

Andrew Blake

Selected publications

2000–

- V. Kolmogorov, A. Criminisi, A. Blake, G. Cross and C. Rother (2006). Probabilistic fusion of stereo with colour and contrast for bi-layer segmentation. *IEEE Trans. Pattern Analysis and Machine Intelligence*, in press. [PDF](#)
- C. Rother, L. Bordeaux, Y. Hamadi and A. Blake (2006). AutoCollage. *ACM Trans. Graphics (SIGGRAPH)*, in press. [PDF](#)
- A. Criminisi, J. Shotton, A. Blake, C Rother and PHS Torr (2006). Efficient dense stereo with occlusions for new view-synthesis by four-state dynamic programming. *Int. J. Computer Vision*, in press. [PDF](#)
- A. Agarwal and A. Blake (2006). The Panum Proxy algorithm for dense stereo matching over a volume of interest. In *Proc. IEEE Conf. Computer Vision and Pattern Recognition*, in press. [PDF](#)
- A. Criminisi, G. Cross and A. Blake (2006). Bilayer Segmentation of Live Video. In *Proc. IEEE Conf. Computer Vision and Pattern Recognition*, in press. [PDF](#)
- O. Williams, A. Blake and R Cipolla (2006). Sparse and Semi-supervised Visual Mapping with S³GP. In *Proc. IEEE Conf. Computer Vision and Pattern Recognition*, in press. [PDF](#)
- C. Rother, V. Kolmogorov, T. Minka and A. Blake (2006). Cosegmentation of image pairs by histogram matching — incorporating a global constraint into MRFs. In *Proc. IEEE Conf. Computer Vision and Pattern Recognition*, in press. [PDF](#)
- O. Williams, A. Blake, and R. Cipolla (2005). Sparse Bayesian regression for efficient visual tracking. *IEEE Trans Pattern Analysis and Machine Intelligence*, 27, 8, 1292–1304. [PDF](#)
- A. Blake (2005). Visual tracking: a short research roadmap. In *Mathematical Models of Computer Vision: The Handbook*, eds. O. Faugeras, Y. Chen and N. Paragios, Springer, in press. [PDF](#)
- J. Shotton, A. Blake and R. Cipolla (2005). Contour-based learning for object recognition. In *Proc. Int Conf. Computer Vision*, 1, 503–510. [PDF](#)
- C. Rother, S. Kumar, V. Kolmogorov and A. Blake (2005). Digital Tapestry. In *Proc. IEEE Conf. Computer Vision and Pattern Recognition*, 2, 589–596. [PDF](#)
- V. Kolmogorov, A. Criminisi, A. Blake, G. Cross and C. Rother (2005). Bi-layer segmentation of binocular stereo. In *Proc. IEEE Conf. Computer Vision and Pattern Recognition*, 2, 407–414. [PDF](#)
- O. Williams, A. Blake, and R. Cipolla (2004). The Variational Ising Classifier (VIC) algorithm for coherently contaminated data. *Proc Neural Information Processing Systems*, 17. [PDF](#)
- J. Winn and A. Blake (2004). Generative affine localisation and tracking. *Proc Neural Information Processing Systems*, 17. [PDF](#)

- S. Romdhani, P. Torr, B. Schoelkopf and A. Blake (2004). Efficient face detection by a cascaded support-vector machine expansion. *Proc. Roy. Soc. A*, 460, 2501, 3283–3297. [PDF](#)
- C. Rother, V. Kolmogorov and A. Blake (2004). GrabCut — interactive foreground extraction using iterated graph cuts. *ACM Trans. Graphics (SIGGRAPH)*, 309–314. [PDF](#)
- A. Blake, C. Rother, M. Brown, P. Perez, and P. Torr (2004). Interactive image segmentation using an adaptive GMMRF model. *Proc. Eur. Conf. on Computer Vision (ECCV)*, Springer-Verlag, 428–441. [PDF](#)
- P. Perez, J. Vermaak and A. Blake (2004). Data fusion for visual tracking with particles. *Proc. IEEE*, 92, 3, 495–513. [PDF](#)
- P. Perez, M. Gangnet and A. Blake (2003). Poisson image editing. *ACM Trans. Graphics (SIGGRAPH)*, 2(3):313-318. [PDF](#)
- A. Criminisi, J. Shotton, A. Blake and P.H.S. Torr (2003). Gaze manipulation for one to one teleconferencing. *Proc. Int. Conf. on Computer Vision (ICCV)*, 191–198. [PDF](#)
- O. Williams, A. Blake and R. Cipolla (2003). A sparse probabilistic learning algorithm for real-time tracking. *Proc. Int. Conf. on Computer Vision (ICCV)*, 353–360. [PDF](#)
- K. Toyama and A. Blake (2002). Probabilistic tracking with exemplars in a metric space. *Int. J. Computer Vision*, 48, 9–19. [PDF](#)
- J. Rittscher, T. Watanabe, J. Kato, S. Joga and A. Blake (2002). An HMM-based segmentation method for traffic monitoring. *IEEE Trans. Pattern Analysis and Machine Intelligence*, 24, 9. [PDF](#)
- P. Pérez, A. Blake, and M. Gangnet (2001). JetStream: Probabilistic contour extraction with particles. *Proc. Int. Conf. on Computer Vision (ICCV)*, II:524-531. [PDF](#)
- J. Vermaak, A. Blake, M. Gangnet, and P. Pérez (2001). Sequential Monte Carlo fusion of sound and vision for speaker tracking. *Proc. Int. Conf. on Computer Vision (ICCV)*, I:741-746. [PDF](#)
- J. Sullivan, A. Blake, M. Isard and J. MacCormick (2001). Bayesian Object Localisation in Images. *Int. J. Computer Vision*, 44, 2, 111-136. [PDF](#)
- J. Deutscher, A. Blake and I. Reid (2000). Articulated Body Motion Capture by Annealed Particle Filtering *Proc. Conf. Computer Vision and Pattern Recognition*, 2, 126– 133. [abstract and .ps.gz](#) and [movies](#)
- B. North, A. Blake, M. Isard and J. Rittscher. (2000). Learning and Classification of Complex Dynamics. *IEEE Trans. Pattern Analysis and Machine Intelligence*, 22, 9, 1016–1034. [PDF](#)
- J. MacCormick and A. Blake (2000). Probabilistic exclusion and partitioned sampling for multiple object tracking. *Int. J. Computer Vision*, 39(1), 57-71, 2000. [PDF](#)

1996–99

- R. A. Eagle, M.A. Hogervorst and A. Blake. (1999). Does the visual system exploit projective geometry to help solve the motion correspondence problem? *Vision Research*, 39, 373–385.
- E. Rimon and A. Blake (1999). Caging planar bodies by 1-parameter, two-fingered gripping systems. *Int. J. Robotics Research*, 18, 3, 299–318.
- A. Blake and M. Isard (1998). **Active Contours**. Springer-Verlag.
- A. Blake, B. Bascle, M. Isard and J. McCormick (1998). Statistical models of visual shape and motion. *Phil. Trans. Roy. Soc. B*, 356, 1283–1302. [abstract](#) and [.ps.gz](#)
- M. Isard and A. Blake (1998). CONDENSATION — Conditional density propagation for visual tracking. *Int. J. Computer Vision*, 29, 1, 5–28. [abstract](#) and [.ps.gz](#)
- M. Isard and A. Blake (1998). A mixed-state Condensation tracker with automatic model switching. *Proc 6th Int. Conf. Computer Vision*, 107–112. [abstract](#) and [.ps.gz](#)
- B. Bascle and A. Blake (1998). Separability of pose and expression in facial tracking and animation. *Proc 6th Int. Conf. Computer Vision*, 323–328. [abstract](#) and [.ps.gz](#)
- J. MacCormick and A. Blake (1998). A probabilistic contour discriminant for object localisation. *Proc 6th Int. Conf. Computer Vision*, 390–395. [abstract](#) and [.ps.gz](#)
- R. Kaucic and A. Blake (1998). Accurate, Real-Time, Unadorned Lip Tracking. *Proc 6th Int. Conf. Computer Vision*, 370–375. [abstract](#) and [.ps.gz](#)
- C. Davidson and A. Blake (1998). Caging planar objects with a three-finger, one-parameter gripper *Proc IEEE Int. Conf. Robotics and Automation*, 2722–2727. [abstract](#) and [.ps.gz](#)
- M. Isard and A. Blake (1998). A smoothing filter for Condensation model switching. *Proc European Conf. Computer Vision*, 768–781. [abstract](#) and [.ps.gz](#)
- M. Isard and A. Blake (1998). ICondensation: Unifying low-level and high-level tracking in a stochastic framework *Proc European Conf. Computer Vision*, 893–908. [abstract](#) and [.ps.gz](#)
- R. Cipolla and A. Blake (1997). Image divergence and deformation from closed curves. *Int. J. Robotics Research*, 16, 1, 77–96. [abstract](#) and [.ps.gz](#)
- D. Buckley, J.P. Frisby and A. Blake (1996). Does the human visual system implement an ideal observer theory of slant from texture? *Vision Research*, 36, 8, 1163–1176.
- D. Sinclair and A. Blake. (1996) Quantitative planar region detection. *International Journal of Computer Vision*, 18, 1, 77–91.
- S. Rowe and A. Blake (1996). Statistical mosaics for tracking. *J. Image and Vision Computing*, 14, 8, 549–564. [abstract](#), [.ps.gz](#)
- M. Isard and A. Blake (1996). Contour tracking by stochastic propagation of conditional density. *Proc European Conf. Computer Vision, Cambridge, UK*, 343–356. [abstract](#) and [.ps.gz](#)

- B. Bascle, A. Blake and A. Zisserman (1996). Motion deblurring and super-resolution from an image sequence. *Proc European Conf. Computer Vision, Cambridge, UK*, 573–582. [abstract and .ps.gz](#)
- D. Reynard, A. Wildenberg, A. Blake and J. Marchant (1996). Learning Dynamics of Complex Motions from Image Sequences. *Proc European Conf. Computer Vision, Cambridge, UK*, 357–368. [abstract and .ps.gz](#)
- E. Rimon and A. Blake (1996). Caging 2D bodies by one-parameter, two-fingered gripping systems. *Proc Int. Conf. Robotics and Automation*, 1458–1464, IEEE Press. [PDF](#)

1990–95

- A. Blake (1995). A symmetry theory of planar grasp. *Int. J. Robotics Research*, 14, 5, 425–444. [abstract and .ps.gz](#)
- A. Blake, M. Isard and D. Reynard (1995). Learning to track the visual motion of contours. *Artificial Intelligence*, 78, 101–134. [abstract and .ps.gz](#)
- R. A. Eagle and A. Blake. (1995). Two-dimensional constraints on three-dimensional structure from motion tasks. *Vision Research*, 35, 20, 2927–2941. [PDF](#)
- A. Blake (1994). Uncertain views. *Nature*, 368, 498–499.
- D. Sinclair, A. Blake and D. Murray. (1994). Robust estimation of ego-motion from normal flow. *Int. J. Computer Vision*, 13, 1, 57–69.
- A. Blake and M. Isard (1994). 3D position, attitude and shape input using video tracking of hands and lips. *Proc. ACM SIGGRAPH Conference, Orlando, USA*, 185–192. [abstract and .ps.gz](#)
- R. Brockett and A. Blake (1994). Estimating the shape of a moving planar curve. *Proc. IEEE Int. Conf. Decision Theory and Control*, 3247–3252. [PDF](#)
- A. Blake, D. McCowen, H.R. Lo, P.J. Lindsey (1993). Trinocular active range sensing. *IEEE Trans. Pattern Analysis and Machine Intelligence*, 15, 5, 477–483. [PDF](#)
- A. Blake, H.H. Bülthoff and D. Sheinberg (1993). Shape from Texture: Ideal Observers and Human Psychophysics *Vision Research*, 33, 12, 1723–1737. [PDF](#)
- A. Blake, R. Curwen and A. Zisserman (1993). A framework for spatio-temporal control in the tracking of visual contours. *Int. J. Computer Vision*, 11, 2, 127–145. [abstract and .ps.gz](#)
- A. Blake, M. Taylor and A. Cox (1993). Grasping visual symmetry. *Proc 4th Int. Conf. Computer Vision, Berlin*, 724–733. [PDF](#)
- A. Blake (1992). Computational modelling of hand-eye coordination. *Phil. Trans. Roy. Soc. B*, 337, 351–360.
- R. Cipolla and A. Blake (1992). Surface shape from the deformation of apparent contours. *Int. J. Computer Vision*, 9, 2, 83–112. [PDF](#)

- R. Cipolla and A. Blake (1992). Surface orientation and time to contact from image divergence and deformation. *Proc. 2nd European Conf. Computer Vision*, Springer-Verlag, 465–474.
- A. Blake and A. Yuille, editors, (1992). *Active Vision*. MIT Press.
- A. Blake and H.H. Bülthoff (1991). Shape from specularities: computation and psychophysics. *Phil. Trans. Roy. Soc. B*, 331, 237–252. [PDF](#)
- L. Tarassenko and A. Blake (1991). Analogue computation of collision-free paths. *Proc. IEEE Int. Conf. Robotics and Automation*, 540–545. [PDF](#)
- A. Blake and C. Marinos (1990). Shape from texture: estimation, isotropy and moments. *J. Artificial Intelligence*, 45(3), 323–380. [PDF](#)
- A. Blake and H. Bülthoff (1990). Does the brain know the physics of specular reflection? *Nature*, 343(6254):165–168. [PDF](#)
- A. Blake and R. Cipolla (1990). Robust estimation of surface curvature from deformation of apparent contours. *Proc. 1st European Conf. on Computer Vision*, Springer-Verlag, 465–474.
- R. Cipolla and A. Blake. (1990). The Dynamic Analysis of Apparent Contours. *Proc. 3rd Int. Conf. Computer Vision*, Osaka, Japan, 616–625. [PDF](#)
- C. Marinos and A. Blake (1990). Shape from texture: the homogeneity hypothesis. *Proc. 3rd Int. Conf. Computer Vision*, Osaka, Japan, 350–334. [PDF](#)

1982–89

- A. Blake (1989). Comparison of the efficiency of deterministic and stochastic algorithms for visual reconstruction. *IEEE Trans. Pattern Analysis and Machine Intelligence*, 11, 1, 2–12. [PDF](#)
- A. Blake and A. Zisserman. (1987). *Visual Reconstruction*. MIT Press, Cambridge, USA. [PDF](#)
- A. Blake (1985). Boundary conditions for lightness computation in Mondrian World. *Computer Vision, Graphics and Image Processing*, 32, 314–327. [PDF](#)
- A. Blake (1985). Specular stereo. *Proc. Int. Joint Conf. on Artificial Intelligence* 973-976.
- A. Blake (1984). Reconstructing a visible surface. *Proc. Conf. American Association for Artificial Intelligence*, 23–26.
- A. Blake (1982). Fixed point solutions of recursive operations on boolean arrays. *Computer Journal*, 25, 2, 231–233.