Curriculum vitae

Personal details

Name	Keith A. May
Date of birth	26th October 1969
Postal address	Department of Computer Science, UCL, Gower Street, London, WC1E 6BT, UK
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Research interests

I use psychophysical and computational techniques to investigate the early stages of processing performed by the human visual system. My research falls mainly into four related areas:

- Detection and representation of edges and texture boundaries
- Integration of edges and texture boundaries across space (contour integration)
- Efficient coding in biological vision
- Visual attention

Education

A Levels	Physics (A), Maths (A), Further Maths (B), Chemistry (C)
BSc	BSc (first class) in Psychology, York University, UK, 1992
PhD	"Edge coding in human vision: A psychophysical and computational investigation", Aston University, UK, awarded on 3rd June 2004. Supervisor: Mark Georgeson

Academic positions

12/7/1992 – 30/10/1992	Research assistant at BT Labs, Martlesham Heath, UK
1/11/1992 – 31/10/1993	Research assistant at St. Andrews University, UK
1/12/2003 – 31/12/2004	Research fellow at University College London, UK
16/5/2005 – 31/5/2006	Research fellow at McGill University, Montreal, Canada
1/8/2006 – 31/7/2008	Research assistant at Bradford University, UK
1/11/2008 – present	Research associate at University College London, UK

Professional membership

- Vision Sciences Society
- Applied Vision Association

Technical skills

Experimental techniques	Psychophysics, computational modelling
Programming languages	MATLAB, C++ (including MATLAB mex files and Microsoft Foundation Classes), Pascal, Ada, BBC BASIC, 6502 assembly language
Markup languages	HTML, LaTeX
Graphics hardware	VSG, ViSaGe, Bits++, FE-1 stereo goggles
Graphics software	psychtoolbox, SDL (Simple DirectMedia Layer)

Teaching

- SPSS practical classes (Bradford University Psychology BSc course)
- Optometric Maths practical classes (Bradford University Optometry BSc course)
- Physiology of Vision and Perception practical classes (Bradford University Optometry BSc course)
- Supervision of undergraduate projects at Bradford, McGill and St. Andrews Universities

Reviewing

- One project grant application for the Wellcome Trust
- Abstracts for the following Applied Vision Association conferences: AGM 2007, 2010; Christmas meeting 2009
- Papers for the following journals (numbers of papers given in brackets): *Journal of Vision* (7), *PLoS Computational Biology* (1), *Vision Research* (1)

Conference sessions chaired

- European Conference on Visual Perception, Paris, 2003: "Low-level Processes" session
- Applied Vision Association Christmas Meeting, Aston University, 2003

Invited lectures

- BMVA/EPSRC Summer School on Computer Vision 2009, 2010: "Biological Vision"
- Psychology of Visual Art Summer School, Kingston University, 2010: "Motion, Blur, and Motion Blur"

Published papers

May, K.A. & Zhaoping, L. (2009). Effects of surrounding frame on visual search for vertical or tilted bars. *Journal of Vision*, **9**(13):20, 1–19.

May, K.A. & Hess, R.F. (2008). Effects of element separation and carrier wavelength on detection of snakes and ladders: Implications for models of contour integration. *Journal of Vision*, **8**(13):4, 1–23.

Hess, R.F., Baker, D.H., May, K.A. & Wang, J. (2008). On the decline of 1st and 2nd order sensitivity with eccentricity. *Journal of Vision*, **8**(1):19, 1–12.

May, K.A. & Hess, R.F. (2007). Ladder contours are undetectable in the periphery: A crowding effect? *Journal of Vision*, **7**(13):9, 1–15.

May, K.A. & Hess, R.F. (2007). Dynamics of snakes and ladders. *Journal of Vision*, **7**(12):13, 1–9.

Georgeson, M.A., May, K.A., Freeman, T.C.A. & Hesse, G.S. (2007). From filters to features: Scale–space analysis of edge and blur coding in human vision. *Journal of Vision*, **7**(13):7, 1–21.

May, K.A. & Georgeson, M.A. (2007). Added luminance ramp alters perceived edge blur and contrast: A critical test for derivative-based models of edge coding. *Vision Research*, **47**(13), 1721–1731.

May, K.A. & Georgeson, M.A. (2007). Blurred edges look faint, and faint edges look sharp: The effect of a gradient threshold in a multi-scale edge coding model. *Vision Research*, **47**(13), 1705–1720.

Zhaoping, L. & May, K.A. (2007). Psychophysical tests of the hypothesis of a bottom-up saliency map in primary visual cortex. *PLoS Computational Biology*, **3**(4), e62.

Perrett, D.I., May, K.A. & Yoshikawa, S. (1994). Facial shape and judgements of female attractiveness. *Nature*, **368**, 239–242.

Thompson, P., May, K. & Stone, R. (1993). Chromostereopsis: A multicomponent depth effect? *Displays*, **14**(4), 227–234.

Published conference abstracts

May, K.A., Zhaoping, L. & Hibbard, P.B. (2010). Binocular integration in human vision adapts to maximize information coding efficiency. *Perception*, **39**, ECVP Abstract Supplement, 77. (Poster presented at ECVP 2010)

May, K.A., Zhaoping, L. & Hibbard, P.B. (2010). Binocular integration in human vision adapts quickly to maximize coding efficiency. *Perception*, **39**, 1149. (Talk presented at the AVA AGM 2010)

Zhaoping, L. & May, K.A. (2010). Human monochromatic light discrimination explained by optimal signal decoding. *Perception*, **39**, 1148–1149. (Talk presented at the AVA AGM 2010)

May, K.A., Zhaoping, L. & Hibbard, P.B. (2010). Effects of image statistics on stereo coding in human vision. *Journal of Vision*, 10(7):359. (Poster presented at VSS 2010)

May, K.A. & Hess, R.F. (2010). Implementing curve detectors for contour integration. *Perception*, **39**(2), 270. (Poster presented at AVA Christmas Meeting 2009)

May, K.A. & Hess, R.F. (2009). Implementing curve detectors for contour integration. *Journal of Vision*, **9**(8):906, 906a. (Poster presented at VSS 2009)

May, K.A. & McIlhagga, W.H. (2009). Probing edge blur perception with reverse correlation. *Perception.*, **38**(4), 621. (Talk presented at AVA AGM 2009)

May, K.A. & Hess, R.F. (2008). Testing filter-overlap models of contour integration. *Journal of Vision*, **8**(6):72, 72a. (Talk presented at VSS 2008)

May, K.A. & Hess, R.F. (2007). Contour integration and crowding: A similar type of mechanism? *Perception*, **36**(9), 1399. (Talk presented at the AVA AGM 2007)

May, K.A. & Hess, R.F. (2007). Ladder contours are undetectable in the periphery *Journal of Vision*, **7**(9):113, 113a. (Talk presented at VSS 2007)

May, K.A. & Hess, R.F. (2006). Snakes are as fast as ladders: Evidence against the hypothesis that contrast facilitation mediates contour detection. *Journal of Vision*, **6**(6), 337a. (Poster presented at VSS 2006)

May, K.A. & Zhaoping, L. (2005). Both cognitive factors and local inhibition mediate the effect of a surrounding frame in visual search for oriented bars. *Journal of Vision*, **5**(8), 959a. (Poster presented at VSS 2005)

Guyader, N., May, K.A. & Zhaoping, L. (2005). Top-down interference in visual search. Journal of Vision, **5**(8), 951a. (Poster presented at VSS 2005)

Zhaoping, L. & May, K. (2004). Irrelevance of feature maps for bottom up visual saliency in segmentation and search tasks. Program No. 20.1. *2004 Abstract Viewer/Itinerary Planner.* Washington, DC: Society for Neuroscience, 2004. Online.

May, K.A. & Zhaoping, L. (2004). Investigating salience mechanisms by using the effects of surrounding frame on the tilted-vertical asymmetry in visual search. *Perception*, **33**, Supplement, 12. (Talk presented at ECVP 2004)

May, K.A. & Georgeson, M.A. (2004). Perceiving edge contrast. *Perception*, **33**, 757. (Talk presented at AVA Christmas Meeting 2003)

May, K.A. & Georgeson, M.A. (2003). Perceiving edge blur: Gaussian-derivative filtering and a rectifying nonlinearity. *Perception*, **32**, Supplement, 46. (Talk presented at ECVP 2003)

May, K.A. & Georgeson, M.A. (2003). Perceiving edge blur: Linear filtering and a rectifying nonlinearity. *Perception*, **32**, 388. (Talk presented at AVA Christmas Meeting 2002)

Georgeson, M.A., May, K.A. & Barbieri-Hesse, G.S. (2003). Perceiving edge blur: The Gaussian-derivative template model. *Journal of Vision*, **3**(9), 360a.

Published book chapters

Zhaoping, L., May, K.A. & Koene, A. (2009). Some fingerprints of V1 mechanisms in the bottom up saliency for visual selection. In Heinke, D. & Mavritsaki, E. (Eds.), *Computational Modelling in Behavioural Neuroscience: Closing the gap between neurophysiology and behaviour* (pp. 137–164). London: Psychology Press. ISBN 978-1-84169-738-3.

Zhaoping, L. & May, K.A. (2008). Testing the hypothesis that V1 creates a bottom-up saliency map. In Bharath, A. & Petrou, M. (Eds.), *Next Generation Artificial Vision Systems: Reverse Engineering the Human Visual System.* London: Artech House. ISBN 978-1-59693-224-1.