

Curriculum Vitae

Mihailo Ristic, PhD, MSc, DIC, CEng, FIMechE

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Full Name: Mihailo Ristic
Date of Birth: 18 October 1959
Current Appointment: Senior Lecturer
Imperial College London
Mechanical Engineering Department
Exhibition Road, London SW7 2AZ
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Home Address: 13 Park Drive
London NW11 7SN

Higher Education:

1978 - 81: University College, London: Department of Mechanical Engineering
B.Sc.(Eng.) degree in Mechanical Engineering, First Class Honours.
1981 - 82: Imperial College, London: Department of Electrical Engineering
M.Sc., DIC degree in Control Systems
Sponsorship SERC
1983 - 86: Imperial College, London: Department of Mechanical Engineering
Ph.D., Thesis title: Robot Dynamics and Control
Sponsorship RD Projects Ltd.

Membership of Professional Bodies, Learned Societies:

- Fellow of the Institution of Mechanical Engineers
- Member of the Institution of Electrical and Electronic Engineers since September 1995

Directorships and consultancies

- Director of The Turbo Genset Company Limited 1993 – 2002
- Consultant to The Turbo Genset Company Limited 2002 – present
- Consultant to RDP Ltd. from 1987 to 1989
- Director of RDP Ltd from 1989 to 1991
- Consultant on specific projects to The Commonwealth Secretariat, Lotus Engineering Ltd., Astrium/EADS and other organisations

Appointments:

1/10/02 – present Senior Lecturer, Mechanical Engineering Department, Imperial College London.
1/3/86 – 1/10/02 Lecturer, Mechanical Engineering Department, Imperial College London.
1/1/94 – 1/10/02 Director of The Turbo Genset Company Limited.
1/1/86 - 1/3/86 Research Assistant, Mechanical Engineering Department, Imperial College London.

Responsible for teaching NC Engineering and research in robotics and industrial automation

Industrial Experience

In my roles as a company director and consultant I have gained extensive experience in a variety of areas including:

- Technical project planning and project management
- Financial planning
- Business strategy planning and execution
- Investor relations
- Dealing with the venture capital community and investment community in general

Research Interests

With the specialist background in Control Systems, my early interests in robotics and CNC control have evolved into research in Computer Integrated Manufacturing in the wider context, including CAD/CAM integration and Manufacturing Planning and Control. One of my special interests has been in the use of geometric modelling methods for representation of complex 3D shapes as the means of integrating processes such as design, engineering analysis, manufacturing process planning and dimensional inspection. The work in this context has been conducted in close collaboration with companies such as Rolls-Royce and Renishaw and its highlights may be summarised as follows:

- Geometric modelling using NURBS
- CAD based dimensional measurement of free-form geometry
- Registration as means of providing soft fixturing
- CAD model updating using point data
- Shape analysis including local properties (displacement, normals, curvature) and global properties (thickness, medial axis transform)
- Feature based modelling, CAE integration and design optimisation

The research in manufacturing planning and control has been conducted through a series of UK and EU unded programmes involving partners that include Siemens, Alcatel and the main topics may be summarised as follows:

- Manufacturing planning and control in the virtual enterprise
- Information flow and collaboration across the supply chain
- Collaborative design and manufacture between OEM and suppliers
- Operation and management of flexible manufacturing cells

In addition, I continue to maintain a strong interest in small scale power generation, including electrical transmission for hybrid electric vehicles and on-site power generation using micro turbines. Much of this work has been patented and commercialised through the Turbo Genset Company of which I am one of the founders, while through Imp[erial College I continue to be involved in further research in this field. The main research topics are:

- High speed generators
- Hybrid electric vehicles
- Distributed power generation including cogeneration
- Management and control of highly distributed power systems

Teaching Related Activities

Taught Courses

- Course leader in Advanced Control for MSc and final year MEng students
- Teaching in second year Design, Electronics Instrumentation and Control, Mathematics
- Departmental careers advisor
- Organiser of the MSc Course “Industrial Robotics and Manufacturing Automation” (1991-1994)

Postgraduate Supervision

- Supervised 18 successful PhD students

- Regular supervision of several MSc student project each year

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Major Research Grants and Contracts

Funding	Title of Project	Dates	Total Value
EPSRC and industry	Integrated Measurement and Modelling of Complex Parts	Jan 1996 – Jan 1999	£ 339,960
European Commission ESPRIT 3	X-CITTIC: Planning and Control of Semiconductor Virtual Enterprises	Jan 1996 – Jan 1999	£ 497,604
European Commission BRITE 3	TETLEI: Turbo Electric Taxi with Low Environmental Impact	Jun 1994 – Jan 1998	£ 541,723
Turbo Genset Company	Development of High Speed Generators	Nov 1993 – Jan 1997	£325,566
European Commission BRITE 2	Integration of Non-Contact Inspection and Modelling of Complex Engineering Components	Jan 1990 – Feb 1993	£ 194,446
AO / ASIF Foundation, Switzerland	Computer Assisted Surgery	Dec 1990 – Jan 1993	£ 235,000
European Commission ESPRIT 2	ESPRIT 2:Distributed Manufacturing Planning and Control	Jan 1989 - Jun 1992	£ 220,000
EPSRC / DTI and industry	Design of a Flexible Robot Cell for PCB Manufacture	Mar 1989 – Oct 1992	£ 300,000
EPSRC and industry	Operation and management of flexible human centred turning cells (EPSRC)	Sep 1987 – Mar 1991	£ 300,000
European Commission FP5	Project ULEV-TAP: Ultra low emission vehicle for rail transport	Sep 1999 – Sep 2002	£ 530,000
GEC-Marconi	Direct Drive Robot System for Assembly applications (industry)	Jan 1987 – Feb 1989	£ 230,000
EPSRC and industry	Precision reconstruction of Free-Form Geometry for Engineering Production	Oct 1999 – Oct 2002	£ 242,000
European Commission FP5	Co-operation in Dynamic Networked Organisations	Jan 2000 - Jun 2002	£ 310,000
EPSRC and industry	Evolution of Spacecraft Manufacture by Vertically Integrated Systems for Bill of Materials Interpretation	Oct 2000 – Mar 2003	£ 155,470
European Commission FP6	VIVACE – Value Improvement through a Virtual Aeronautical Collaborative Enterprise	Jan 2004 – Jan 2008	£ 80,0000
EPSRC and industry	Supergen 3 – Highly Distributed Power Systems	Jun 2005 – Jun 2009	£250, 000
DTI and Industry	Compact MRI for Accident and Emergency	Sep 2007 – Aug 2010	£565,000

Publication List

Refereed Journals and Books Edited by Others

1. N.Kumar, C.B.Besant and M.Ristic, "Process Variables Determining the Dimensional and Metallurgical Properties of Directionally Solidified, Cored, Turbine Blades Produced by Investment Casting of Super-Alloys", The International Journal of Advanced Manufacturing Technology, Special issue, May 1988.
2. N.Tsavourakis, M.Ristic and C.B.Besant, "Development of a Profile Gauging Sensor", The International Journal of Advanced Manufacturing Technology, Special issue, May 1988.
3. M.Cardew-Hall, J. Cosmas and M. Ristic, "Automated Proof Inspection of Turbine Blades", The International Journal of Advanced Manufacturing Technology, Special issue, May 1988.
4. I.Olama, C.B.Besant and M.Ristic, "A CAD/CAM System Die Design and Manufacture", The International Journal of Advanced Manufacturing Technology, Special issue, May 1988.
5. M.Cardew-Hall, J. Cosmas and M. Ristic, "Automated Proof Inspection of Turbine Blades", The International Journal of Advanced Manufacturing Technology, Special issue, May 1988.
6. Besant C.B., K.J. Gililand, M. Ristic, and L.P. Williams, "A Versatile Six Degree of Freedom Robot", The International Journal of Advanced Manufacturing Technology, May 1986.
7. Besant C.B., Ristic M., Champ P., Jansen E-P., Hancke T.A., and Hatzikonstantis L. "Manufacturing Systems". J of Integrated Manufacturing Systems, Vol. 1, Issue 4, Dec 1990. ISSN: 0957-6061
8. Makatsoris C, Leach NP, Richards HD, Besant, C.B. and Ristic, M., Addressing planning and control gaps in semiconductor virtual enterprises, Advances in Design and Manufacturing, 1996, Vol: 7, Pages: 117 - 129, ISSN: 0926-9622
9. Ristic M. and Brujic D., Efficient Registration of NURBS Geometry, International Journal of Image and Vision Computing, Vol. 15, 1997, pp925-935.
10. Brujic D. and Ristic M., Monte Carlo Simulation and Analysis of Free Form Surface Registration, Proc. IMechE, Part B Journal of Engineering Manufacture, Vol. 211, 1997, pp 605-617.
11. Ristic M. and Brujic D., A Framework for Non-Contact Measurement and Analysis of NURBS Surfaces, International Journal of Advanced Manufacturing Technology, Vol. 14, 1997, pp 210-219.
12. Ainsworth I., Ristic M. and Brujic D., CAD-Based Measurement Path Planning for Free-Form Shapes Using Contact Probes, International Journal of Advanced Manufacturing Technology, Vol. 16, 2000, pp 23-31
13. Besant C.B., Ristic M., Tarazi K and Olama, I., AO COMPASS: Computer-Assisted Surgery System, in *Computer Assisted Orthopedic Surgery*, ed. LP Nolte and R Ganz, Hogrefe & Hubert, 1999, ISBN 0-88937-168-7, pp104-113.
14. Ristic M., Brujic D., and Handayani S., Triangulation of Unordered Data Using Trimmed NURBS Models, Journal of Materials processing Technology, 107 (1-3): 60-70 Nov 22 2000 .
15. Rupp T. M. and Ristic M., Fine Planning for Supply Chains in Semiconductor Manufacture, Journal of Materials processing Technology, 107, 2000, pp 390-397.
16. Ristic M., Brujic D., Handayani S., CAD-Based Triangulation of Unordered Data Using Trimmed NURBS Models, Proc. I. Mech.E. Part B Journal of Engineering Manufacture, Vol 214 Part B, pp509-514, 2000.
17. Ristic M., Brujic D. and Handayani S., Efficient CAD-Based Triangulation of Unordered 3D Data, Machine Vision and Applications, Vol. 12, No.2, pp 98-106, 2000.
18. Zhou Q, Ristic M. and Besant C.B., Design of Information Management system for Semiconductor virtual Enterprises, International Journal of Advanced Manufacturing Technology, Vol. 16, 2000, pp 909-916.
19. Löh H., Rupp T.M. and Ristic M., System Architectures for Coordination in Complex Supply Networks, Advances in Networked Enterprises, Virtual Organisations, Balanced Automation, and Systems Integration, ed. Luis M. Camarinha-Matos, Hamideh Afsarmanesh, Heinz-H. Erbe, September 2000, ISBN 0-7923-7958-6,

20. Ristic M., Ainsworth I. and Brujic D., CAD Based CMM probe Radius Compensation for Free-Form Surfaces, Proc. I. Mech. Eng. Part B, Journal of Engineering Manufacture, Vol 215 Part B, pp 819-834, 2001.
21. Brujic D, Ristic M. and Ainsworth I., Measurement-Based Modification of NURBS Surfaces, *Computer Aided Design .Volume 34, Issue 3, Pages 173-266 ,March 2002.*
22. Brujic D., Ristic M., and Ainsworth I., Efficient Shape Description using NURBS, Lecture Notes in Computer Science LNCS 2059, The Proceedings volume, "Visual Form 2001" is edited by C.Arcelli, L.P.Cordella and G.Sanniti di Baja, Springer-Verlag , 2001, ISBN: 3-540-42120-3 pp643-653
23. Xu, H., Ristic, M. and Besant, C.B., A system for enhancing supply chain agility through exception handling, International Journal of Production Research, Vol. 41, No. 6, pp 1099-1114, 2003.
24. Ristic M., Brujic D., and Ainsworth I., Measurement-based updating of turbine blade CAD models: a case study, International Journal of Computer Integrated Manufacturing, Vol. 17, No. 4, pp 352-363, June 2004.
25. Rupp T.M. and Ristic M., Determination and exchange of supply information for co-operation in complex production networks, Robotics and Autonomous Systems Vol.49, pp181–191, 2004.
26. Xu H. Q., Ristic M, Pradoux C., A Web-based system for manufacturing co-ordination in complex supply networks International Journal of Computer Integrated Manufacturing, pp Vol. 43 No. 10, pp 2049-2070, 2005
27. Ristic, M.; Brujic, D., and Thoma, K., Economic dispatch of distributed CHP systems participating in electricity spot markets, Proceeding IMechE, Part A Journal of Power and Energy, accepted for publication 2007.

Refereed Conferences

17. Ristic M., Warwick, K. and Westcott, J.H., "Variable Forgetting Factor in the Control of a Chemical Plant", MELECON Conference, Athens, May 1983.
18. M. Sahirad, M. Ristic and C.B. Besant, "Implementation of Adaptive Positional Control and Active Compliance for Robots", I.Mech.E Seminar on Advanced Robotics, December 1986
19. M. Ristic, D. Jovancevic, G. Toroman, "Functional Requirements for CNC Controllers in Metal Cutting FMS", Conference on Robotics and FMS, Belgrade, Yugoslavia, February 1988.
20. Hatzikonstantis, L., Sahirad, M., Ristic, M. and Besant, C.B., "Interactive scheduling for a human-Operated Flexible Machining Cell", IFAC Conference, Madrid, 26-29 September 1989.
21. Besant, C.B., Ristic, M., R.R. Slatter, R.R., Sahirad, M., Olama, I., and Hatzikonstantis, L., "Operation and Management of Flexible Human Centred Turning Cells", ISATA Conference, Monte Carlo, 24-26 October 1988.
22. Ristic, M. and Marin, S., "Functionality of Robot Programming Languages for use in Off-Line Programming", 21st International Symposium on Automotive Technology & Automation, Wiesbaden, West Germany, 6-10 November 1989.
23. Hancke, T., Besant, C.B., Ristic, M. and Husband, T., "Human-Centred Technology", IFAC Symposium on Skilled Automated Production, Vienna, 14-17 November, 1989.
24. Chuang, H.T. and Ristic, M., "Heuristic Collision and Proximity Detection, 22nd International Symposium on Automotive Technology & Automation", Vienna, Austria, 6-10 November 1990.
25. Marin, S., Ristic, M. and Sojat, Z. "An Implementation of a Novel Method for Concurrent Process Control in Robot Programming", ISRAM '90, 3rd International Symposium on Robotics and Manufacturing, Burnaby, Canada, July 18-20 1990.
26. Besant, C.B., Ristic, M., Champ, P., Hancke, T. and Hatzikonstantis, L., "Distributed Planning and Control for Flexible Manufacture", YUGRAPH 90, International Conference on Computer Graphics, Dubrovnik, 20-22 June 1990.
27. Besant C.B., Ristic M., Champ P., Olama I.M., Hancke T and Hatzikonstantis L. "Distributed Planning and Control of Flexible Manufacture". EUROTECH 91 Intl. Conf. on Computers in Engineering Industry, 2-4 July 1991 Birmingham.

28. Sen A., Wang C.S., Ristic M and Besant C.B. "The Imperial College Free Ranging Automated Guided Vehicle System". 7th Intl. Conf. on Computer Aided Production Engineering (ICAPE) 12-15 August 1991 Tennessee U.S.A.
29. Sen A., Wang C.S., Ristic M. and Besant C.B. "The Supervisory System of the Imperial College Free Ranging Automated Guided Vehicle Project" 0-7803-0233-8/91 IEEE Conf.Proc. Intl Conf.on Systems,Man and Cybernetics, October 13-16, 1991.
30. Fenocchi A., Etemad M.R., Besant C.B., Ristic M. and Baines N. "Turbo-Electric Transmission: A New Concept for Vehicles", 24th ISATA Intl Symposium on Automotive Technology and Automation., Florence, Italy 20-24 May 1991
31. Etemad M.R.S., Fenocchi A., Baines N.C., Besant C.B. and Ristic M. "Motor Vehicles: A New Concept". FISITA 92 IMechE Conf. on Automotive Technology Serving Society, 7-11 June 1992.
32. Besant C.B., Ristic M., Pullen, K.R., Etemad M.R.S., Fenocchi A.and Baines N.C., "Hybrid Traction - A Solution For A Not Too Distant Future", Autotechnical Trends Conf., Apeldoorn, Holland, October 1992.
33. Ristic M. and Brujic D., Integration of Non-Contact Inspection with Modelling of Engineering Components, IEE Colloquium on 3D Imaging and Analysis of Depth/Range Images, March 1994.
34. Ristic M. and Brujic D., Integrated Modelling and Inspection of Complex Shapes, Aachen, Germany, October 1994.
35. Ristic M., Electronic Management System for Gas Turbine Powered Hybrid Vehicles, 27th ISATA, Aachen, Germany, October 1994.
36. Brujic D. and Ristic M., Analysis of Free Form Surface Registration, International Conference on Image Processing ICIP-96, Lausanne, Switzerland, 16-19 September 1996.
37. Makatsoris C., Leach N.P., Richards H.D., Besant, C.B. and Ristic, M., Addressing Planning and Control Gaps in Semiconductor Virtual Enterprises, Conference on Integration in Manufacturing, Galway, Ireland, 2-4 October 1996.
38. Leach N.P. and Ristic, M., 'Capacity Models for scheduling the virtual enterprise', Proceedings of the 1997 IFAC/IFIP Conference on Management and Control of production and Logistics, Campinas, SP, Brazil, 31 August- 3 September 1997, pp265-270.
39. Ristic M., Brujic D. and Moeljono, T., "Efficient CAD-based Visualisation of Unordered Data", International Conference on Computer Vision ICCV'98,IEEE workshop on Model Based 3D Image Analysis, 6th Bombay, India, January 4-7, 1998.
40. Ainsworth I., Ristic M. and Brujic D., Visual Cad-Based Measurement and Path Planning For Free-Form Shapes, The 7-th International Conference in Central Europe on Computer Graphics, Visualisation and Interactive Digital Media'99, WSCG '99, Prague, Czech Republic, February 8-12, 1999.
41. Rupp T. M. and Ristic M., Fine Planning for Supply Chains in Semiconductor Manufacture, 15-th International Conference on Computer Aided Production Engineering, CAPE '99, Durham, UK, 19-21 April 1999.
42. Ristic M., Brujic D. and Handayani S., CAD-Based Triangulation of Unordered Data Using Trimmed NURBS Models, 15-th International Conference on Computer Aided Production Engineering, CAPE '99, Durham, UK, 19-21 April 1999.
43. Ristic M., Brujic D. and Ainsworth I., Precision Reconstruction of Manufactured Free-Form Components, to be presented in 12th Annual International Symposium SPIE Electronic Imaging 2000, San Jose, California, 22-28 January 2000.
44. Rupp T.M., Löh H. and Ristic M., Decentralised Manufacturing Co-ordination in Complex Supply Networks, 6th International Conference on Concurrent Enterprising ICE2000 , Toulouse 28-30 June 2000
45. Löh H., Rupp T.M. and Ristic M., System Architectures for Coordination in Complex Supply Networks, Fourth IFIP/IEEE International Conference on Information Technology for Balanced Automation Systems in Manufacture and Transportation, Berlin, Germany, 27-29 September 2000.

46. Brujic D., Ristic M., and Ainsworth I., Efficient Shape Description using NURBS, IWVF4 4th International Workshop On Visual Form, Capri, Italy, May 28-30, 2001. ISSN 0302-9743
47. Ainsworth I, Brujic D. and Ristic M., Surface Modification Based On The Locally Measured Data, EuroConference on CAE Integration - Tools, Trends and Technologies (ECITTT), University of Cambridge, 29 March 2001 - 1 April 2001.
48. T.M. Rupp and M. Ristic, Determination and Exchange Of Supply Information for Co-Operation In Complex Production Networks, IMS'2001 - 3rd International Symposium on Intelligent Manufacturing Systems, Sakarya, Turkey, 30-31 August 2001.
49. Brujic D. and Ristic M., NURBS Fitting Through Large Sets of Scattered Data, SIAM Conference on Geometric Design and Computing, Sacramento, California, 5-8 November 2001.
50. Ristic , M., Haynes, C. Brujic, D. and Ainsworth, I., Remodelling of Freeform Engineering CAD Geometry from Point Data, DET-2002, 1st CIRP (UK) International Seminar on 'Digital Enterprise Technology', Durham, UK, 16-17 September 2002.
51. Lambourne J., Brujic D. and Ristic M., An Efficient Algorithm for Solving the Point Projection Problem, SIAM Conference on Geometric Design and Computing, Seattle WA, 10-13 November 2003.
52. Lambourne J., Brujic D. Ristic M. and Djuric Z, Calculation and Visualisation of the Thickness of 3D CAD Models. International Conference on Shape Modelling and Applications, MIT, Cambridge, Massachusetts, 15-17 June 2005.
53. Brujic D., Mattone M., Ristic M., Maggiore P., Di Sciuva M., Shape optimisation in CAE, IEEE International Conference on Computer as a Tool - EUROCON 2005, Belgrade, November 22-24, 2005. ISBN86-7466-218-8
54. Brujic D., Mattone M., Ristic M., Maggiore P., De Poli G.P, Parametric CAD Modelling for Shape Optimisation, Tools and Methods of Competitive Engineering TMCE 2006, April 18-22, 2006, Ljubljana, Slovenia
55. D. Brujic, M. Ristic, K. Thoma, Optimal Operation of Distributed CHP Systems for Participation in Electricity Spot Markets, in proc. Eurocon 2007 Conference, Warsaw, Poland, September 9, 2007

Patents

1. Fenocci A., Etemad, M.R., Ristic M., Besant, C.B., Pullen, K.R., Rotary Electrical Machines, Britain patent GB2 289 576, 1996
2. Besant CB, Etemad MR, Fenocchi A, Ristic M, Pullen KR, Retaining Hoop for a Rotor, Britain patent GB2 289 802, 1996.
3. Fenocci A., Etemad, M.R., Ristic M., Besant, C.B., Pullen, K.R., Keeper Disc for a Rotary Electrical Machine, Britain patent GB2 261 327, 1996
4. Ristic M., Etemad, M.R., Besant, C.B., Pullen, K.R., Rotary Electrical Machines, Britain patent GB2 278 504, 1997