

# CURRICULUM VITAE

## Gunnar Johannsen

Born: December 22, 1940  
in Hamburg, Germany

Family Status: Married, two adult children

### EDUCATIONAL HISTORY

#### Education

1947 - 1953 Elementary School, Hamburg  
1953 - 1960 High School, Hamburg  
1960 - 1967 Technical University Berlin, Germany  
(Electrical Engineering)  
1960 - 1963 University College of Music, Berlin  
(Sound Engineering)  
1994 - date Studies in Orchestra Conducting  
in Hamburg, Vienna, Kassel, etc.

#### Degrees

1967 Dipl.-Ing. Technical University Berlin  
Dept. Electrical Engineering  
(communication & information)  
1971 Dr.-Ing. Technical University Berlin  
Dept. Transport  
(flight guidance & manual control)  
1980 Dr. habil. Technical University Aachen, Germany  
Dept. Mechanical Engineering  
(Private Docent for Human-Machine Systems  
of Aeronautics and Astronautics)

Diploma Thesis "Analog-Digitalumsetzer nach dem Untergruppenverfahren"  
(Analog-digital converter using the subgroup technique)  
Advisor: Professor Dr.-Ing. W. Giloi

Doctoral Dissertation "Entwicklung und Optimierung eines vielparametrischen nichtlinearen  
Modells für den Menschen als Regler in der Fahrzeugführung"  
(Development and optimisation of a multi-parameter nonlinear  
model of the human operator in vehicle control)  
Advisors: Professors Dr.-Ing. Th. Gast and Dr.-Ing. W. Giloi

Habilitation Thesis "Manuelle Regelung in Mensch-Maschine-Systemen"  
(Manual control in human-machine systems)  
Advisors: Professors Dr.-Ing. H. Thomae and Dr.-Ing. H. Rake

## PROFESSIONAL HISTORY

|                    |                                                                                                                                                                                                                                                                                                                                  |
|--------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1967 - 1971        | Research Assistant, Institute of Flight Guidance,<br>Technical University Berlin, Germany                                                                                                                                                                                                                                        |
| 1971 - 1982        | Division Head, Human Operator Branch,<br>Research Institute for Human Engineering<br>(FGAN-FAT), near Bonn, Germany                                                                                                                                                                                                              |
| 1974 - 1982        | Lecturer for Manual Vehicle Control,                                                                                                                                                                                                                                                                                             |
| 1980 - 1982        | Private Docent for Human-Machine Systems<br>of Aeronautics and Astronautics,<br>Technical University Aachen, Germany                                                                                                                                                                                                             |
| 1977 - 1978        | Visiting Lecturer, Dept. Mech. & Industr. Engg.,<br>and Visiting Research Assoc. Professor,<br>Coordinated Science Laboratory,<br>University of Illinois at Urbana-Champaign, USA<br>(with Professor W. B. Rouse)                                                                                                                |
| 1978 - 1981        | Adjunct Assoc. Professor, Dept. Mech. & Industr. Engg.,<br>University of Illinois at Urbana-Champaign, USA<br>(with Professor W. B. Rouse)                                                                                                                                                                                       |
| 1982 - 2006        | Professor of Systems Engineering and Human-Machine Systems,<br>and Head of the Laboratory for Systems Engineering and<br>Human-Machine Systems (IMAT-MMS),<br>Institute for Measurement and Automation (IMAT),<br>Department of Mechanical Engineering,<br>University of Kassel, Germany                                         |
| 1987 - 1988        | Head, Dept. Mechanical Engineering, University of Kassel                                                                                                                                                                                                                                                                         |
| 1995 (Apr. – Oct.) | Research Fellow, Japanese-German Research Award<br>(granted by JSPS, the Japan Society for the Promotion of Science),<br>at Kyoto Institute of Technology (with Professor H. Tamura,<br>Dept. Information Technology) and at Kyoto University, Japan<br>(with Professor K. Inoue, Dept. Aeronautics and Astronautics)            |
| 1999 (Mar. – Oct.) | Research Fellow, supported by VW-Stiftung (Volkswagen-<br>Foundation), at Technical University of Vienna (Institute for<br>Handling Devices and Robotics, with Professor P. Kopacek) and<br>at Institute of Electro-Acoustics, Experimental and Applied Music,<br>Vienna, Austria (with Professors K.-P. Sattler and J. Jecklin) |
| 2004               | Research Fellow, at Kyoto University, Japan (with Professor<br>T. Sawaragi, Design Systems Laboratory for Human-Machine<br>Collaboration) and at University of British Columbia (UBC) in<br>Vancouver, Canada (with Professor S. Fels, Human Communication<br>Technologies Laboratory)                                           |

## ORGANISATION OF INTERNATIONAL CONFERENCES

|      |                                                                                                                                                                                                |
|------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1976 | Symposium Director (jointly with Professor T. B. Sheridan)<br>and Administrative Director, International Symposium<br>"Monitoring Behavior and Supervisory Control",<br>Berchtesgaden, Germany |
| 1982 | Chairman, 2nd European Annual Conference on "Human                                                                                                                                             |

- 1982 Decision Making and Manual Control", Bonn, Germany  
Chairman (jointly with Prof. J. E. Rijnsdorp, Netherlands),  
International Program Committee, IFAC/IFIP/IFORS/IEA  
Conference on "Analysis, Design, and Evaluation of Man-  
Machine Systems", Baden-Baden, Germany
- 1985 Chairman (jointly with L. Mårtensson, Sweden),  
International Program Committee, 2nd IFAC/IFIP/IFORS/IEA  
Conference on "Analysis, Design, and Evaluation of Man-  
Machine Systems", Varese, Italy
- 1989 Chairman, International Program Committee, 4th IFAC/IFIP/  
IFORS/IEA Conference on "Analysis, Design, and Evaluation of  
Man-Machine Systems", Xi'an, China
- 1993 Chairman (jointly with Dr. B.-B. Borys), 12th European Annual  
Conference on "Human Decision Making and Manual Control",  
Kassel, Germany
- 1994 Chairman, International Program Committee, IFAC Conference  
on "Integrated Systems Engineering", Baden-Baden, Germany
- 1997 Chairman (jointly with Dr. B.-B. Borys), 16th European Annual  
Conference on "Human Decision Making and Manual Control",  
Kassel, Germany
- 2001 Chairman, International Program Committee, 8th IFAC/IFIP/  
IFORS/IEA Symposium on "Analysis, Design, and Evaluation of  
Human-Machine Systems", Kassel, Germany
- 2001 Organiser and Chairman (partially also Conductor),  
International Workshop  
"Human Supervision and Control in Engineering and Music",  
with scientifically embedded orchestra concert  
(supported by Volkswagen-Foundation, Japan Foundation, etc.),  
Kassel, Germany
- 1984/87/90/93/96 Chairman, Sub-IPC (Internat. Program Comm.) for Man-Machine  
Systems of the IFAC World Congresses Budapest, Munich and  
Tallinn as well as responsible IPC-Member for Systems  
Engineering of the IFAC World Congresses Sydney and  
San Francisco
- Further Conferences: Member of Program Committees and/or Session Chairman  
at several conferences:  
IFAC: Human-Machine Systems,  
Automated Systems Based on Human Skill and Knowledge,  
Artificial Intelligence in Real-Time Control, etc;  
IEEE: Systems, Man, Cybernetics; IFIP-INTERACT: Human-  
Computer Interaction; HCI International; Human Interface/Japan;  
European Conf. Cognitive Science Approaches to Process  
Control CSAPC; European Annual Conf. Human Decision Making  
and (Manual) Control; Human-Machine Interaction and Artificial  
Intelligence in Aeronautics and Space; Marketing Ergonomics;  
Cognitive Systems Engineering in Process Control CSEPC; Internat.  
Conf. Humans and Computers;  
GMA-Congress: Knowledge-Based Systems; USEWARE;  
GI Human & Computer; etc.

## PROFESSIONAL SOCIETIES

### Memberships

|        |                                                                                                                                       |
|--------|---------------------------------------------------------------------------------------------------------------------------------------|
| Fellow | IEEE, Institute of Electrical and Electronics Engineers: Systems, Man, and Cybernetics (SMC); Control Systems; and Computer Societies |
| Member | ACM, Association for Computing Machinery                                                                                              |
| Member | HFES, Human Factors and Ergonomics Society                                                                                            |
| Member | ICMA, International Computer Music Association                                                                                        |
| Member | VDI/VDE-GMA, Gesellschaft Mess- und Automatisierungstechnik (Society for Measurement and Automatic Control)                           |
| Member | VDE-ITG, Informationstechnische Gesellschaft (Information Engineering Society)                                                        |
| Member | GI, Gesellschaft für Informatik (Society for Computer Science)                                                                        |
| Member | DGLR, Deutsche Gesellschaft für Luft- und Raumfahrt (German Society for Aeronautics and Astronautics)                                 |
| Member | GfA, Gesellschaft für Arbeitswissenschaft (Society for Work Science and Ergonomics)                                                   |
| Member | IFAC, International Federation of Automatic Control: Techn. Committees on Human-Machine Systems, etc.                                 |
| Member | Russian Academy of Transport, St. Petersburg, Russia (Academician 1993 - 2006)                                                        |

### Panel Activities

|                         |                                                                                                                              |
|-------------------------|------------------------------------------------------------------------------------------------------------------------------|
| <u>IFAC</u>             | International Federation of Automatic Control                                                                                |
| 1979 - 1996             | German Delegate, Committee on Systems Engineering                                                                            |
| 1981 - 1990             | Founder and Chairman, Working Group on Man-Machine Systems                                                                   |
| 1984 - 1990             | Vice-Chairman, Committee on Systems Engineering                                                                              |
| 1990 - 1993             | Chairman, Committee on Systems Engineering                                                                                   |
| 1993 - 1996             | Chairman, Coordinating Committee on Systems Engineering and Management                                                       |
| 1990 - 1996             | Member, Technical Board                                                                                                      |
| <u>COST Action</u>      | European Cooperation in Scientific and Technical Research                                                                    |
| 2003 - date             | German Delegate, European Cost287-ConGAS Action, Gesture CONtrolled Audio Systems                                            |
| <u>IEEE-SMC</u>         | IEEE – Systems, Man, and Cybernetics Society                                                                                 |
| 2005 – date             | Interim Vice-Chairman, Germany Chapter                                                                                       |
| <u>German Societies</u> |                                                                                                                              |
| VDI/VDE-GMA             | Panel 1.6 "Design Methods for Knowledge-Based, Learning, and Self-Organizing Automation Systems" (Vice-Chairman 1984 - 1990) |
|                         | Adaptive Systems Panel                                                                                                       |
| DGLR                    | Human Engineering Panel                                                                                                      |
|                         | Flight Control Panel                                                                                                         |

## EXPERT ACTIVITIES

|                              |                                                                                                                                                                                                                                                                                                                                                                        |
|------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Review of Research Proposals | DFG, Deutsche Forschungsgemeinschaft<br>(German Research Foundation)<br>Volkswagen-Stiftung (Foundation)<br>Deutsch-Israelische Gesellschaft<br>(German-Israeli Society)<br>European Commission<br>(Human-Computer Interaction, Basic Research,<br>Advanced Information Processing)<br>Academy of Finland<br>(Research Council, Panel in Computer Science)             |
| Review of Journal Articles   | IEEE Trans. Systems, Man, and Cybernetics<br>Internat. J. Man-Machine Studies<br>Human Factors<br>Automatisierungstechnik<br>Automatica<br>Control Engineering Practice<br>Cognition, Technology and Work<br>Telepresence                                                                                                                                              |
| Special Issue Editor         | Journal of New Music Research<br>Proceedings of the IEEE                                                                                                                                                                                                                                                                                                               |
| Member of Editorial Boards   | Internat. Journal of Industrial Ergonomics<br>Studies in Informatics and Control<br>Information & Systems Engineering<br>Information, Knowledge, Systems Management                                                                                                                                                                                                    |
| Review of Conference Papers  | IFAC World Congresses 1981/84/87/90/93/96/99/02/05<br>and other conferences of IFAC, IFIP, IEEE etc.<br>(see above Further Conferences)                                                                                                                                                                                                                                |
| Review of Research Progress  | Technical University Berlin (Human-Machine Systems)<br>European Commission (ESPRIT-Projects)<br>DLR-Institute of Flight Guidance, Braunschweig<br>Technical University Darmstadt<br>(Center for Interdisciplinary Technology Research)<br>Technical University Munich (DFG Collaborative Research<br>Centre (SFB) 453 on High-Fidelity Telepresence and<br>Teleaction) |
| Research Advisor             | European Commission (Human-Computer Interaction)<br>National Research Council (Human Factors), USA<br>Technical University St. Petersburg, Russia<br>Depts. Mechanical Engineering of<br>Delft, Eindhoven, and Enschede Universities, Netherlands<br>Kyoto University (Center of Excellence for Research and<br>Education on Complex Functional Mechanical Systems)    |
| Advisor/Lecturer             | Industrial Companies<br>and Research Institutions                                                                                                                                                                                                                                                                                                                      |

## TEACHING

|             |                                                                                                                                                                                                                                                                                                           |
|-------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|             | <u>Technical University Berlin</u>                                                                                                                                                                                                                                                                        |
| 1967 - 1971 | Contributions to Laboratory for "Anthropotechnik"                                                                                                                                                                                                                                                         |
| 1968 - 1970 | Supervision of Project and Diploma Theses                                                                                                                                                                                                                                                                 |
| 1970 - 1971 | "Manuelle Steuerung und Regelung in der Fahrzeugführung"<br>(Manual Control of Vehicles; jointly with D. Dey)                                                                                                                                                                                             |
|             | <u>Technical University Aachen</u>                                                                                                                                                                                                                                                                        |
| 1974 - 1982 | "Manuelle Fahrzeugregelung" (Manual Vehicle Control)                                                                                                                                                                                                                                                      |
|             | <u>University of Illinois at Urbana-Champaign</u>                                                                                                                                                                                                                                                         |
| 1977        | "Hybrid Computation"                                                                                                                                                                                                                                                                                      |
| 1978        | "Analysis, Modeling, and Design<br>of Man-Machine Systems" (jointly with W. B. Rouse)<br>"Computer-Aided Control Laboratory"<br>(jointly with J. B. Cruz, Jr. and P. V. Kokotovic)                                                                                                                        |
|             | <u>University of Kassel</u>                                                                                                                                                                                                                                                                               |
| 1983 - 1984 | "Regelungstechnik 1" (Control Engineering)                                                                                                                                                                                                                                                                |
| 1983 - 2006 | "Systemtechnik 1 & 2" (Systems Engineering)<br>Laboratory for "Systems Engineering 2"<br>"Mensch-Maschine-Systeme 1 & 2" (Human-Machine Systems)<br>Laboratory for "Human-Machine Systems 1"<br>Seminars on Measurement and Automation (jointly with others)<br>Supervision of Project and Diploma Theses |
| 1984 - 2005 | "Wissensbasierte Systeme" (Knowledge-Based Systems)                                                                                                                                                                                                                                                       |
| 1984 - 1992 | "Rechnergestützter Systementwurf"<br>(Computer-Supported Systems Design)                                                                                                                                                                                                                                  |
| 1993 - 1994 | "Prozessleittechnik" (Process Supervision & Control Engineering)                                                                                                                                                                                                                                          |
| 1996 - 2006 | "Mensch-Rechner-Interaktion" (Human-Computer Interaction)<br>Selected Topics (e.g., Analysis and Evaluation Methods,<br>Modelling Techniques, Design Methods, Engineering and Music)                                                                                                                      |
| 1998 - 2005 | "Systems Engineering" (in English)                                                                                                                                                                                                                                                                        |
|             | <u>Supervision of Doctoral Theses</u><br>(as <u>main examiner</u> ; dissertations written in German if not indicated<br>otherwise)                                                                                                                                                                        |
| 1985        | Investigations for Vehicle and Process Control under Special<br>Consideration of Human Monitoring and Decision Behaviour<br>(Dipl.-Ing. Wilhelm Stein)                                                                                                                                                    |
| 1992        | Online Simulation: A Tool for Supervision and Control of Slow<br>Processes (Dipl.-Ing. Christian Hessler)                                                                                                                                                                                                 |
| 1993        | Contribution to the Prediction of Assessments of Driving<br>Behaviour (Dipl.-Ing. Wolf-Dieter Käßler)                                                                                                                                                                                                     |
| 1995        | Electronic Handbooks for the Support of Knowledge-Based<br>Fault Diagnosis (Dipl.-Ing. Martin Hollender)                                                                                                                                                                                                  |
| 1995        | Human-Machine Interface of Welding Robots for the Path<br>Welding under Economic Viewpoints for the Use in Medium-Size<br>Enterprises (Dipl.-Math. Lajos Fejes)                                                                                                                                           |

- 1997 Presentation of Flight Parameters in the Visual Periphery with the Example of the Development of Helicopter Cockpits (Dipl.-Ing. Jörg-Otto Hartz)
- 1997 Modelling of the Operator Behaviour in the Supervision of Complex Dynamic Processes by Means of Connectionistic Systems (Dipl.-Wirt.-Ing. Klaus Zinser)
- 1997 Computer-Supported Knowledge Acquisition for Knowledge-Based Diagnosis Systems in the Domain of Dynamic Technical Systems (Dipl.-Inform. Sabine Borndorff-Eccarius)
- 1998 Approximate Knowledge-Based Process Visualisation by Means of Fuzzy Logic for Achieving User-Oriented Human-Machine Interfaces in Process Control (Dipl.-Ing. Salaheddin Ali)
- 1999 Touch-Sensitive Telemanipulation in the Minimally Invasive Surgery (Dipl.-Ing. Arif Kazi)
- 2000 Virtual Process Visualisation with an Example from Process Engineering (Dipl.-Ing. Carsten Wittenberg)
- 2001 Experience-Based Decision Support in Aircraft Design and Engineering (Dipl.-Ing. Markus Durstewitz; written in English)
- 2001 Identification of Industry-Overlapping Core Sequences of Operations in Industrial Process Control and Deduction of User-Oriented Design Solutions (Dipl.-Psych. Tobias Komischke)
- 2002 Mental Models of Complex Processes: Possibilities for Advancement and Preservation of Qualifications in Process Control Centres by Means of Simulation and Hypertext Handbooks (Dipl.-Psych. Jens Heuer)
- 2005 Evolutionary Optimization of Human-Machine Interfaces (Dipl.-Ing. Andreas Völkel)
- 2006 Quality-Criteria Based Analysis of Learning Systems (Dipl.-Ing. Ingo Wagner)

1983 - date Examiner for other Doctoral Theses  
in Kassel, Braunschweig, Delft (Netherlands), Enschede (Netherlands), Johannesburg (South Africa), Stockholm (Sweden), and Valenciennes (France)

1996 Supervision of Habilitation (as main examiner)  
Automation Systems for Safety and Quality Control (teaching area; and academic title Private Docent for Dr. Elena A. Averbukh  
by rehabilitation from Moscow Energetics Technical University)

Graduate College  
1990 - 1993 Chairman DFG-Graduiertenkolleg (Graduate College)  
1993 - 1994 Vice-Chairman "Arbeit, Technik und Qualifikation" (ATQ)  
(Work, Technology, and Qualification)  
(Cooperation with engineers, computer scientists, psychologists, and sociologists; supervision of doctoral students; cooperation with Guest Professors; new forms of teaching and learning)

## RESEARCH

- 1967 - 1970 Stabilization and Guidance of Vehicles by Means of Predictor Displays  
1968 - 1971 Development and Optimisation of a Multi-Parameter Nonlinear Model of the Human Operator in Vehicle Control (Doctoral Dissertation)
- 1971 - 1982 Human Controller Models and their Applications in Vehicle Guidance and Control, and Display Design
- 1972 - 1982 Workload, Adaptive and Learning Behaviour of the Human Operator
- 1974 - 1979 Human Monitoring and Decision Behaviour in Complex Human-Machine Systems
- 1978 - 1987 Experimental Investigation of Online Planning in Vehicle and Process Control (since 1985 as DFG-research project)
- 1979 - 1988 Fault Management in Decentralised Hierarchical Systems
- 1984 - 1989 Computer-Supported Design of Automation and Manipulation Systems
- 1984 - 1990 Graphics and Knowledge Based Dialogue for Dynamic Systems (ESPRIT-GRADIANT research project of European Commission; particular part projects: task and knowledge analyses for power plants, knowledge-based graphical editor, user modelling, process visualisation, fault diagnosis expert system)
- 1987 - 1991 Development of Error-Tolerant Control Input System for Flight Guidance (DFG-research project)
- 1990 - 1995 Graphic-Supported Control Input and Procedural Display System,  
1993 - 1995 New Function Allocation Concepts for Human-Computer and Air-Ground (Part projects of BRITE/EURAM research projects FANSTIC I and II of European Commission on Future Air Traffic Management, New Systems, and Technologies Integration in Cockpit)
- 1992 - 1995 Decision Support for Human-Machine Interaction in Industrial Supervisory Control and Quality Management (BMFT, Federal Ministry of Research and Technology project: bilateral cooperation with Russia)
- 1992 - 1996 Participative Design of Operator Interfaces by Means of Interactive Design and Evaluation (DFG-research project)
- 1993 - 1995 Advanced Man-Machine Interfaces for Industrial Process Control Applications (BRITE/EURAM research project of European Commission)
- 1993 - 1996 Robust Human-Machine Interaction (RoHMI) (Research Network in European Commission Program on Human Capital and Mobility)
- 1995 Knowledge-Based Multi-Human Machine Interfaces (Research project in Kyoto, Japan during fellowship of JSPS; Japanese-German Research Award)
- 1995 - 1996 Evaluation of Systems Engineering Design Method DIADEM for Human-Machine Interfaces (ESPRIT Trial Application project of European Commission)
- 1996 - 2002 Situation-Dependent Human-Machine Interaction by Means of Dynamic Representation of Technical Systems in Supervision and Control Systems Software (DFG-research project)
- 1996 - 2004 Multimedia Process Control projects (with DFG and industrial support)
- 1997 - 2002 Cooperative Planning and Disposition for Optimal Use of Available Airport Resources (DFG-research project)



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|-------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1998 - 2000 | Adaptive Human-Computer Interfaces for Process Control<br>(Cooperation with Institute of Control and System Research of the Bulgarian Academy of Sciences; with DFG support)    |
| 1998 - 2001 | Cognition Related Process Visualisation in Means-Ends Orientated Human-Machine Interfaces (DFG-research project)                                                                |
| 1998 - 1999 | The Importance of Acoustical Information for the Guidance and Usage of Technical Systems (Research project in Vienna, Austria, 1999 during fellowship of Volkswagen-Foundation) |
| 1998 - date | Auditory Displays for Human-Machine Interfaces<br>(since 2006 also DFG-research project)                                                                                        |
| 2000 - date | Human Supervision and Control in Engineering and Music                                                                                                                          |
| 2001 - 2005 | Optimisation of Means-Ends Based Human-Machine Interfaces by Evolutionary Algorithms (DFG-research project)                                                                     |
| 2001 - 2006 | Learning Systems and E-Learning                                                                                                                                                 |
| 2001 - date | Gesture Controlled Audio Systems (ConGAS)<br>(Cooperation in Scientific and Technical Research – European COST Action)                                                          |
| 2002 - date | Human Information Science Foundations of Human-Computer/Machine Interactions                                                                                                    |

#### HOST FOR VISITING RESEARCHERS (longer stays)

|             |                                                                                                                                                                          |
|-------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1990 - 1991 | Assoc. Professor T. Inagaki, University of Tsukuba, Japan<br>Institute of Information Sciences and Electronics<br>(Research Fellow of Alexander von Humboldt-Foundation) |
| 1992        | Professor T. B. Sheridan, MIT, Cambridge, USA<br>Man-Machine Systems Laboratory<br>(Guest Professor of DFG-Graduate College ATQ: Work, Technology, and Qualification)    |
| 1994 - 1996 | Dr. R. van Paassen, TU Delft, Netherlands<br>(Research Fellow of European Commission)                                                                                    |
| 1997 - 1998 | Dr. Yu Shibuya, Kyoto Institute of Technology, Japan<br>Dept. Information Technology<br>(Research Fellow of Japanese Ministry of Education)                              |

#### AWARDS

|      |                                                                                                                                                                  |
|------|------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1995 | Japanese-German Research Award, granted by JSPS, the Japan Society for the Promotion of Science                                                                  |
| 2001 | IEEE Fellow Award "for contributions to human-machine systems engineering, cognitive ergonomics, human-computer interface design, and human-centered automation" |
| 2005 | Docteur Honoris Causa (Dr. h.c.), from the Université de Valenciennes et du Hainaut-Cambrésis (UVHC) in Valenciennes, France                                     |