Professor Alan Ball BSc, PhD, MIMfgE, CEng

Professor of Engineering Design

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About

Alan Ball is Professor of Engineering Design in the School of Engineering. Prior to his current appointment, he worked for 7 years as an Engineer with British Aerospace and for 12 years as a Lecturer at Loughborough University of Technology.

Throughout his career, he has been involved in surface modelling and its application in CADCAM. His current research priority is to establish a purely geometric characterisation of shape for free-form curves and surfaces compatible with the needs of CADCAM.

Qualifications

BSc Lond, PhD EAnglia, MIMfgE, CEng

Postgraduate supervision

Examples of PhD theses supervised by Professor A A Ball

- Czerkawski A M, Fitting procedures for curves and surfaces, 1996. University of Birmingham
- Liu C, Geometric control of rational cubic B-splines, 1998. University of Birmingham.
- Zheng J, Construction of n-sided surfaces, 1998. University of Birmingham.
- Fisher M, Point-based mathematics for computer-aided manufacture, 2001. University of Birmingham.

Research

Research interests

- Geometric modelling
- Free-form surface modelling
- CADCAM for complex shaped components
- 5-axis machining.
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Publications

- Ball A A, Reparametrization and its application in computer-aided geometric design. International Journal for Numerical Methods in Engineering, 1984. 20: p. 197 - 216.
- Ball A A and Storry D J T, An investigation of curvature variations over recursively generated B-spline surfaces. ACM Transactions on Graphics, 1990. 9(4): p. 424 - 437.
- Ball A A, CONSURF. Part one: introduction of the conic lofting tile. Computer-Aided Design, 1993. 6(4): p. 243 - 249.
- Ball A A, Geometry based surface modelling. 11th International Conference on Computer Aided Production Engineering, IMechE, London, 1995: p. 49 - 54.
- Ball A A, Simple CADCAM procedures for complex shaped components. International Journal of Production Research, 1996. 34(9): p. 2461 - 2469.
- Tookey R and Ball A, Approximate G1 continuous interpolation of a rectangular network of rational cubic curves. Computer-Aided Design, 1996. 28(12): p. 1007 - 1016.
- Zheng J J and Ball A A, Control point surfaces over non-four-sided areas. Computer Aided Geometric Design, 1997. 14: p. 807 - 821.
- Ali J M, Tookey R M, Ball J V and Ball A A, The generalised Cornu spiral and its application to span generation. Journal of Computational and Applied Mathematics, 1999. 102: p. 37 - 47.
- Ball A A and Zheng J J, Degree elevation for n-sided surfaces. Computer Aided Geometric Design, 2001. 18: p. 135 - 147.

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