please contact the author.

Year	Shape Modelling	Appearance Modelling
1991	First parametric statistical shape model, using PCA on inter-point distances Cootes <i>et. al.</i> [2, 3]	Craw and Cameron warp faces to a reference shape before doing PCA [20]
1992	Point Distribution Model [7] Active Shape Model, search using edge detectors [6]	
1993	Statistical profile models for ASM [8, 17] ASM with varying weights at each point [8, 17] 3D ASM [26]	
1994	Combining statistical and elastic shape deformation [9, 11] Multi-resolution ASMs [16] Non-linear ASM using Polynomial Regression [32] B-spline based ASMs [1]	Statistical models of shape and texture [10] Statistical Appearance Models [27]
	Shape model with statistical model of concatenated profiles [24]	
1995	Optimal estimation of shape and pose fit to points [25]	
1996		Statistical models of (x,y,I) surface [29]
1997	Mixture models of shape distributions in ASM [12, 13]	
1998		Active Appearance Model introduced [21, 4] Shape-AAM (shape driven by residuals) [5]
1999	Non-linear ASMs using Kernel PCA [30] 2D+time ASMs [23, 22]	Wavelet compression of AAMs [34]
2000		View-based AAMs [18] Local refinement of AAM search [14] Coupled models of appearance [19]
2001		Constrained AAMs [15] Inverse Compositional updating scheme [31]
2002	Use of classifiers to detect features [33] Robust estimation of shape parameters [28]	

Need to add:

- Non-linear stuff (eg Romdhani)
- 3D / ND+t variations (Not sure I've included the earliest examples)
- Variations on the AAM

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