

# Dr. WASIM KHAN

PhD CEng FIMechE

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## OBJECTIVE

- Seeking the role of Tertiary / University Lecturer, where a strong teaching and research background in operations management and industrial / manufacturing systems can be utilised.

## EXECUTIVE SUMMARY

- Broad lecturing background and qualifications within operations management and Industrial and Manufacturing Systems.
- Research interest includes virtual manufacturing, technology management and education management.
- Highly developed communication skills, able to confidently convey information and ideas in a clear and easily understandable way.
- Proven time management skills, a high attention to detail and experienced in managing numerous projects simultaneously.
- Analytical and detail-oriented, with the ability to comprehend and resolve complex issues.
- Challenges traditional approaches and thinks laterally, successfully implementing new methods and producing innovative and creative solutions.
- Achievements include:
  - Developed Mechanical Engineering Laboratories at Balochistan Engineering College, Khuzdar, in one of the most remote areas of Pakistan.
  - Developed a CAD/CAM Laboratory at the Ghulam Ishaq Khan Institute of Engineering Sciences, Topi, Pakistan.
  - Developed Parallel Virtual Machine (PVM) Laboratory at the Ghulam Ishaq Khan Institute of Engineering Sciences.
  - Established MS/PhD program at the Institute of Business Administration, Karachi, Pakistan.
  - Wrote two books in the area of industrial engineering with renowned international publishers and obtaining a contract for a third book.
  - Practicing and teaching project management using PMI PMBOK and ISO 9001.
  - Obtained a Fellowship of the Institution of Mechanical Engineers, UK.
  - Coordinated accreditation by NCEAC (National Computing Education Accreditation Council) , AMDISA SAQS (South Asian Quality System) and ABET (Accreditation Board for Engineering and Technology).

## CAREER HISTORY

Jul 2004 – Present

INSTITUTE OF BUSINESS ADMINISTRATION, PAKISTAN

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HEC PROFESSOR LEVEL 1

### Responsibilities:

- Develop a postgraduate program (MS / PhD) in Business and Computer Science domains.
- Prepare and give lectures to MBA / BBA / BS (CS) students. Papers include:
  - Information Systems Management – Senior/Graduate (2004)
  - Parallel Programming – Graduate (2006)
  - Project Management – Graduate (2007-08, 2010-11)
  - Modelling and Simulation – Senior (2009-10)
  - Postgraduate Technology and Operations Management – Graduate (2010-11)
- Prepare and mark assignments, essays and exams.
- Provide high quality academic advice and supervise multi-disciplinary projects for MBA (MIS) students.
- Complete research, write reports and publish articles on key subject areas as well as attending and presenting at conferences on specialty topics. These include:
  - Education Management
  - Technology Management
  - Virtual Manufacturing
  - Operations Research
- Maintain course files and student documentation.

- Develop and implement anti-plagiarism policy.

**Major Achievements:**

- Awarded additional assignments due to strong leadership capabilities and expertise. These include:
  - Acting Associate Dean for the Faculty (40+) of Computer Science (January 2009 – Present)
  - Short term assignment at the Faculty of Engineering at King Abdul Aziz University, Saudi Arabia.
  - Head – Educational Quality Enhancement Cell
- Improved quality of educational outputs by obtaining NCEAC and AMDISA SAQS accreditations. Due to accreditation from national and regional agencies, there was a marked increase in student and faculty satisfaction in learning and teaching as shown in a survey conducted by independent assessors.
- Published the book (co-authored by Professor Dr. Abdul Raouf), "Standards for Engineering Design and Manufacturing". (Please see Appendix One for details of other published works.)
- Developed the monograph "Virtual Manufacturing"; by W. A. Khan, A. Raouf, Kai Cheng; (Feb 2011), Springer Verlag, London, UK.
- Facilitated training for groups of up to 35 automotive industry personnel in the area of PMI PMBOK Method of Project Management (three groups since 2010).
- By streamlining teaching and administrative processes, student complaints regarding the teaching cycle were significantly reduced.
- Received numerous commendations from peers regarding outstanding contributions to the field.

Sep 2001 – Jun 2004

**DEPARTMENT OF PRODUCTION ENGINEERING & MECHANICAL SYSTEMS DESIGN  
FACULTY OF ENGINEERING, KING ABDUL AZIZ UNIVERSITY, SAUDI ARABIA**

◇ **Commenced** as an ASSISTANT PROFESSOR

◇ **In 2002, promoted** to the role of ASSOCIATE PROFESSOR

ASSOCIATE PROFESSOR

Sep 2002 – Jun 2004

**Responsibilities:**

- Prepare and present lessons to undergraduate and postgraduate Production Engineering Students – papers include:
  - Manufacturing Technology – Senior (2002, 2007)
  - Mechatronics – Senior (2002, 2003, 2007)
- Carry out research in the area of the Traveling Salesman Problem for combinatorial optimisation problems including manufacturing, VLSI and error correcting codes using distributed computing.
- Develop proposals for research grants from within and outside the University.
- Supervise post graduate projects.
- Provide significant input as a key member of an informal group working towards ABET specified procedures.
- Serve as a Member of the Departmental Council.

**Major Achievements:**

- Developed a Virtual Manufacturing Laboratory including live interface with the real manufacturing environment using principles of Mechatronics.
- Sanctioned a grant of SR 82600.00 against the proposal "Khan, W.A. et.al., (2003); 'Solution of Traveling Salesman Problem at Parallel Virtual Machine'; Scientific Research Unit of King Abdul Aziz University".

ASSISTANT PROFESSOR

Sep 2001 – Aug 2002

**Major Achievements:**

- Developed Parallel Virtual Machine using Red Hat Linux and its libraries.
- Gained strong knowledge base of ABET procedures for undergraduate engineering education.
- Balanced Modernization and Replacement (BMR) of Engineering Laboratories.

Oct 2000 – Sep 2001

KARACHI INSTITUTE OF INFORMATION TECHNOLOGY, PAKISTAN

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ASSOCIATE PROFESSOR

**Major Achievements:**

- Provided teaching and lecturing in the following papers:
  - Information Systems Strategy – Senior (2000-01)
  - Human Aspect of Computing – Sophomore (2001)
  - Information System Management – Graduate (2001)
  - Introduction to Databases – Junior (2000-01)
  - Microprocessor Interfacing – Graduate – FAST: Institute of Computer Science (2000-01)
- Served as Academic Events Coordinator.

Jan 1999 – Oct 2000

CRESCENT SOFTWARE PRODUCTS PVT LTD, PAKISTAN

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STAFF ENGINEER

**Responsibilities:**

- Develop a range of software for commercial and industrial applications using solid knowledge of ISO and SDLC procedures.
- Assess current and new software. Identify faults in programs.
- Create technical plans outlining the structure and integration of new software applications.
- Build and test software within agreed design specifications.
- Test and review the new software and fix any problems.
- Assist in the development of training manuals and material.

**Major Achievements:**

- Successfully led delivery as Project Manager of several key initiatives:
  - Software Compliance at State Life Insurance Corporation of Pakistan [Tools: Oracle 7.1.4, OS: Unix SCO, Domain: Insurance Business]
  - American Express [Tools: VB, SQL, OS: WIN98/ NT, Domain: Banking]
  - UDL Distribution Express [Tools: VB, SQL, OS: WIN98/ NT, Domain: Distribution]
  - IPCN [Tools: JDK 1.2.2, VC++, OS: NT Service Pack 4, DB: Lotus Domino R5, Domain: Real Estate Advertising]
  - System Architect for e-Chemicals [Tools: Java Servlets, DB2, OS: NT, Lotus Domino Go, Domain: Marketing]

Aug 1997 – Nov 1998

FACULTY OF MECHANICAL ENGINEERING  
GIK INSTITUTE OF ENGINEERING SCIENCES AND TECHNOLOGY, PAKISTAN

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ASSISTANT PROFESSOR

**Major Achievements:**

- Taught CAD/CAM paper at the Senior / Graduate level.
- Utilised BULL DPX RISC based workstations under UNIX operating system for TSP related research.
- Implemented Parallel Virtual Machine (PVM) concept on networked personal computers.
- Completed a feasibility study for Establishment of Mechatronics laboratory for teaching and research.
- Contributed in various faculty and institute level committees including Faculty Turnover, Industrial Liaison, Laboratory and Seminar working groups.

**PRIOR:**

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- ASSISTANT PROFESSOR – Faculty of Engineering Sciences, Pakistan Navy Engineering College, National University of Sciences and Technology, Pakistan (1996-97)
- ASSISTANT PROFESSOR – Faculty of Mechanical Engineering, GIK Institute of Engineering Sciences and Technology, Pakistan (1994-96)

**Major Achievements:**

- Utilised BULL DPX RISC based workstations under UNIX operating system for TSP related research.
- Established engineering laboratories for undergraduate and postgraduate studies.
- ASSISTANT ENGINEER, **promoted** to SENIOR ENGINEER (1993) – Production Division, SUPARCO, Pakistan (1991-94)  
**Major Achievements:**
  - Completed a feasibility study for development of production shops to manufacture cylindrical components.
  - Developed CAD/CAM production system utilising INDEX CNC turning centres.

## **INDUSTRY RELATED CONFERENCE HIGHLIGHTS** (Please see Appendix One for further details)

- REVIEWER – Proceedings of the Pakistan Academy of Sciences (1997-Present)
- ORGANISER – First National Seminar on 'Software Professional Skill Set Requirements, Skill Certification and Other HRD Issues Related to Software and Manpower Export', Pakistan; Sponsored by Karachi Institute of Information Technology (2001)
  - Attended by 250 participants, budget of PKR 0.25m (USD 1 = PKR 85)
- ORGANISER – Second National Seminar on 'State of Computer Science Education in Pakistan: Direction and Remedies', Pakistan; Sponsored by Karachi Institute of Information Technology (2001)
  - Attended by 250 participants, budget PKR 0.25m
- TRACK HEAD, CAD/CAM and CAE Track – First International Conference on 'Information Technology and Its Application', Australia; IEEE sponsored conference (2002)
  - Attended by 300 participants
- REVIEWER – Third International Conference on 'Information Technology and Its Applications', Australia; IEEE sponsored conference (2005)
  - Attended by 300 participants
- COORDINATOR (four conferences – 2005, 2007, 2009 & 2011) – International Conference on 'Information and Communication Technologies', Institute of Business Administration, Pakistan; ACM/IEEE Sponsored Conference

### **Major Achievements:**

- Conducted International Conferences within budgetary constraints, and achieved strong profits in terms of sponsorships secured from key international corporates such as INTEL, Microsoft and Unisys.

### **COMMITTEE WORK:**

- Member, Admissions Committee – Ghulam Ishaq Khan Institute of Engineering Sciences and Technologies
- Member, Computer Utilisation Committee – Ghulam Ishaq Khan Institute of Engineering Sciences and Technologies
- Member, Departmental Council – Department of Production Engineering and Mechanical Systems Design, Faculty of Engineering, King Abdul Aziz University
- Member, Academic Board – Institute of Business Administration
- Member, Academic Committee – Institute of Business Administration
- Member, Research Committee (Computer Science) – Centre for Business and Economics Research, Institute of Business Administration

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## **QUALIFICATIONS AND PROFESSIONAL DEVELOPMENT**

- **Doctorate (Ph.D.) in Operations Research** – Department of Mechanical and Process Engineering, University of Sheffield, England, UK (1990)

### **Major Achievements:**

- Received the 'Overseas Research Students Award' by the Committee of Vice Chancellors and Principals (CVCP) of Colleges and Universities of United Kingdom (1987, 1988).
- **Bachelor of Engineering (BE), major in Mechanical Engineering** – Department of Mechanical Engineering, N.E.D. University of Engineering and Technology, Karachi, Pakistan (1985)

### **Professional Development:**

- Introducing Program Self Assessment Practices through Quality Enhancement Cells (2011)
- Quality Assurance in Higher Education workshop – Pakistan Institute of Quality Control (PIQC), Islamabad, Pakistan (2009)
- Logframe and Proposal Writing workshop – British Council, Karach, Pakistan (2006)
- International Workshop on Computer Vision and Parallel Processing – Department of Electronics, Quaid-I-Azam University, Islamabad, Pakistan (1995)
- Dbase Plus II – Pakistan Institute of Management (1991)
- Index CNC Programing – Werke GmbH and Co, Esslingen, Germany (1991)

## PROFESSIONAL MEMBERSHIPS

- Chartered Engineer – Engineering Council, UK (CEng)
- Fellow – Institution of Mechanical Engineers, UK (FIMechE)
- Member – Pakistan Engineering Council

## LANGUAGES

- Fluent (written and oral) in English and Urdu

## COMPUTER KNOWLEDGE

- **Languages:** C++, C#, Visual FORTRAN, MOS Tech 6502 assembler, Motorola 68000 assembler, Intel 80x86 series assembler,
- **Software:** MS Office (Word, Excel, PowerPoint), MS Project
- **Technology:** Contemporary CAD/CAM Tools, 3D Studio Max, True Vision
- **OS:** Linux, Windows (All), .Net Framework Environment
- **Distributed Computing:** PVM, MPI
- **Hardware:** Computer Interfacing and Control

## PERSONAL

- Marital status – Married (three children).
- In excellent health.

## INTERESTS

- Interests include reading, writing, cricket, football, jogging, surfing internet and cooking.

## REFEREES

- Professor Kai Cheng, BEng MSc PhD FIMechE FIET  
CEng  
Head, Advanced Manufacturing & Enterprise  
Engineering (AMEE) Department  
School of Engineering and Design, Brunel  
University, UK  
Email: [kai.cheng@brunel.ac.uk](mailto:kai.cheng@brunel.ac.uk)  
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Relationship: Co-author
- Dr. Richard Harvey  
Dean UEA London and Director Admissions  
Vice-Chancellor's Office, University of East Anglia,  
UK  
Email: [r.w.harvey@uea.ac.uk](mailto:r.w.harvey@uea.ac.uk)  
Relationship: Colleague
- Professor John D Fieldhouse, BSc PhD CEng  
FIMechE, FHEA - National Teaching Fellow  
Automotive Engineering Research Group Leader  
School of Computing and Engineering, The  
University of Huddersfield, UK  
Email: [j.d.fieldhouse@hud.ac.uk](mailto:j.d.fieldhouse@hud.ac.uk)
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Relationship: Colleague
- Dr. Beatriz de la Iglesia  
School of Computing Sciences, University of East  
Anglia, UK  
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Relationship: Colleague
- Professor D.R. Hayhurst, ScD FEng  
School of Mechanical, Aerospace and Civil  
Engineering, University of Manchester, UK  
Tel: +44 0161 306 3818  
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Email: [D.R.Hayhurst@manchester.ac.uk](mailto:D.R.Hayhurst@manchester.ac.uk)  
Relationship: PhD Supervisor and colleague

# Appendix One

## Published / Presented Work

### RESEARCH PAPER (JOURNALS):

- Khan, W.A. and Hayhurst, D.R; (1991); "Computer Aided Part Program Segmentation and Reconstruction for Minimization of Machine Tool Residence Time"; Int. J. of Computer Integrated Manufacturing; Vol. 4; No. 5;pp.300-314.
- Khan, W.A. And Hayhurst, D.R; (1991) "Computer Aided Parametric Design and Manufacture of Hand Tool"; Journal of Engineering Design; Vol. 2; No. 1.
- Khan, W.A.; Khan, M. A. (1998); "A Review of Traveling Salesman Problem"; vol. 35, No. 2, 133-145, Proceedings of Pakistan Academy of Sciences.
- Khan, W.A., Hayhurst, D.R., and Cannings, C.; (1999); "Determination of Optimal Path Under Approach and Exit Constraints"; 117, 310-325, European J. of Operational Research.
- Khan, M. A.; Khan, W. A.; (1999); "A Parallel Implementation of Simulated Annealing Algorithm"; 36(2), 95-101, Proceedings of Pakistan Academy of Sciences.
- Khan, W.A; Hayhurst, D.R. (2000); "Two and Three Dimensional Path Optimization for Production Machinery"; Journal of Manufacturing Science and Engineering, Transactions of ASME, Nov 1999, Vol. 121/1.
- Khan, W.A.; Khan, M. A.; Hayhurst, D.R.; (2000); "Use of Technological Constraints as Enumeration Criteria for the Solution of TSP Applicable to Production Machinery"; Journal of Engineering Manufacture: Proceedings of the Institution of Mechanical Engineers, Vol. 214 part B.
- Khan, W.A.; Al-Doussari S.M.R; Al-Kahtani A.H.M; (2002), "Establishment of Engineering Laboratories for Undergraduate and Postgraduate Education"; Vol.27, No. 4, 425-435, European J. of Engineering Education.

#### ***[This paper was selected for inclusion in Cambridge Scientific Abstracts]***

- Aldoussari S.M.R.; Khan W.A. (2003), "TSP Solution Using Enumeration at Serial Computing Machines"; Vol. 2, No. 4, 425-435, June 2003 issue; Proceedings Pakistan Academy of Sciences.
- Khan, W.A.; Siddiqi A.B.; Ahmed; Ahmad, F.; (2006) ; "Migration of Computer Science Graduates from South Asia to Europe and North America"; European J. of Engineering Education, Vol. 31, No. 3, 311-319.
- Afifi A. A.; Hayhurst D.R; Khan W.A. (2010); "Non Productive Tool Path Optimization of Multi-Tool Part Programs"; Under Review at International Journal of Advanced Manufacturing Technology.
- Afifi A. A.; Hayhurst D.R; Khan W.A. (2010); "Non Productive Tool Path Optimization for Four Axes Milling Using the Simulated Annealing Algorithm"; accepted at International J. of Production Research.
- Khan, W. A.; Hussain, A.; (2011); "E-Commerce through Virtual Manufacturing Organization"; to be submitted to International J. of Production Research.
- Khan, W. A.; Hussain, A.; (2011); "Coding Facility for Product Life Cycle"; to be submitted to International J. of Production Research.
- Khan, W. A.; Khoja, S.; Hussain, A.; (2011); "E-Learning for Discrete Manufacturing Processes"; to be submitted to International J. of Advance Manufacturing Technologies.

### RESEARCH PAPER (CONFERENCES):

- Khan, W.A. and Shakil, M; (1995); "GENPP - A Computer Aided Generative Process Planning System"; Proceedings VII<sup>th</sup> National Conference on Aeronautics, College of Aeronautical Engineering, Risalpur, Pakistan.
- Khan, W.A.; (1996); "Path Optimization for Computer Numerical Control Machines"; Proceedings 36<sup>th</sup> Convention of the Institution of Engineers, Pakistan.
- Khan, W.A.; (1997); "Convergence Behavior of Simulated Annealing Algorithm for Random Topology of Productive Contours Formed at the Machine Tools"; Proceedings V<sup>th</sup> International Symposium on Materials 21-25 Sep 1997, Islamabad, Pakistan.
- Chattha, J.A; Khan, W.A; Qureshi, B.M.; (1998); "Automatic Coding Facility for Product Life Cycle"; Proceedings R'99 – Recovery, Recycling, Re-integration World Congress, Geneva, Switzerland.
- Khan, W.A.; Kadir K.; Shaikh, Z. A.; Kidwai R.; (2001); "Impacts of Influx of Computer Science Graduates From Developing Countries to Europe and North America"; Proceedings IEEE FIE 2001 conference 'The Future Impact on Engineering Science Education', October 10-13, 2001, Reno, Nevada, USA.

- Khan W.A.; (June 2005); "Solution of Traveling Salesman Problem at Parallel Virtual Machine"; 14<sup>th</sup> International Conference on Control and Simulation, Banel Madena, Spain.
- Sharf.Z Khan W.A; (2005); "An Investigation into the Skills Gap in the Software Industry of Pakistan"; Proceedings of the 1<sup>st</sup> International Conference on Information and Communication Technologies, 27-28 August, Karachi, Pakistan.
- Khan, W.A.; (2008); "Augmented Reality Methodology for Computer Numerical Machines"; 6<sup>th</sup> International Conference on Manufacturing Research, September 9-11, 2008, Brunel University, London, UK.
- Khan, W. A.; Khan, K.A.; Ahsan, S.S.; (2010); "Research through Social Network"; IKE'10 - 9<sup>th</sup> International Conference on Information and Knowledge Engineering; WORLDCOMP 2010, USA.
- Khan, W.A., Khan, K. A.; Iqbal, M.F; (2011); "Problems of Marketing Research through Panel Surveys and Virtul Solution"; accepted at 2011 International Conference on Information and Knowledge Engineering (IKE'11), July 18-21, 2011, USA.

#### BOOKS:

- W. A. Khan and A. Raouf; 2006; "**Standards for Engineering Design and Manufacturing**"; (Dekker Series in Mechanical Engineering), CRC Press/ Taylor and Francis, USA.  
Please refer to:  
[http://www.amazon.com/gp/product/0824758870/qid=1143963997/sr=1-1/ref=sr\\_1\\_1/104-1501062-8789500?s=books&v=glance&n=283155](http://www.amazon.com/gp/product/0824758870/qid=1143963997/sr=1-1/ref=sr_1_1/104-1501062-8789500?s=books&v=glance&n=283155)
- **Major Achievements:**
  - 'Outstanding Book on Quality' Award, 2010, Quality and Productivity Society of Pakistan.
- W. A. Khan, A. Raouf, Kai Cheng; 2011; "**Virtual Manufacturing**"; (Springer Series in Advanced Manufacturing), Springer Verlag, London, UK.  
Please refer to: [http://www.amazon.com/s/ref=nb\\_sb\\_noss?url=search-alias%3Daps&field-keywords=virtual+manufacturing+khan](http://www.amazon.com/s/ref=nb_sb_noss?url=search-alias%3Daps&field-keywords=virtual+manufacturing+khan)
- W. A. Khan and A. Raouf; (April 2013); "**Computer Numerical Control: Architecture, Construction and Usage**"; In Press; CRC Press / Taylor and Francis, USA.

#### EDITOR OF THE PROCEEDINGS:

- W.A. Khan, F. Ahmed; (2005); "First International Conference on Information and Communication Technologies"; an IEEE sponsored conference.
- W.A. Khan, A. Hussain; (2007); "Second International Conference on Information and Communication Technologies"; an IEEE sponsored conference.
- W.A. Khan, A. Hussain; (2009); "Third International Conference on Information and Communication Technologies"; an IEEE sponsored conference.
- W.A. Khan, A. Hussain; (2011); "Fourth International Conference on Information and Communication Technologies"; an IEEE sponsored conference.