Images of the Twenty-First Century
Proceedings of the Annual International Conference
of the
IEEE Engineering in Medicine and Biology Society
Volume 11: 1989

Seattle, Washington • November 9–12, 1989

EDITED BY
Yongmin Kim
Francis A. Spelman

89CH2770-6

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Session 5.01: Student Paper Competition Regional Winners
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1. The Dynamic Breakdown of Heart Cell Membranes Exposed to Ramp Increases in Transmembrane Potential RJ O'Neill, Johns Hopkins University; L Tung

2. Use of Coherence in Activation Detection During Ventricular Fibrillation C Cabo, Duke University; JM Wharton, EV Simpson, RE Ideker, WM Smith

3. Interactive Video Games and Real Time Displays for the Wheelchair Aerobic Fitness Trainer BP Flaherty, University of Illinois at Chicago; CJ Robinson, WE Langbein

4. Visualization of Human Brain Structure-Function Relationships DJ Valentino, University of California, Los Angeles; JC Mazziotta, HK Huang

5. Automated Analysis of Dynamic Medical Image Series with A Priori Physiological Knowledge F Frouin, INSERM U66, Villejuif, France

6. Spectrum Analysis of Fluctuations of RBC Velocity in Microvessels by Using Microscopic Laser Doppler Velocimetry E Okada, Keio University, Japan; Y Fukuoka, J Umetani, E Sekizuka, C Oshio, H Minamitani

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Session 5.02: Student Paper Open Competition I
Session Chair: Francis Spelman, University of Washington

1. Digital Demodulator for Electrical Impedance Imaging RWM Smith, *Sheffield University, U.K.*; IL Freeston, BH Brown

2. A Rule-Based, Adaptive Window-Size Filter for the Enhancement of Subcutaneous Vascular Patterns in Thermographic Images EK Chan, *University of Texas, Austin*; JA Pearce


4. A Probabilistic Approach to the Design of Microelectrode Layouts for Neural Signal Transducers LD Clark, Jr., *Massachusetts Institute of Technology*; DJ Edell


6. Hemodynamic Model for Surgical Extracorporeal Circulation WL Van Meurs, *INSERM U305, Toulouse, France*

Session 5.03: Student Paper Open Competition II
Session Chair: W. J. Tompkins, University of Wisconsin - Madison

1. A New Ultrasonic Probe for the Local Attenuation Measurement in Biological Soft Tissues CM Martin, *INSERM U281, Lyon, France*; JY Chapelon, D Cathignol

2. Spline Generated Laplacians of Evoked Potentials SK Law, *Tulane University*; PNunez, AV Nelson, KL Pilgreen

3. Measurement of Autonomic Balance in Patients with Myocardial Infarction MTangella, *Rutgers University*; J Li, WCraelius


6. A New Skin Substitute Suitable for Immediate Coverage of Severe Burns L Shahabeddin, *Laboratoire des Substituts Cutanes, Lyon, France*

Track 12: Artificial Intelligence and Information
Chair: Stanley Finkelstein

Session 12.01: Intelligent Measurement Systems
Session Chair: Ewart R. Carson, City University, London, U.K.


3. **Distribution of Principal Sources of Invalid Physiologic Data**  
   SJ Aukburg,  
   *University of Pennsylvania*; PV Matsiras, D Garfinkel, ER Carson  
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4. **Detection of False Alarms Using an Integrated Anesthesia Monitor**  
   MJ Navabi,  
   *University of Arizona*; KC Mylrea, RC Watt  
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5. **RESPAID: Computer Aided Decision Support For Respiratory Data in I.C.U.**  
   MC Chambrin,  
   *University of Lille, France*; C Chopin, P Ravaux, J Mangalaboyi, P Lestavel, F Fourrier  
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6. **A Scheme for Updating Belief in a Hierarchy of Hypotheses and Its Application for the Interpretation of Laboratory Test Results**  
   JJ Chelsom,  
   *City University, London*; ER Carson  
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### Session 12.02: Expert Systems in Cytology and Histology

**Session Chair:** Richard M. Donovan, University of California, Davis

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<td>Expert System Techniques Applied to the In Situ Cytophotometric Detection of AIDS Viral Nucleic Acid</td>
<td>RM Donovan, <em>University of California, Davis</em>; L Song</td>
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<td>From Vision to Diagnosis: A Multi-Agent System in Biomedicine</td>
<td>C Garbay, <em>Universite Joseph Fourier, Grenoble, France</em></td>
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**Session Chair:** John Deller, Michigan State University

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<td>1.</td>
<td>AI and Augmentative Communication: Where Are We and Where to go?</td>
<td>BK Sy, <em>City University of New York</em></td>
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<td>Use of Myoelectric Signals to Recognize Speech</td>
<td>MS Morse, <em>Auburn University</em>; SH Day, B Troull, H Morse</td>
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<td>The Structure and Function of a Speech Control Language for Text Processing and Robotic Control</td>
<td>DM Horowitz, <em>Tufts University</em>; JM Hausdorff</td>
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<td>Parsing Method for Signed Telecommunication</td>
<td>MB Waldron, <em>Ohio State University</em>; D Simon</td>
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<td>Use of Object Oriented Language in Fast Prototyping of Communicators for Disabled</td>
<td>J Tichon, <em>Universite Lille, France</em>; G Trehou, JM Toullette</td>
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Session Chair: John Glover, Periklis Ktonas, University of Houston

1. Information Processing Models for Automatic Sleep Scoring  JC Principe, 
   University of Florida; TG Chang, SK Gala, AP Tome 1804

2. AI Techniques for K-Complex Detection in Human Sleep EEGs  BH Jansen, 
   University of Houston; BM Dawant, K Meddahi, W Martens, P Griep, AC Decleerck 1806

3. Rule Based System for Interpretation of Evoked Potential Waveforms  JR Boston, 
   University of Pittsburgh 1808

4. Spike Detection Using a Syntactic Pattern Recognition Approach  R Walters, 
   University of Florida; JC Principe, SH Park 1810

5. Computer-Aided Locomotion by Implanted Electrical Stimulation (CALIES Project)  
   P Rabischong, INSERM U103, Montpellier, France; JL Weber, E Rabischong, JP Micallef, E Peruchon, B Gilbert, JM Jullian 985

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1. Artificial Intelligence in Psychiatry: Issues and Questions  R Morelli, Trinity College 1812

2. Distributed Expertise: Motivation to Explore Alternative Approaches  CH Stinson, 
   University of California, San Francisco 1814

3. INTERLOCUTOR: Conferring with an Expert Diagnostic Consultant in Geriatric Psychiatry  
   GWerner, University of Pittsburgh; E Smith 1816


Session 12.06: Reasoning in Clinical Expert Systems
Session Chair: Jeffrey Budd, University of Minnesota

1. Matrix Cognition in Medical Artificial Intelligence  JH Frenster, Physicians’ Educational Series, Atherton, CA 1821

2. Formation of Pathophysiologic Theories  LM Fu, University of Wisconsin - Milwaukee 1823

3. Medical Reasoning by Causal Simulation  LM Fu, University of Wisconsin - Milwaukee 1825

4. Causal Expert Systems Supporting Medical Decision Making and Medical Education  
   G Molino, Universita di Torino, Italy; L Console, P Torasso 1827

5. A Combined Statistical and Rule-based Classifier  D Tien, University of Sydney, Australia; P Nickolls 1829
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Session Chair: Peter Kerkhof, University of Utrecht, The Netherlands

1. Matrix Structure Representation of a Medical Knowledge Base  PLM Kerkhof, University of Utrecht, The Netherlands
2. A Feature Selection Approach to Concept Acquisition  I Moraes, University of Toledo; KJ Cios
3. Symbolic Processing in Intelligent Monitoring  V Moret-Bonillo, Medical College of Georgia; A Alonso-Betanzos, B Arcay-Varela
4. Use of Objects in a Hospital Information System  JM van den Berg, Leiden State University, The Netherlands; H Berger, TD Meijler
5. Medical Informatics at the AMA: Computer Oriented Biomedical Nomenclature  DO Schiffman, American Medical Association, Chicago
6. Towards a Knowledge-Based System of Structural Biology  J Brinkley, University of Washington; J Prothero

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Session Chair: Alessandro D’Atri, Universita dell’Aquila, Italy

1. Towards More Friendly and Powerful Medical Information Systems  A D’Atri, Universita dell’Aquila, Italy; P DiFelice
2. GENESE: Narrowing the Gap Between Experts and Systems  JD Fekete, C2V, Paris; B Hap, R Dumeur
3. Browsing in an Ambulatory Information System  V Curro, Universita di Roma, Italy; L Tarantino
4. Man-Machine Interaction in Deep Diagnostic Systems  P Torasso, Universita di Torino, Italy; L Console, P Terenziani, G Molino
5. Intelligent Databases for Medical Statistical Analysis  G Falcitelli, ISRDS/CNR, Rome, Italy; DM Pisanelli, FL Ricci
6. Representing Image Analysis Strategies by a Hybrid Formalism  F de Rosis, Institute of Computer Science, Bari, Italy; A Giancaspro, G Pasquariello, S Pizzutilo

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Session Chair: Stanley Finkelstein, University of Minnesota

1. ARRES: Computer Assisted Post Anesthesia Care Unit Monitoring System  PH Ketikidis, University of Pennsylvania; DS Kitz, JH Lecky, TG Mavrides, BB Matschinsky, SJ Aukburg
2. WEANPRO: A Weaning Protocol Expert System  DA Tong, Louisiana Tech University, Ruston; EB Golden, SA Napper

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3. NST Expert: An Intelligent Program for NST Interpretation  
   A Alonso-Betanzos,  
   Medical College of Georgia;  
   V Moret Bonillo, LD Devoe, JR Searle, C Boveda Alvarez

4. A Knowledge Based System to Suggest Adaptive Equipment for Disabled Drivers  
   JC Wheeler, Texas A&M University;  
   R Koppa, M McDermott, N Ellis, RD Huchingson

5. An Expert System to Aid in the Prescription of Electronic Augmentative  
   Communication Devices  
   KV Bertrand, Louisiana Tech University, Ruston;  
   SA Napper, PM Ezell

6. Decision Support Systems and Communication in Medicine at the University of Limburg  
   A Hasman, University of Limburg, The Netherlands

Session 12.10: Clinical Decision Support Systems II
Session Chair: Masahiko Okada, Niigata University, Niigata City, Japan

1. Implementing Cognitive Procedures in Diagnostic Processes  
   V Moret-Bonillo,  
   Medical College of Georgia;  
   A Alonso-Betanzos, C Hernandez-Sande

2. Problems and Solutions in the Development of an Expert System  
   S Shiina, Tokyo Medical & Dental University, Japan

3. Evaluation of a Knowledge-Based System for the Management of Fluid/Electrolyte Disorders  
   A Shamsolmaali, City University, London;  
   PO Collinson, TG Gray,  
   DG Cram, ER Carson

   K Morishita, Hitachi Ltd., Japan;  
   K Nakayashiki, T Yokoyama, T Sato, K Ishida

5. COMA: A Computer Aided System for Orientation of Comatose Patients to Specialized Sections  
   MO Boniface, University of Lille, France;  
   M Chambrin, F Fourrier, C Basquin, JL Salomez, C Chopin, J Mangalaboyi, D Mathieu, P Caben,  
   JJ Marquis

6. EDDY: An Expert System in Dysmorphology Based on Truth-Maintenance  
   IP Popchev, Institute of Industrial Cybernetics & Robotics, Bulgaria;  
   NP Zlateva, LJ Sinapova

Track 13: Computers in Medicine
Chair: Swamy Laxminarayan

Session 13.01: Physiological Data Characterization
Session Chair: Robert Peura, Worcester Polytechnic Institute

1. New Mathematical Tool for Testing Functional Homology Between Protein Sequences  
   D Pantic, Centar za Multidisciplinarne Studije, Yugoslavia;  
   S Kun, Z Bozovic, Z Stojiljkovic, M Trajkovic

2. Dimensional Analysis of the Electroencephalogram During General Anesthesia  
   RC Watt, University of Arizona;  
   KC Ehlers, PJ Scipione, ES Maslana, SR Hameroff
3. Efficient Generation of Clinical EEG Contour Maps  
   TM Mohansingh, *Case Western Reserve University*; TF Collura  
   1883

4. Fractal Number and Spectral Skewness: Two Features for the Pattern Classification of Motor Unit Action Potentials  
   AF Kohn, *University of Sao Paulo, Brazil*  
   1885

5. A Method of Spectra-Analysis for Abnormal Voice Signals  
   G Kang, *Huazhong University of Science & Technology, China*; J Lin, Q Yang, G Cai  
   1887

6. A Practical Technique for Measuring Peripheral Nerve DCV  
   ZL Kovacs, *University of Sao Paulo, Brazil*  
   1889

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**Session 13.02: Biomedical Supercomputing - Molecular Dynamics**  
Session Chair: Janardan S. Yadav, NJ Med School; T P Singh, All India Inst of Medical Sciences

1. Designing of Structures of Peptides and Proteins  
   HC Patel, *All India Institute of Medical Sciences, India*; P Narula, TP Singh  
   1890

2. Analysis and Prospective Design for the Treatment of Cancer and AIDS  
   FH Hausheer, *University of Texas Health Science Center at San Antonio*  
   1892

3. Protein Dynamics by CRAY Supercomputer: Gating of a Ca++ Channel in a Unique 19kD Hydrophobic Phosphoprotein, Amelogenin from Bovine Tooth Enamel  
   V Renugopalakrishnan, *Harvard Medical School*; M Prabhakaran, SG Huang, E Strawich, J Glimcher  
   1895

4. Molecular Modeling in Protein Design and Engineering  
   FA Momany, *Polygen Corp., Waltham, MA*  
   1897

5. Molecular Modeling of Oligosaccharides in Biomolecular Engineering  
   M Dauchez, *INSERM U279, Lille, France*  
   1899

6. Conformational Structure of the Immunologically Active Pentasaccharide of Forssman Antigen  
   PNS Yadav, *Banaras Hindu University, India*; DK Rai, JS Yadav  
   1900

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**Session 13.03: Biomedical Supercomputing - Drug Design**  
Session Chair: V. Renugopalakrishnan, Harvard Medical School

1. Supercomputers in Drug Design  
   JS Yadav, *University of Medicine & Dentistry of New Jersey*; S Laxminarayan, L Michelson  
   1901

2. Using Theoretical Descriptors in Quantitative Structure Activity Relationships  
   GR Famini, *US Army Development and Engineering Center, Aberdeen Proving Grounds*; LY Wilson  
   1903

3. The Role of Shape Analysis in Drug Design  
   PG Mezey, *University of Saskatchewan, Canada*  
   1905

4. Quantitative Measures of Molecular Similarity  
   GA Arteca, *University of Saskatchewan, Canada*; PG Mezey  
   1907

5. Crystallography of Carbohydrates  
   MK Strumpel, *Free University of Berlin, FRG*; P Luger  
   1909

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6. **Parallel Processing and Computational Chemistry**  
   P Weiner, *Alliant Computer Systems, Littleton, MA*

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Session Chair: O. Prakash, Erasmus University, The Netherlands

1. **A Computerized Approach to Injury Description**  
   G Reddy, *University of New Mexico*; D Fletcher, T Osler

2. **The MeDEA Project: Supporting Coding of Medical Documents**  
   A Rossi-Mori, *ITBMCNR, Rome, Italy*; DMPisanelli, P Chiappetta, M Riccardi

3. **An Electronic System for Integrated Management of Patients’ Data and Radiological Images**  
   A Agnifili, *Università dell’Aquila, Italy*; G Di Stefano, P Pavone, C Buoni, R Passariello

4. **Relational Database: A Radiation Therapy Machine Control Software Development Tool**  
   J Jacky, *University of Washington*; R Risler, S Brossard, I Kalet

5. **Personal Computer Analysis of Risk Factors in Kidney Transplantation Programmes**  
   A Buscaroli, *Università di Bologna, Italy*; B Stagni, A Terni, S Stefoni

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Session Chair: Shiva Ayyadurai, Massachusetts Institute of Technology

1. **Computer Visualization Techniques Applied to Vestibular Research**  
   MD Ross, *NASA Ames Research Center*; G Meyer, L Cutler, T Lam, D Mugler

2. **Automatic Identification of Tissue Interfaces**  
   H Rusinek, *New York University*

3. **The Analytical Descriptors of Three-Dimensional Geometry of Human Organs**  
   G Tritto, *Clinique Hartmann, Paris*; MC Tritto, G Pirlo

4. **Display of EEG Chaotic Dynamics**  
   FS Yu, *University of Florida*; J Principe, S Reid

5. **Active Volumetric Compositing to Display Fuzzy Structures from Multiscale Volume Data**  
   C Barillot, *Pontchaillou Hospital, Rennes, France*

6. **Modeling Human Organs with Free-Form Surfaces**  
   J Sequeira, *IBM Paris Scientific Center, France*

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Session Chair: Y. C. Pao, University of Nebraska, Lincoln

1. **Computer-Assisted Stereotaxic Surgery**  
   CF Walker, *Tulane University*; U Taneja

2. **A Three-Dimensional Locating Pointer for Stereotactic Neurosurgery**  
   RL Galloway, *Vanderbilt University*; CA Edwards, GL Haden, RJ Maciunas

3. **A Computer Assisted Stereotactic Approach for Multibeam Radiation Therapy Planning**  
   F Fresne, *Pontchaillou Hospital, Rennes, France*; B Gibaud, C Barillot, C Toumoulin, D Lemoine, JP Manens, JM Scarabin

4. **A Review of CAD/CAM Procedures for the Production of Custom Made Artificial Hip Joints**  
   GR Harvey, *Queen’s University of Belfast, U.K.*; RAH Harvey, DRH Harvey

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5. Bi-Cubic Spline Fitting and Display of Tooth External Surface and Canal  
YC Pao,  
University of Nebraska, Lincoln; PY Qin, QS Yuan  
1940

6. Flow Dynamics of Different By-Pass Configurations: A Numerical Approach  
R Pietrabissa, Politecnico di Milano, Italy; F Inzoli, R Fumero  
1942

Session 13.08: Computer Models of Physiological Systems  
Session Chair: Amit Chatterjea, Indiana Univ-Purdue University, Ft Wayne, IN

1. Computer Modelisation of Myocardial Depolarization. Application to Fibrillation  
AL Bardou, INSERM U256, Hopital Broussais, Paris; P Auger, A Coulombe, MC Govaere, JM Chesnais, D Von Euw  
1944

2. Optimal Design of Corneal Refractive Surgery  
MR Bryant, University of Wisconsin-Madison; S A Velinsky  
1946

3. Cardiac Dysrhythmias — A Phenomenon of Chaos  
B Valiquette, Ecole Polytechnique de Montreal; G Lambert Torres, D Mukhedkar  
1948

G Tritto, Clinique Hartmann, Paris; G Pirlo, MC Tritto  
1951

5. A Comparison of Mathematical Models of Nasal Pressure-Flow Data  
RE Frye, University of Pennsylvania; A Mester, DA Deems, RL Doty  
304

6. Human Body Motion Image Analysis System  
GA Rong, Tsinghua University, China; JW Huang  
1953

Session 13.09: Data Acquisition & Simulation Systems  
Session Chair: F. Pinciroli, Politecnico di Milano, Italy

1. High Speed PET Data Acquisition with a Standard Mini Computer  
TK Lewellen, University of Washington; CP Anson, SD Vannoy, RS Miyaoka  
1955

2. A Desktop Computer Software Package for Display and Analysis of Multidimensional Medical Images  
BJ Erickson, Mayo Clinic; RA Robb  
1957

3. The EKG Challenger Revisited  
SK Ananthraman, New Jersey Institute of Technology; SS Reisman, KJ Friedman  
1959

4. Teaching Dynamic Electrocardiography by Means of Environmental Simulation:  
F Pinciroli, Politecnico di Milano, Italy; V Castelli, G Mosca  
1961

5. A Generalized ECG Simulator: An Educational Tool  
I Sadighi, Montana State University; M Kejariwal  
1963

6. A Simulator of Therapies for Education in Diabetes  
EJ Gomez-Aguilera, Universidad Politecnica de Madrid, Spain; MT Arredondo, JL Zoreda, F del Pozo  
1965

Session 13.10: Computer-Based Medical Systems  
Session Chair: J. Kampmann, Medizinische Hochschule, Hannover, FRG

1. An Integrated Real-Time Computerized Hearing Testing System  
L Shao, University of Michigan; BE Pfingst  
1967

3. Quantitative Analysis of Joint Images from Patients with Rheumatoid Arthritis RM Valente, Mayo Clinic; HS Luthra, RA Robb 1971


5. Performance Optimization for Real-Time Computers in Medical Applications EA Schroeppe, MODCOMP, Fort Lauderdale, FL 1975

6. Implications of Surgical Simulation Technology Upon the Training of Arthroscopic Surgeons JS Hersh, Rensselaer Polytechnic Institute 1977

Session 13.11: Microcomputer Applications
Session Chair: Swamy Laxminarayan, New Jersey Medical School

1. An Efficient Algorithm for Estimating Circulatory Mechanical Parameters by Microcomputers G Avanzolini, University of Bologna, Italy; A Cappello, G Gnudi 1979


3. Patient Care Workstation for Realtime Monitoring O Prakash, Erasmus University, The Netherlands 1984


5. A Microcomputer-Based Modular Data Acquisition and Processing System for Physiological Study KW Lin, National Cheng-Kung University, Taiwan; MS Young, SK Liao 1987


Session 13.12: Expert Systems
Session Chair: C. Hernandez, University of Santiago, Spain

1. Combination of a Neural Network Model and a Rule-Based Expert System to Determine Efficacy of Medical Testing Procedures ME Cohen, University of California, San Francisco; DL Hudson, MF Anderson 1991

2. Physical and Functional Integration System for Intelligent Processing and Prioritization of Variables in an ICU B Arcay, University of Santiago, Spain; V Moret, R Balsa, C Hernandez 1993

3. More Than Classical Patient Monitoring: Steps Towards Intelligent Approaches S Barro, University of Santiago, Spain; R Ruiz, J Mira 1995


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3. **More Than Classical Patient Monitoring: Steps Towards Intelligent Approaches**  
   S Barro, *University of Santiago, Spain*; R Ruiz, J Mira  
   1995

4. **Clinical Datafiles and Expert Systems: Knowledge Evaluation from Data Analysis**  
   A Duhamel, *CERIM, Lille, France*; F Roussel, C Robert, L Moussu  
   1997

5. **Expert System on Neonatal Birth Injuries**  
   C Veena Kumari, *Andhra University, India*; G Sundara Rao, G Madhusudhana Rao, KVVS Reddy  
   1999

6. **Fundamental Study of Auxiliary Diagnostic System**  
   Y Yang, *Zhejiang University, China*; J Ge  
   2001

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Session 13.13: Systems, Standards and Information Management Systems  
Session Chair: Dinkar Mukhedkar, Ecole Polytechnique de Montreal

1. **Physiological Implementation of the Basilar Membrane/Vocal Tract on Transputers**  
   K Adamson, *University of Ulster, U.K.*; G Donnan, ND Black  
   2003

2. **OB Information Management System: A Microcomputer Solution**  
   S Subramanian, *University Hospital, Stony Brook*  
   2005

3. **Multimodality Image Registration Techniques in Medicine**  
   M Moshfeghi, *Phillips Laboratories, Briarcliff Manor, NY*  
   2007

4. **An Automatic Medical Emergency Telephone Communications Device**  
   WJ Jameson, *Montana State University*; M Kejarawal, T Herreid, C Mitten, JM Ray  
   2009

5. **On Using Formal Software Engineering Techniques in an Academic Environment**  
   CP Anson, *University of Washington*; RL Harrison, TK Lewellen, SB Gillispie, KP Pollard, AN Bice, RS Miyaoka, DH Haynor, J Zhu  
   2011

6. **Requirements for an Interchange Format for Digitized EEG**  
   EC Jacobs, *Cleveland Clinic Foundation*; TF Collura, RC Burgess  
   2013

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**Track 14: Neural Networks**  
Chair: Evangelia Micheli-Tzanakou

Session 14.01: Neural Networks in Cardiology  
Session Chair: M. Waldron, Ohio State University

1. **Detection of Abnormal Electrocardiograms Using a Neural Network Approach**  
   JY Cheung, *University of Oklahoma*; SS Hull, Jr.  
   2015

2. **Classification of QRS Pattern by an Associative Memory Model**  
   KP Lin, *Chung-Yuan Christian University, Taiwan*; WH Chang  
   2017

3. **Data Compression Using Neural Network for Digital Holter Monitor**  
   Y Nagasaka, *Nagoya Institute of Technology, Japan*; A Iwata, N Suzumura  
   2019

4. **Neural Nets for ECG Classification**  
   E Pietka, *Technical University of Silesia, Poland*  
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5. **A Neural Network Weight Pattern Study with ECG Pattern Recognition**  
   Q Xue, *University of Wisconsin - Madison*; Y Hu, WJ Tompkins  
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1. **Evaluation of a Neural Network for Fault-Tolerant, Real-time, Adaptive Control**
   - DJ Wasser, *University of North Carolina, Chapel Hill*; DW Hislop, RN Johnson

2. **A Micropopulation Model Adaptation for Neural Network Studies**
   - E Ackerman, *University of Minnesota*; D Kilis, GA Hatfield

3. **Wormhole-type Routing in Neural Networks**
   - A Shaout, *University of Michigan - Dearborn*; K Akingbehin

4. **Use of Neural Networks for Detection of Artifacts in Arterial Pressure Waveforms**
   - AV Sebald, *University of California, San Diego*

5. **An Electronic Neurocomputer Using General Purpose Floating Point Digital Signal Processors**
   - A Iwata, *Nagoya Institute of Technology, Japan*; Y Sato, N Suzumura, S Matsuda, Y Yoshida

6. **Decomposing Neural Networks into Systems of Cooperating Subnets**
   - S Mukherjee, *North Carolina State University*; M White

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1. **Efficient Presentations of Learning Samples to Accelerate the Convergence of Learning in Multilayer Perceptron**
   - A Okamoto, *Nagoya University, Japan*; N Ohnishi, N Sugie

2. **Need for a Knowledge-based Subsystem in Evoked Potential Neural-Net Recognition System**
   - I Bruha, *McMaster University, Canada*; GP Madhavan

3. **Neural Network Model of Color Vision**
   - S Usui, *Toyohashi University of Technology, Japan*; S Nakauchi, S Miyake

4. **EEG Waveform Analysis Using CaseNet**
   - RC Eberhart, *Johns Hopkins University*; RW Dobbins, WRS Webber

5. **Convergence of Images in the Alopex Process with Moment Invariants and Probabilities**
   - E Micheli-Tzanakou, *Rutgers University*; TS Chon

Session 14.04: Modeling Using Neural Networks
Session Chair: R. Eberhart, Johns Hopkins University

1. **Experimental Study on Origin of Cerebral Bioelectric Rhythm**
   - D Pinzhong, *Tianjin University, China*; G Yian

2. **Confusion Test on Content Addressable Memory Model**
   - W Hu, *University of North Carolina, Chapel Hill*; HS Hsiao

3. **Phase Dependent Output in a Time Varying Neural Net**
   - D Pollock, *Ohio State University*; MB Waldron

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4. Construction of Multiplier By Neural Network  N Toda, Toyohashi University of Technology, Japan; S Usui  2056

5. Connectionist Modeling vs. Bayesian Procedures for Sparse Data Pharmacokinetic Parameter Estimation  R Shadmehr, University of Southern California; DZ D'Argenio  2058

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