

**Somnath Mukhopadhyay**  
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## **1. EDUCATION**

Ph.D. (1992)      Arizona State University – Phoenix, Arizona  
Major: Decision and Information Systems  
Dissertation: Pattern Classification and Construction of Neural Net  
Classifiers Using Linear Programming

M.S. (1988)      Arizona State University – Phoenix, Arizona  
Major: Decision and Information Systems

B.E. (1979)      First Class Honors, Jadavpur University- Calcutta, India  
Major: Mechanical Engineering

## **2. PROFESSIONAL EXPERIENCE**

### **TEACHING**

- 2008 September – Present      Associate Professor  
Marketing and Management Department and Information and Decision Sciences  
Department
- 2002 September - 2008 August      Assistant Professor  
Information and Decision Sciences Department (IDS)  
  
Taught graduate and undergraduate courses at the College of Business  
Administration, The University of Texas at El Paso.

*Courses taught:* Graduate and Undergraduate Management Sciences, Operations and Supply Chain Management, and Business Statistics (International Business Ph.D. students)

## **INDUSTRY**

- (1999 – 2002) Project Manager, Network Development, Delta Air Lines.
- (1992 – 1998) Senior Consultant, Yield Management, SABRE Technology Solutions and American Airlines Decision Technology.
- (1990) Software Engineer, Software Quality Department, AT&T and GTE Communications
- (1986) Consulting Engineer, DCPL, India
- (1980 – 1985) Design Engineer, ACC-BABCOCK LTD (Parent: Babcock and Wilcox, UK)

## **3. FELLOWSHIPS AND AWARDS**

- 2014 Marketing and Management Department OSCM Best Research Paper Award
- 2011, 2012 listing in Marquis Who's Who
- 2010 Excellence in College of Business Graduate Instruction Award
- 2010 Conference wide Best Paper Award, International Conference on Modeling and Applied Simulation, 2010, Morocco, MAS 2010 titled "*Inventory Control Performance of Various Forecasting Methods When Demand is Lumpy*"
- 2007 Best College of Business Research Article Award, UTEP
- Research and Sponsored Programs Outstanding Performance Award, UTEP
- 1991, Visiting Research Assistant, Parallel Distributed Processing Group, Stanford University
- Research Assistant, College of Business, Arizona State University
- Teaching Assistant, College of Business, Arizona State University
- First Class Honor Role in Bachelor of Mechanical Engineering
- Indian national scholarship based on school leaving exams

#### 4. RESEARCH PUBLICATIONS

##### Journal Articles (published / expected submission)

###### *Published/Accepted*

- Nargundkar, S., Samaddar, S. and Mukhopadhyay, S. “A Guided problem-based learning (PBL): Impact on critical thinking.” *Decision Sciences Journal of Innovative Education*, 2014, Vol. 12, No. 2, 91-108.
- Fullerton, T. and Mukhopadhyay, S. “Border region bridge and air transport predictability”, *Journal of Business and Economics*, 2013, Vol 4, 1089-1104
- Roy A., Mackin, P.D. and Mukhopadhyay, S. “Methods for pattern selection, class-specific feature selection and classification for automated learning”, *Neural Networks*, Vol. 41, May 2013, 113–129.
- Torres, A.J.R., Ablanedo, R.J.H. and Mukhopadhyay, S. “Supplier allocation model for textile reallocation operations” *International Journal of Logistics Systems and Management*, Vol. 15, No. 1, 108-124.
- Mukhopadhyay, S., Solis, A.O., and Gutierrez, R.S., “The Accuracy of non-traditional versus traditional methods of forecasting lumpy demand,” *Journal of Forecasting*, Vol. 31, No. 8 (2012), 721-735.
- Mandal, P., Mukhopadhyay, S., Bagchi, K., Gunasekaran, P. ”The impact of organizational study and culture, people, and, technology management on organizational practice and performance: an Empirical analysis, *International Journal of Information Systems and Change Management*, 2012, Vol 6., #2

- Joseph, J. and Mukhopadhyay, S. “A Bi-national examination of gender and IT adoption.” *International Journal of Society Systems Sciences*, Vol 2, #3, pp. 255-268, 2010.
- Mukhopadhyay, S and Wei, Z. “Predicting corporate performance in China’s privatized firms using linear models and neural networks.” *International Journal of Decision Sciences*, pp. 55-77, January-June 2010.
- Mukhopadhyay, S., Bagchi, K., and Udo, G. “Modeling mobile technology growth using diffusion models and neural networks.” *International Journal of Electronic Business*, Vol. 7, #6, 2009.
- Brouthers, L., Mukhopadhyay, S., Wilkinson, T.J., and Brouthers, K. D. “International market selection and MNE performance.” *Journal of World Business*, 44, #3, 2009.
- Mahmood, M. A., Mukhopadhyay, S. and Joseph, J. “Consumer purchasing behaviors and e-Commerce adoption factors.” *International Journal of Electronic Business*, Vol. 7, #4, 2009.
- Mukhopadhyay, S. Samaddar, and Nargundkar, S. “Predicting electronic commerce growth: An integration of diffusion and neural network models.” *Journal of Electronic Commerce Research*, 9, #4, 2008
- Mukhopadhyay, S. “Predicting the diffusion of innovative products using neural networks.” *International Journal of Management and Decision Making*, 9, #4, 2008.
- Mukhopadhyay, S., Mahmood, M. A., and Joseph, J.L. “Measuring internet commerce success: What factors are important?” *Journal of Internet Commerce*, 7, #1, 2008.
- Gutierrez, R. S., Solis, A. O., and Mukhopadhyay, S. “Lumpy demand forecasting using neural networks.” *International Journal of Production Economics*, 111, 409-420, 2008.

- Mukhopadhyay, S., Samaddar, S., and Colville, G. “Improving revenue management decision making for airlines by evaluating analyst adjusted passenger demand.” *Decision Sciences*, 38, #2, 2007, 307-325.
- Mukhopadhyay, S. “Predicting Global Diffusion of the Internet: An alternative to diffusion models.” *Communications of the Association for Information Systems*, January 2006.
- Bagchi, K. and Mukhopadhyay, S. “Predicting global internet growth using augmented diffusion, fuzzy regression and neural network models”, *International Journal of Information Technology and Decision Making*, 5, #1, March 2006, 155-171.
- Samaddar, S., Mukhopadhyay, S., and Nargundkar, S. “Understanding the growth of E-commerce: Diffusion modes and a multilayered perception neural network Approach”, *The International Journal of Applied Management & Technology*, Spring Issue 2004, 114-125.
- Roy, A. and Mukhopadhyay, S. “Iterative generation of higher-order nets in polynomial time using linear programming.” *IEEE Transactions on Neural Networks*, 8, #2, March 1997, 402- 412.
- Mukhopadhyay, S., Roy, A., and Kim, L.S. “A polynomial time algorithm for generating neural networks for pattern classification: Its stability properties and some test results.” *Neural Computation*, 5, 1993, 317-330.
- Roy, A., Kim, L.S., and Mukhopadhyay, S. “A polynomial time algorithm for the construction and training of a class of multilayer perceptrons.” *Neural Network*, 6, 1993, 535-545.

- Roy, A. and Mukhopadhyay, S. “Pattern classification using linear programming.” *INFORMS Journal on Computing*, 3, #1, Winter Issue 1991.

### **Proceedings Articles**

- Mukhopadhyay, S., Samaddar, S. and Nargundkar, S. “A Framework of revenue opportunity in hotel management – An optimal room allocation approach.” *Proceedings of the 45th Annual Meeting of the Decision Sciences Institute*, Tampa, Florida, U.S.A., November 2014
- Solis, A. O., Longo, F., Nicoletti, L., Brasacchio, V. and Somnath Mukhopadhyay, S. “Approximate and exact corrections of the bias in Croston’s methods when forecasting lumpy demand: Empirical evaluation.” *Modeling and Simulation (MAS) Conference*, Bordeaux, France, September 2014
- Mukhopadhyay, S., Samaddar, S. and Nargundkar, S. “A Framework of revenue opportunity in hotel management – An optimal room allocation approach.” *Proceedings of the 45th Annual Meeting of the Decision Sciences Institute*, Tampa, Florida, U.S.A., November 2014
- Nargundkar, S., Samaddar, S. and Mukhopadhyay, S. “The use of guided social media to enable critical thinking.” *Proceedings of the 44th Annual Meeting of the Decision Sciences Institute*, Baltimore, Maryland, U.S.A., November 2013
- Bagchi, K. and Mukhopadhyay, S. “The determinants of quality of software development projects.” *Proceedings of the 44th Annual Meeting of the Decision Sciences Institute*, Baltimore, maryland, U.S.A., November 2013
- Nargundkar, S., Samaddar, S. and Mukhopadhyay, S. “A guided problem-based learning (PBL) Approach using a reversed textbook: An application to a core business analysis

course.” *Proceedings of the 44th Annual Meeting of the Decision Sciences Institute*, Baltimore, Maryland, U.S.A., November 2013

- Solis, A.O., Nicoletti, L., Mukhopadhyay, S., Agosteo, L., Delfino, A., and Sartiano, M., “Intermittent demand forecasting and stock control: An empirical study.” *Proceedings of the 11<sup>th</sup> International Conference on Modeling & Applied Simulation*, Vienna, Austria, September 2012, 367-374.
- Bagchi, K and Mukhopadhyay, S. “Does social communicability mediate the role of trust in mobile adoption: An individual level multi-nation exploration study.” Springer India 2012
- Gonzalez, M., Mukhopadhyay, S. and, Gemoets, L. “BI factors for competitive advantage” *Proceedings of the 41st Annual Meeting of the Decision Sciences Institute*, November 2011, Boston, pp. 4261-4270.
- Parra, F.; Gemoets, L.; Mukhopadhyay, S 2011. On a Firm’s Core Competency through Information Systems: a Meta-Analysis. *The 11th IAMB Winter Conference*, Nov. 7-9, 2011. San Francisco, CA
- Bagchi, K., Tang, Z., and, Mukhopadhyay, S., “What differentiates attitude towards technology among technology-averse and technology-oriented people?” *Proceedings of the 40th Annual Meeting of the Decision Sciences Institute*, November 2010, San Diego, pp. 2571-2576.
- Solis, A.O., Mukhopadhyay, S., and, Gutierrez, R.S. "Inventory control performance of the various forecasting methods when demand is lumpy." *International Conference on Modeling and Applied Simulation*, 2010, Morocco, MAS 2010.
- Mukhopadhyay, S., Solis, A.O., and Gutierrez, R.S. "Accuracy of lumpy demand forecasting methods and their impact on inventory levels." *Proceedings of the 39th*

*Annual Meeting of the Decision Sciences Institute*, New Orleans, Louisiana, U.S.A., November 2009, 2251-2256.

- Mukhopadhyay, S., Solis, A.O., and Gutierrez, R.S., "Lumpy demand forecasting techniques: A comparative Study." *Proceedings of the Decision Sciences Institute International Conference*, Nancy, France, June 2009, 1099-1113.
- Choden, K., Mahmood, M. A., Mukhopadhyay, S., Luciano, E. "Organizational preparedness for information security breaches: An empirical investigation." *Decision Science Institute Proceedings*, New Orleans, November 2009.
- Mukhopadhyay, S., Solis, A.O. and Gutierrez, R.S., "A comparison of four methods for forecasting lumpy demand." *Decision Science Institute Proceedings*, Baltimore, November 2008.
- Mukhopadhyay, S. and Solis, A. "On the effectiveness of a proposed linear programming masking algorithm." *International Conference on Quantitative Methods, Operations and Information Technology*, Hyderabad, India, October 2008.
- Mukhopadhyay, S. and Solis, A. "A Linear Programming Masking Algorithm for Pattern Classification." *Western Decision Sciences Proceedings*, San Diego, March 2008.
- Mukhopadhyay, S. "Generalized value models of internet commerce for three segmented customer groups at a United States of America (USA) border city near Mexico." *ISDSI conference at Ghaziabad*, India, January 2008.
- Samaddar, S., Bagchi, K, and Mukhopadhyay, S. "Trans-national service value creation: Influence of national culture." *GITMA*, June 2008.



- Mukhopadhyay, S. “Evaluation of brain-like supervised learning in linear programming pattern classifiers.” *Decision Science Institute Proceedings*, Phoenix, November 2007.
- Mukhopadhyay, S., Gutierrez, R.S., and Solis, A.O. “Analysis and forecasting of lumpy demand: Alternative approaches.” *Decision Science Institute Proceedings*, San Antonio, November 2006.
- Mukhopadhyay, S., Bagchi, K, and Udo, G. “Modeling mobile technology growth using diffusion models and neural networks.” *Decision Science Institute Proceedings*, San Antonio, November 2006.
- Mukhopadhyay, S., Mahmood, M. A., and Joseph, J. “Measuring internet-commerce success: What factors are important?” *Decision Science Institute Proceedings*, San Antonio, November 2006.
- Mahmood, M. A., Joseph, J., and Mukhopadhyay, S. “Internet commerce success measures: A SEM-based empirical investigation.” *AMCIS Proceedings*, August 2006.
- Mukhopadhyay, S. “Examining predictive validity of a new set of global internet adoption models including neural networks.” *7<sup>th</sup> Seventh International Conference on Operations and Quantitative Management (ICOQM-VII)*, August 2006.
- Solis, A., Mukhopadhyay, S., and Gutierrez, R. S. “Factors indicative of relative performance of methods for lumpy demand forecasting.” *Western DSI Proceedings*, April 2006.
- Bagchi, K. and Mukhopadhyay, S. “How software piracy rates vary in different nations: some empirical results.” *Decision Science Institute Proceedings*, San Francisco, November 2005.

- Mukhopadhyay, S. “Predicting global diffusion of the Internet: Traditional and connectionist models.” *Decision Science Institute International Proceedings*, Barcelona, Spain, July 2005.
- Brouthers, L. E., Brouthers, K. E., Mukhopadhyay, S., and Wilkinson, T. J. “Dunning’s framework, international market selection, and firm performance.” *Academy of International Business*, Quebec City, Canada, July 2005.
- Mukhopadhyay, S. Samaddar, and Nargundkar, S., “Measuring the growth of e-commerce: Diffusion models and a multi-layered perceptron neural network approach.” *Decision Science Institute Proceedings*, Boston, November 2004.
- Bagchi, K. and Mukhopadhyay, S. “Forecasting global internet growth using fuzzy regression, genetic algorithm and neural network.” *IEEE Systems, Man, and Cybernetics Society Proceedings*, Las Vegas, November, 2004.
- Bagchi, K. and Mukhopadhyay, S. “Global internet adoption: What factors are responsible?” *Decision Sciences Institute Proceedings*, Washington D.C., 2003.
- Samaddar, S., Nargundkar, S., and Mukhopadhyay, S. “The growth of E-Commerce: An empirical study of the diffusion of internet host sites.” *Decision Sciences Institute Proceedings*, San Diego, 2002.
- Mukhopadhyay, S. and Wood, D. “Passenger Demand Forecasting with Neural Networks.” *INFORMS*, Phoenix, November, 1993.
- Mukhopadhyay, S. “LP classifier to solve a jigsaw puzzle problem.” *INFORMS*, Orlando, April 1992.

- Roy, A. and Mukhopadhyay, S. “Polynomial time algorithm for generating neural networks for classification problems.” *Proceedings of the International Joint Conference on Neural Networks (IJCNN)*, Baltimore, 1992.
- Mukhopadhyay, S. “Pattern Classification Using Linear Programming.” *Decision Sciences Institute Proceedings*, Miami, 1991.
- Mukhopadhyay, S. and Roy, A. “A clustering algorithm to eliminate outliers in supervised learning.” *INFORMS*, Philadelphia, October, 1990.

### ***Research Submission in Progress with Target Date***

- Mukhopadhyay, S. and Solis, A. O. “A simple linear programming pattern classification algorithm: Application to health databases.” – target journal and expected submission date: *Data and Knowledge Engineering* October 31, 2014
- Solis, A. O., Francesco, L., and Mukhopadhyay, S. Forecasting of Intermittent or lumpy demand: Statistical accuracy and inventory control performance. *Journal to be decided* October 15, 2014
- Mukhopadhyay, S. and Samaddar, S. “Traditional revenue management in controlling hotel room inventories.” target journal and expected submission date: *Manufacturing and Service Operations Management* October 15, 2014
- Bagchi, K and Mukhopadhyay, S. “Does culture play a role in online shopping activities? A cross-cultural longitudinal empirical investigation.” target journal and expected submission date: *Journal of Electronic Commerce Research* September 31, 2014
- Gonzales, M. L., Mukhopadhyay, S., Bagchi, K. and Gemoets, L. “Business Intelligence-enabled competitive success: Important factors and a structural model. *MISQ Executive* September 31, 2014

## **Book Chapter**

- Mukhopadhyay, S. and Bagchi, K. “Quantitative modeling in introducing and managing new information in global business operations.” *Global Information Society: Operating Information Systems in a Dynamic Global Business Environment*, Lan Yi-Chen ed., Idea Group publishing, Hershey, PA, USA, 2005.

## **5. COURSES TAUGHT**

### *The University of Texas at El Paso*

IBUS 6300 *Introduction to Quantitative Methods and Statistics (International Business PhD)*

This course is an introduction to the statistical techniques used for research in business disciplines. It covers basic theories of statistics and its use for applied business research.

IBUS 6302 *Multivariate Statistics (International Business PhD)*

This course covers multivariate statistical techniques for applied business research.

IBUS 6306 *Applied regression Analysis (International Business PhD)*

This course is an introduction to the applied regression analysis for solving international business problems.

POM 3322 *Advanced Production and Operations Management (Undergraduate)*

The course introduces the concepts of operations management such as goods, services, value chain, performance measurement, and operations strategy as a quick review. It covers the advanced topics on designing, implementing, and managing operations management. The topics include just-in-time (JIT) systems, flexible manufacturing systems (FMS), computer integrated manufacturing (CIM) and inventory management.

POM 5308 *Concepts of Production Management (Graduate)*

This course covers the topics related to the management of operations. The course introduces students to a variety of tools and techniques used by operations managers for effective decision making.

QMB 3301 *Quantitative Methods in Business (Undergraduate)*

The course teaches how to solve many real world business problems using quantitative methods. The methods include linear programming, network analysis, transportation linear programming, decision analysis and forecasting.

QMB 5311 *Quantitative Methods in Business*

(For regular, accelerated, and, executive MBAs)

This course is an introduction to the statistical techniques used for managerial decision making. It covers the basic theory of statistics and its use for solving business problems.

## 6. SERVICE

### University, College, and, Department Committee

- 2014                      Designed a PHD seminar course – *International Operations and Supply Chain Management* - with other OSCM of Marketing and Management department colleagues
- 2014                      Chaired **merit committee** of Marketing and Management department
- 2009 – Present              College of business administration **MBA policy committee**
- 2013                      Chaired **promotion and tenure committee** of two Assistant Professors of Marketing and Management department
- 2013                      Served on **University Faculty Senate Student Grievance Committee** (Until August)
- 2012                      Served on **University Faculty Senate Student Grievance Committee**
- 2012                      Served on various IDS department committee - **Charitable Campaign/Gifts Coordinates, Learning Assessment Coordinators, Undergraduate and graduate Curriculum Committee, OSCM Program Committee, Department Advisory Board Committee**
- 2003 – 2012              Served as the quantitative method courses coordinator for the IDS department
- 2011                      Served on **University Faculty Senate Student Grievance Committee**
- 2011                      Served on various IDS department committee - **Charitable Campaign/Gifts Coordinates, Learning Assessment Coordinators, Undergraduate Curriculum Committee, OSCM Program Committee, Department Board Committee**
- 2010                      Served on **Faculty Senate’s Faculty Welfare Committee** (Until August). Served also as a **Faculty Senate Representative** elected by COBA.
- 2010                      Served on various IDS department committee - **Charitable Campaign/Gifts Coordinates, Learning Assessment Coordinators, Undergraduate Curriculum Committee, OSCM Program Committee, Department Board Committee**

- 2009 Served on **University Faculty Senate's Faculty Welfare Committee** (Until August). Served also as a **Faculty Senate Representative** elected by COBA.
- 2009 Served on various IDS department committee - **Charitable Campaign/Gifts Coordinates, Learning Assessment Coordinators, Undergraduate Curriculum Committee, OSCM Program Committee, Department Board Committee**
- 2007 - 2009 UTEP representative as a board member of **National Association of Purchasing Management (NAPM)**. Arranged for two scholarships every year from NAPM for UTEP *operations and supply chain management* students
- 2008 Served on **University Faculty Senate's Faculty Welfare Committee** (From August). Served also as a **Faculty Senate Representative** elected by COBA
- 2008 Served on various IDS department committee - **Charitable Campaign/Gifts Coordinates, Learning Assessment Coordinators, Undergraduate Curriculum Committee, OSCM Program Committee, Department Board Committee**
- 2008 Actively participated in IDS department AACSB accreditation process
- 2008 Actively participated in IDS department business consulting effort
- 2008 Served as Faculty Marshal in 2008 at UTEP winter graduation ceremony
- 2002 – 2007 Served on various IDS department committees - **Charitable Campaign/Gifts Coordinates, Learning Assessment Coordinators, Undergraduate Curriculum Committee, OSCM Program Committee, Department Board Committee**

### Academic/Professional

- 2003 – Present Reviewer of *European Journal of Operational Research*
- 2005 – Present Reviewer of *Decision Sciences Journal*
- 2009 – Present Reviewer of *International Journal of Society and Systems Science*

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|----------------|---|
| 2003 – Present | Reviewer of <i>Decision Sciences Institute Proceedings*</i> |
| 2007           | Reviewer of <i>IMA Journal of Management Mathematics</i>    |
| 2006           | Reviewer of <b>IEEE TEM</b>                                 |
| 2004           | Reviewer of <i>Journal of Economics</i>                     |
| 2004           | Reviewer of <i>IRMA Conference, 2005</i>                    |

\* Served as Chair of session for DSI and International DSI proceedings

### **Presentation to El Paso Software Association**

Addressed *The El Paso del Norte Software Association* at its monthly meeting on Wednesday, August 27<sup>th</sup> 2003 at the Greater El Paso Chamber of Commerce, Center Plaza on the topic – Business data solution using clustering, linear programming, and, Neural Net.

### **Doctoral Dissertation and Master’s Thesis Committees**

Michael, Gonzales. 2007. Competitive advantage factors and diffusion of business intelligence and data warehousing. (**Chair of the first Information and Decision Sciences department PhD dissertation thesis**) *The Department of Information and Decision Sciences of the University of Texas at El Paso*

SeungEui Ryu. (Work in Progress) Three essays on social and political structure. (PhD dissertation thesis committee member) *The Department of Accounting and Information Systems of the University of Texas at El Paso*

Gricel, Celene Guerrero Gomez. 2008. Lumpy demand characterization and forecasting performance using self-adaptive forecasting models and Kalman filter. (Master’s thesis committee member) *Industrial Engineering Department of the University of Texas at El Paso*



Reddy Kothi, Abhilash. 2007. The impact of replenishment parameters and information sharing on bullwhip effect for short life cycle products. (Master's thesis committee member) *Industrial Engineering Department of the University of Texas at El Paso*

### **Journal editorial membership**

2009 – Present Associate Editor (2009 to present) of International Journal of Decision Sciences

2008 – Present Editorial Board Member (2008 to present) of International Journal of Society Systems Science

### **Professional/Academic training and membership**

- Completed the Faculty development course “Global Supply Chain Management” from University of South Carolina, Moore School of Business on June 28<sup>th</sup>, 2003
- Membership of Decision Sciences Institute (DSI) membership (2002 – present), Institute of Supply Management (ISM) membership (2004 – present)

## **7. RESEARCH GRANT AWARDS**

### **University Research Grant**

2002 Business Data Mining Using Clustering, Linear Programming, and Neural Networks (2002) – S. Mukhopadhyay (PI)

### **College of Business Summer Research Grant**

2011 Lumpy demand forecasts for optimal inventory control

2012 Inventory control method for forecasting of lumpy demand

2013 Linear programming (LP) classifier for medical diagnosis

2014 Hotel Revenue Management Using Expected Marginal Seat Revenue Algorithm

- 2010 Inventory control, service level and forecast accuracy
- 2009 Lumpy Demand Forecasting Accuracy and Simulation of Stock Control Performance using neural network
- 2008 Lumpy Demand Forecasting Accuracy and Stock Control Performance
- 2007 A Linear Programming Masking Algorithm for Pattern classification
- 2006 A Radial Basis Function Linear Programming Classifier for Discriminant Analysis
- 2005 A Study of Lumpy Demand Characterization and Forecast Performance
- 2005 Separation of Patterns in Data by Hyper-planes and Nonlinear Decision Boundaries in Brain-like Supervised Learning
- 2004 Mining International Business Data Using Brain-like Learning Approach