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A SMARTER COMPUTER CAN MAKE YOU MORE MONEY

The Second International Conference on

Artificial Intelligence Applications on Wall Street

Tactical & Strategic Computing Technologies

PRELIMINARY PROGRAM

April 19-22, 1993

New York City

New York Hilton and Towers
at Rockefeller Center

Chaired by:
Dr. Roy Freedman
Inductive Solutions

Invited Speakers:
Robert Mark, Chemical Banking Co.
Nai-Kuan Huang, Taiwan Stock Exchange
Guido Deboeck, The World Bank

SPONSORED BY
Division of Management, Polytechnic University
International Association of Knowledge Engineers (IAKE)
Wall Street & Technology
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IN COOPERATION WITH
American Association for Artificial Intelligence (AAAI)
Association for Computing Machinery (ACM)
Society for the Management of AI Resources and Technology -Financial Services (SMART-F$)
AI Expert
European Coordinating Committee for Artificial Intelligence (ECCAI)

REGISTRATION FORM AI on Wall Street '93

Please complete this form and send to:

AI on Wall Street '93
Conference Registrar
973D Russell Avenue
Gaithersburg, MD 20879
Tel: (301) 948-5390 (for registration by credit card)
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Full registration fee must accompany this form. For additional registrants, please make photocopies of this form.

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AI on Wall Street Registration includes admission to all panel and paper sessions and entitlement to Conference Proceedings, as well as admission to social events and coffee breaks. Tutorials are not included in Technical Program registration fees, nor are theyeligible for discounts. The full Program & Tutorial fee does, however, include admission to the tutorial of your choice. If you wish to register for a specific Tutorial, please indicate your choice from the list on page 3.

Registration Fees

Please check appropriate categories	By March 31		After March 31	
	Member*	Non-Member*	Member*	Non-Member*
Full Program and Tutorial	$545	$645	$645	$745
Three Day Technical Program	$375	$475	$475	$575
Half-Day Tutorial	$195	$295	$295	$395

First Choice: ____________________________

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* Member of Supporting organizations: IAKE, AAAI, ACM, Smart-F$, Wall Street & Technology, Polytechnic University, New York Chamber of Commerce, AI Expert.

Refunds: Refunds (less $50 processing fee) will be returned to participants if a written request reaches the Conference Registrar by April 2, 1993. No refunds will be made after this date.

Accomodations: The New York Hilton and Towers has set aside a number of rooms at the special conference rate of US $155 for a single and US $195 for a double until April 1, 1993. You may register with the Hotel directly (1335 Avenue of the Americas, NY 10019 Tel: 212-586-7000 Toll-Free: 1-800-445-8667) for the conference at this special rate and stay as long as you like. The Hilton is conveniently located close to major New York attractions.

Exhibit Information: For Exhibit Information, please contact Dave Frankel at (203) 834-9936.

Monday, April 19

TUTORIALS

8:00 AM - 12 Noon

TU01 Data Transformation for Successful Neural Networks
Susan Garavaglia, *Dun & Bradstreet Information Services*
This tutorial is designed to make available data more predictive in a neural network, as well as to improve network performance when data is sparse. Examples of successful applications will be discussed, and "before" and "after" network results shown.

TU02 The Verification and Validation of Knowledge-Based Systems
Robert O'Keefe, *Rensselaer Polytechnic Institute*
This tutorial is designed for all developers or managers of knowledge-based systems, and presents concepts and techniques vital to the success of every system. Specific attention will be directed to Wall Street applications, where a poorly verified system can lead to significant financial loss.

TU03 The Integration of Multimedia and Expert System Technologies
John Coyne, *The George Washington University*
This tutorial will introduce the technology necessary to integrate multimedia and expert systems, and the benefits that can be expected from such interaction. Particular attention will be given to Wall Street applications, and techniques successful in that arena.

TU04 Financial Engineering: Object-Oriented and Symbolic Methods
Ross M. Miller, *GE Corporate R&D*
This tutorial provides an introduction to the use of object-oriented and symbolic computing technologies for the representation, design, and validation of complex financial instruments. A number of real examples including stand-alone options and bonds with multiple options will be provided.

1:00 PM- 5:00 PM

TU05 Mechanisms and Techniques Underlying Case-Based Reasoning
Evangelos Simoudis, *Lockheed AI Center*
This tutorial is designed to present the mechanisms and techniques underlying Case-Based Reasoning with special emphasis on CBR's potential as an alternative to current expert system techniques for the development of applications. Both theoretical and practical issues will be discussed and the advantages of CBR as opposed to other methods presented.

TU06 Artificial Intelligence Applications on Wall Street: An Introduction to the Theory and Practice
Roy Freedman, *Inductive Solutions*
This tutorial is designed for the professional on Wall Street who would like to increase his/her competetive edge by introducting Artificial Intelligence techniques to applications. An indepth introduction will be presented for applying rule-based systems, case-based systems, neural networks, and Genetic Algorithms to trading, training, screening and surveillance.

TU07 Coordinating Collaborative Human Computer Systems: Basic Issues, First Solution and Commercial Impacts
Stefan Kirn, *Westfalische Wilhelms-Universitat Munster, Institute fur Wirtschaftsinformatik*
This tutorial highlights a growing effort to develop integrated human collaborative systems that can significantly enhance the problem solving capabilities of human experts. The development of an integrated theory of human computer coordination will help link humans and computers together in order to let them collaboratively work on complex "non-standard" problems.

Tuesday, April 20

Registration 8:00-9:00 · Exhibits 10:00-6:00
Conference Chair's Welcome 9:00-9:15
Roy S. Freedman, Inductive Solutions, Inc.

Invited Speaker 9:15-10:30
Robert Mark, Chemical Banking Co.
New Directions in Risk Management

Coffee Break 10:30-11:00

Technical Program 11:00-12:30

Paper Session: **Understanding News**
Chair: Chidanand Apte, IBM

Fact Extraction from Financial News
Kai Schirmer and Michael Kuehn, Intelligent Financial Systems GmbH (Germany)

Goal-Based Reasoning for Securities Analysis
Raghav K. Madhavan, New York University

Extracting and Disseminating Information from Real-Time News
Edwin R. Addison, ConQuest Software

Legal Protection of Financial, Economic, and Industrial Data
Mikhail Lotvin, Pennie & Edmons and Rochard Nemes, Pace University

Paper Session: **Technology Transfer**
Chair: Milton White, DATANAMICS

Business Technology: Strategy, Re-Engineering, ROI
Neal M. Goldsmith, Tribeca Research, Inc.

AI and Computer Supported Cooperative Work
L.J. Thomae, S.W.I.F.T.

Video TNT—Personal Video-Conferencing for Trading and Training
Hy Chantz, Bankers Trust (London)

Technology Transfer: An Expert System for Adoption of Innovation Decisions
James Bowen, CompEngServ Ltd. and Uma Kumar, Carleton University

Lunch 12:30-1:30

Technical Program 1:30-3:00

PANEL PRESENTATION
The Future of Automated Trading

Chair: Marc Chaikin, INSTINET Corporation
Christopher Keith, Global Trade,
Evan Schulman, Lattice Softbridge Steven Wunch, AZX, Inc. ·
David Leinwebber, First Quadrant

Coffee Break 3:00-3:30

Technical Program 3:30-5:00

Paper Session: **Fuzzy Financial Time Series**
Chair: Dan Schutzer, Citibank, N.A.

A Model-Free Trainable Fuzzy System for the Analysis of Financial Time-Series Data
Earl Cox, The Metus Systems Group

Searching for Relevant Fuzzy Patterns in Financial Time Series with Genetic Algorithms Toward a Geometry of Financial Time Series
Federic Leroy and Christian Nottola, Banque de France (France)

Financial Data Modeling with Genetically Optimized Fuzzy Systems
Stephen Welstead, COLSA Corporation

Hybrid Neural Network for Stock Selection
Francis Wong, Neuro Intelligent Business Systems (Singapore) and David Lee, Sun Hung Kai Securities Pte Ltd.

Paper Session: **AI and Asset Allocation**
Chair: Barry Glasgow, Shearson Lehman Brothers

An Expert System for Personal Financial Asset Management Using Analogical, Qualitative and Causal Reasoning
F.Y. Villemin, CNAM-CEDRIC Centre d'Etude et De Recherche en Informatique du Conservatoire National de Art et Metiers (France)

Integration of Expert Systems and Mathematical Modeling for Portfolio Management
Gunter Schmidt, Universitat des Saarlandes (Germany)

POET: An Expert System Weighted by Time Criticality for Portfolio Enhancement
Bonnie Schnitta, South Fork Technological Consultants

STAR: A Rule-Based System for Asset Allocation
Stephen W. Brockbank, Moran Asset Management and Everett J. Rutan III, Dolcyna Research

Reception 6:00-8:00

Wednesday, April 21

Registration 8:00-9:00 · Exhibits: 10:00-6:00
Conference Chair's Welcome 9:00-9:15
Roy S. Freedman, Inductive Solutions, Inc.

Invited Speaker 9:15-10:30
Nai-Kuan Huang, Taiwan Stock Exchange
The Laboratory Market at the Taiwan Stock Exchange

Coffee Break 10:30-11:00

Technical Program 11:00-12:30

Paper Session: **Stock Market Prediction**
Chair: Warren Kaiser, American Stock Exchange

A Neural Network Model for Stock Market Prediction
Davide Chinetti, Catholic University (Italy); Francesco Gardin, Universita Statale di Milano (Italy); Cecilia Rossignoli, Catholic University (Italy)

Neural Nets: A Predictive Primer or...What I Wish I Knew Four Years Ago
James W. O'Sullivan, OBIL Neural Technology

Neural Networks in Investment Management: Multiple Uses
Dean Barr and Ganesh Mani, LBS Capital Management

Intelligent Stock Prediction System Using Dual Adaptive Structure Neural Networks
Ga-Shuh Jang and Feipei Lai, National Taiwan U. (Taiwan)

Paper Session: **Trading Workstation Support**
Chair: Yuval Lirov, Salomon Brothers

SIRIUS: SWIFT's Intelligent Resource for International User Support
L.J. Thomae, D. Mukherjee and R. Phelps, S.W.I.F.T.

Intelligent Broker Station of the Near Future: A Rule Based Expert System
Bernard Viau, Trois-Rivieres University (Canada)

Real-Time Object-Oriented Database Support for Intelligent Programmed Stock Trading
Victor Fay Wolfe and Kam Fui Lau, University of Rhode Island

Embedded Artificial Intelligence for Trading Floor Support
Yuval Lirov, Ohad Aloni, Boris Ginfeld, Alan McMichael, Salomon, Inc.

Lunch 12:30-1:30

Technical Program 1:30-3:00

Paper Session: **AI and Modern Portfolio Theory**
Chair: Ross Miller, GE Corporate R&D

Tactical Asset Allocation Using Fuzzy Logic and Mean Variance Optimization
Ypke Hiemstra, Vrije Universiteit Amsterdam (Netherlands)

Using Genetic Algorithms to Solve Financial Portfolio Problems Related to Optimal Allocation, Portfolio Insurance, and Performance Prediction
Michael L. Gargano, Pace University

Detecting Anomolous Risk Behaviors in Portfolio Management Strategies
Earl Cox, The Metus Systems Goup

A Comparison of Stochastic Search Heuristics for Portfolio Optimization
Rinaldo DiGiorgio and Roy Freedman, Inductive Solutions, Inc.

PANEL PRESENTATION
Report from the Trenches: Using AI from the Trader's Perspective

Chair: Karl Bergerson, Neural Trading Company
Dean Barr, LBS Capital Management
Vincent Butkiewicz, Carroll McEntee & McGinley
Ivy Smerken, Wall Street & Technology

Coffee Break 3:00-3:30

Technical Program 3:30-5:00

PANEL PRESENTATION
New Trends in Market Surveillance

Chair: Roy Freedman, Inductive Solutions
Participants from major Stock Exchanges
to be announced

Paper Session: Marketing and Business Strategies
Chair: Susan Garavaglia, Dun & Bradstreet Information Services

Using AI to Plan a Business Strategy
Phil Baugh and Alan Gillies, University of Central Lancashire; Piotr Jastrzebski, University of Salford; Peter Smith, University of Sunderland (UK)

Developing a Neural Net for Selection of Sales Promotion Instruments in Different Marketing Situations
J.C.H.W. Kluytmans, Erasmus Universiteit Rotterdam (Germany)

Direct Mail Response Modeling Using a Counterpropagation Neural Network
Susan Garavaglia, Dun & Bradstreet Information Services

A Method to Predict the Television Audience Based on Neural Networks
E. Parra, Radiotelevision Andaluza; F. Triguero and J.L. Perez de la Cruz, Dpto Lenguajes y Ciencias Computacion Univ. Malaga

Thursday, April 22

Registration 8:00-9:00 · Exhibits: 10:00-4:00
Conference Chair's Welcome 9:00-9:15
Roy S. Freedman, Inductive Solutions, Inc.

Invited Speaker 9:15-10:30
Guido Deboeck, The World Bank
Neural Networks, Genetic Algorithms, and Fuzzy Logic Approaches to the Design of Trading Systems
Coffee Break 10:30-11:00

Technical Program 11:00-12:30

Paper Session: **Fixed Income and Bond Ratings**
Chair: Ken Kleinberg, New Science Associates

Using Neural Networks to Forecast Returns: An Application to Italian Public Bond Futures
Andrea Beltratti, University of Torino; Emilio Barono, Instituto Mobiliare Italiano; Sergio Margarita, University of Torino (Italy)

A "Neural" Decision Support System for Predicting Currency Exchange Rules
Diethelm Wurtz and Claas de Groot, ETH-Honggerberg; Dieter Wenger and Sigrid Unseld, Swiss Bank Corporation (Switzerland)

Feed-Forward Neural Network Models as Universal Approximators: Some Methodological Considerations and Application to One-Period Ahead Forecasting
Pieter W. Otter and Arjen Jongma, Department of Econometrics (Netherlands)

Desperately Seeking Stability: Neural Networks with Insufficient Data
Susan Garavaglia, Dun & Bradstreet Information Services

Paper Session: **Quantitative Analysis**
Chair: Ernest Racz, Polytechnic University

Combined Approximate Reasoning in the M&A Domain
Saad Ayub, GTE Laboratories; Piero P. Bonissone, GE Research and Development Center

A Knowledge-Based System for Financial Statement Analysis
Gerald J. Stuzin, St. John's University

An Expert System for Credit Evaluation
Oscar Casillo, University of Tijuana and Patricia Melin, CETYS Tijuana

Using AI Technology for Technology Transfer
Patick J. Lyons, St. John's University
Lunch 12:30-1:30

Technical Program 1:30-3:00

PANEL PRESENTATION
Developing Automated Trading Systems: Challenges and Insights
Chair: Casey Klimasauskas, NeuralWare, Inc
Jim Hall, Deere & Company
Phil Erlanger, Fidelity
Dean Barr, LBS Capital Management
Guido Deboeck, World Bank
Andrew Colin, Citibank (London)

PANEL PRESENTATION
AI and High Tech Firms Wanting to Go Public–What The Exchanges are Looking For
Panelists to include members of the various Stock Exchanges

Coffee Break 3:00-3:30

Technical Program 3:30-5:00

PANEL PRESENTATION
Expert Systems Technology in Capital Planning

Chair: Lakita Conley, PSI International
Robert LaCroix, AMTRAK
Harry Regan, PSI International
Tredwell Davison, CSX Corporation
Brad Richards, PSI International

Paper Session: **Discovering Stock Selection Rules**
Chair: Gia-Shuh Jang, National Taiwan University

Trading Rules and Trading Cases in a Hybrid Architecture
David B. Skalak, University of Massachusetts

A Framework for Rule Base Refinement in a Stock Market Technical Analysis: Towards Discovering Anomaly from Granville's Law
Takahira Yamaguchi and Yoshiaki Tachibana, Shizuoka University

Experiments with Optimal Stock Screens
Everett J. Rutan, III, Dolcyna Research

A Case-Based Reasoning Paradigm for Mining Financial Databases
Peter N. Johnson, Cognitive Systems, Inc.

EXHIBITORS (Partial List)

AI Expert
Cambridge University Press
Complex Systems
Crotona
DATANAMICS
DEC
Fuziware
IAKE
IBM
Inductive Solutions
Intellisys
Knowledgeware
MAS PAR
NeuralWare
Neuro Intelligence
Pergamon Press
Synetics
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Kar Yan Tam
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Milton White
DATANAMICS

Takahira Yamaguchi
Shizuoka U.

Lois Zarembo
New York Stock Exchange

For more information on Program content, registration, exhibits or tutorials, please contact Paula Ungureanu, IAKE, 973D Russell Avenue, Gaithersburg, MD 20879
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