

## CURRICULUM VITAE

### Mirsad Hadzikadic

College of Computing and Informatics  
Department of Software and Information Systems  
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#### 1 Education

- MPA (Government), Harvard University, 2009
- Ph.D. (Computer Science), Southern Methodist University, Dallas, Texas, 1987
- MS (Computer Science), University of Banja Luka, Bosnia and Herzegovina, 1981
- BS (Computer Science), University of Banja Luka, Bosnia and Herzegovina, 1977

#### 2 Professional Experience

##### University of North Carolina at Charlotte (1987 - Present)

- Professor, Department of Software and Information Systems, UNC Charlotte (2011 – Present)
- Professor, School of Data Science, joint appointment (2022 – Present)
- Founding Director, Complex Systems Institute (2009 – Present)
- Founding Executive Director of Data Science Initiative (2015 – 2019)
- Faculty Director, Health Informatics Professional Science Master's (2012 – 2015)
- Director, Data Science and Business Analytics Professional Science Master's (2013 – 2016)
- Founding Dean, College of Computing and Informatics (2000 – 2008)
- Acting Director, School of Information Technology (2000)
- Associate Director, School of Information Technology (1999)
- Chair, Computer Science Department (1999-2000)
- Associate Professor of Computer Science (1993 – 2011)
- Assistant Professor of Computer Science (1987 – 1993)

##### 411fit, Inc. (2010 - 2014)

- Co-founder

##### MindValve Corp. (2000 - 2002)

- Co-founder and Chief Technology Officer

**Deloitte & Touche Consulting Group (1998)**

- Managed strategic information systems planning engagements for healthcare institutions
- Initiated/supported development of data mining initiative

**Carolinas HealthCare System (1992 - 1998)**

- Led the Carolinas HealthCare System (CHS) Technology Team responsible for the technology component of the Enterprise-wide Core Systems Replacement Project
- Established Orthopedic Informatics Research and Medical Informatics groups

**Medical Electronics, Inc. (1989 - 1990)**

- Vice President, Advanced Technology Division

**Rudi Cajavec, Inc. (1977 – 1984)**

- Project Leader, Developer, Programmer, and Researcher

**3 Leadership**

**Teaching**

- Co-developed a course on eScience
- Proposed and led the development of the Financial Services Informatics program
- Introduced the Complex Advanced Systems course sequence at the graduate level
- Introduced the Medical Informatics course at the graduate level
- Co-developed a new track in Information Systems for the BA program
- Introduced graduate courses in Network Science and Systems Dynamics
- Participated in the development of the Professional Science Masters degree programs in Health Informatics and Data Science and Business Analytics

**Research**

- Promoted interdisciplinary research on campus through Cognitive Science Academy and Complex Systems Institute
- Secured the Bank of America endowed chair that led to the establishment of the Charlotte Visualization Center
- Worked with Chancellor Woodward to establish a program in Bioinformatics, which resulted in a proposal to the State legislature for the funding of the \$35M Bioinformatics building
- Promoted the importance of diversity in the College and suggesting the establishment of the Diversity in Information Technology Institute as a research center

**Service**

- Provided the leadership for establishing the College of Computing and Informatics, the Department of Software and Information Systems (with Bill Chu), the Department of Bioinformatics and Genomics (with Larry Mays), the Complex Systems Institute, eBusiness Technology Institute, Software Solutions Lab, Cognitive Science Academy, Medical

Informatics at Carolina Medical Center (CMC), and Orthopaedic Informatics Research at CMC

- Participated in planning for the new Science and Technology building, a \$34M facility
- Initiated the Five Venture program, a competition for the best business plan
- Helped the city (Charlotte Chamber of Commerce IT Council) and the state (Vision 2030, trade delegation to Europe, task forces on collaboratories, high-performance computing, and work-force improvement) define and execute their IT initiatives
- Established and edited the Journal on Policy and Complex Systems
- Contributed to the establishment of the Data Science Initiative

#### Awards

- North Carolina Technology Association award for lifetime achievement, 2008
- Dr. Richard Neel (Blue Diamond) Award for lifetime achievement in Information Technology, 2005

## 4 Selected Publications

### 4.1 Peer Reviewed Journal Publications

- Louai, Magbol, Ravi, Karthik, Hadzikadic, Mirsad, and Windett, Jason. 2020. "Automated Data Extraction to Evaluate Courts of Last Resort in the American States" *Journal of Policy and Complex Systems* 6, 2
- Sanchez-Segura, Maria-Isabel, Dugarte-Pena, German-Lenin, Medina-Dominguez, Fuensanta, and Hadzikadic, Mirsad. 2018. "Team formation using a systems thinking approach" *Journal on Systems Research and Behavioral Science* 35, 4 :369-385.
- Tokmic, Farah, Hadzikadic, Mirsad, Cook, James R., and Tcheremissine, Oleg. 2018. "Development of a behavioral health stigma measure and application of machine learning for classification" *Innovations in Clinical Neuroscience* 15:5-6.
- Dhou. K., Hadzikadic, M., and Faust, M., "Typeface Size and Weight and Word Location Influence on Relative Size Judgments in Tag Clouds," *Journal of Visual Languages & Computing*, vol. 44, pp. 97-105, February 2018.
- Talele, S., Traylor, C., Arpan, L., Curley, C., Chen, C., Day, J., Feiock, R., Hadzikadic, M., Ingman, S., Karaguzel, O.T., Lam, K.P., Menassa, C., Pevnitskaya, S., Spiegelhalter, T., Tolone, W.J., Yan, W., Yeatts, D., Zhu, Y., and Tao, Y., 2017, "Energy Modeling and Data Structure Framework for Sustainable Human-Building Ecosystems (SHBE)-A Review," in *Frontiers in Energy*, 2018.
- Arapovic, A., Depken, C., and Hadzikadic, M., "Corruption in Transition Economies: Cause or Effect?" in *Zagreb International Review of Economics & Business*, vol. 20, No, 1, pp. 113-123, 2017.
- Bacaksizlar, N. G. and Hadzikadic, M., "Modeling Social Media Effect on Civil Revolutions," published in the special CAPS 2016 issue of the *Journal of Policy and Complex Systems*, vol. 3, No. 2, 2017.

- Von Briesen, E., Bacaksizlar, N. G., and Hadzikadic, M, “Modeling Genocide at the System and Agent Levels,” published in the special CAPS 2016 issue of the Journal of Policy and Complex Systems, vol. 3, No. 2, 2017.
- Su, Zheyuan and Hadzikadic, M., “Enhancing Stock Investment Returns with Learning Aggressiveness and Trust Metrics,” in the Journal of Policy and Complex Systems, vol. 2, No. 2, 2015.
- Carmichael, T. and Hadzikadic, M., “Predator-Prey Dynamics and the Red Queen Hypothesis: Putting Limits on the Evolutionary Arms Race,” in the Journal of Policy and Complex Systems, vol. 2, No. 1, 2015.
- Carmichael, T and Hadzikadic, M., "Emergent Features in a General Food Web Simulation: Lotka-Volterra, Gause's Law, and the Paradox of Enrichment," Advances in Complex Systems, 2013.
- Yue Dong, Nicolas W. Chbat, Ashish Gupta, Mirsad Hadzikadic, and Ognjen Gajic, “Systems Modeling and Simulation Applications for Critical Care Medicine,” the Annals of Intensive Care Journal, 2:18, 2012.
- Hadzikadic, M., Carmichael, T., and Curtin, C., “Complex Adaptive Systems and Game Theory: An Unlikely Union,” Complexity Journal, November, 2010.
- Li, M. Man, Pickering, B.W., Smith, V.D., Hadzikadic, M., Gajic, O., Herasevich, V. “Medical informatics: an essential tool for health sciences research in acute care,” Bosnian Journal of Basic Medical Sciences, October 2009.
- Khouja, M., Hadzikadic, M., & Zaffar, M., “An agent-based modeling approach for determining optimal price-rebate schemes,” Simulation Modeling Practice and Theory Journal, vol. 16, No. 1, pp. 111-126, 2008.
- Khouja, M., Hadzikadic, M., Rajagopalan, H., and Tsay, L., “Applications of Agent-Based Modeling to Pricing of Reproducible Information Goods,” Decision Support Systems Journal, vol. 44, issue 3, pages 725-739, February 2008.
- Hadzikadic, M., Qin, Z., and Sun, M. “Network Classification,” Journal of Experimental & Theoretical Artificial Intelligence 17, Special Issue on Knowledge Discovery, 35-44 (2005).
- Hanley, E.N., Kane, S.M., Bohren, B.F., Dorbandt, A., and Hadzikadic, M. "Healthy Life-styles and Low Back Pain," Journal of Neuro-Orthopaedics 20, 81-87, 1997
- Hadzikadic, M., Bohren, B.F., "Learning to Predict: INC2.5," IEEE Transactions on Knowledge and Data Engineering. Vol. 9, No. 1, 168-173, 1997.
- Hadzikadic, M., Bohren, B., Hakenewerth, A., Norton, J., Mehta, B., Andrews, C. “Concept Formation vs. Logistic Regression: Predicting Death in Trauma Patients,” Artificial Intelligence in Medicine Journal 8, 493-504, 1996.
- Bohren, B., Hadzikadic, M., Hanley, E. "Extracting Knowledge from Large Medical Databases: An Automated Approach," Journal on Computers and Biomedical Research, vol. 28, 191-210, 1995.

Also published in “Yearbook of Medical Informatics: Integration of Information for Patient Care,” (Eds. J. H. van Bommel and A. T. McCray), pp. 381-400, Schattauer, 1996.

- Hadzikadic, Mirsad. “Automated Design of Diagnostic Systems,” *Artificial Intelligence in Medicine Journal*, vol. 4. no. 5, pp. 329-342, October 1992.

#### 4.2 Peer Reviewed Conference Publications

- Dhou, Khaldoun, Kosara, Robert, Hadzikadic, Mirsad, and Faust, Mark. (2020). "How do Decorations and Word Appearance Influence the Relative Size Perception in Viewers of Tag Clouds?." Presented at the 17th International Conference on Modeling, Simulation & Visualization Methods, Las Vegas, US
- Tavakoli, M., Ru, B., Xie, T., Hadzikadic, M., Wu, Q. J., and Ge, Y. “Dose Prediction for Prostate Radiation Treatment Feasibility of a Distance-Based Deep Learning. Presented at the IEEE International Conference on Bioinformatics and Biomedicine, San Diego, November 18-21, 2019
- Von Briesen, E., Canavello, A., Shaikh, S., Cox, J., and Hadzikadic, M. “Modeling Genocide: An Agent-Based Model of Bystander Motivation and Societal Restraints.” Presented at the Computational Social Science Conference organized by the Computational Social Science Society of the Americas, Santa Fe, October 24-27, 2019.
- Smythwood, K., Dougall, S., Hadzikadic, M. Search-Efficacy of Modern Icons Varying in Appeal and Visual Complexity. 8th International Conference, Design, User Experience, and Usability, DUXU 2019, Held as Part of the 21st HCI International Conference, HCII 2019 Orlando, FL, USA, July 26–31, 2019
- Bacaksizlar, N., Shaikh, S., and Hadzikadic, M. “Understanding Protests Through Simulations of Anger Contagion in Social Media,” Presented at the 16th International Conference on Web Based Communities and Social Media (WBC 2019), Porto, Portugal, July 17-19
- Nawaz, M. and Hadzikadic, M. (2018). "Changing the dynamics of training by predictive modeling." Presented at 2018 15th International Conference on Smart Cities: Improving Quality of Life Using ICT & IoT (HONET-ICT)
- Seyeditabari, N., Seyeditabari, A., Peddi, T., Hadzikadic, M., and Zadrozny, W. (2018). "A Comparison of Neural Network Methods for Accurate Sentiment Analysis of Stock Market Tweets." Presented at LLNCS Volume 11328 (MIDAS 2018 Proceedings).
- Abdullah, M., Hadzikadic, M., and Shaikh, S. (2018). "SEDAT: Sentiment and Emotion Detection in Arabic Text using CNN-LSTM Deep Learning." Presented at IEEE 17th International Conference on Machine Learning and Applications ICMLA 2018
- Smythwood, M., Hadzikadic, M., and Tilak, R. (2018). "The Effects of Icon Characteristics on Search Time." Presented at Proceedings of the AHFE 2018 International Conferences on Usability & User Experience and Human Factors and Assistive Technology

- Dhou, K., Mouring, M., and Hadzikadic, M., “A Novel Algorithm for Bi-Level Image Coding and Lossless Compression based on Virtual Ant Colonies,” to be published in the Proceedings of COMPLEXIS 2018, March 20-21, 2018, Funchal, Madeira, Portugal
- Kamyab, Y. and Hadzikadic, M., “An Agent-Based Study of Herding Relationships with Financial Markets Phenomena,” Proceedings of 2017 Winter Simulation Conference WSC 2017, December 3-6, 2017, Las Vegas, NV
- Abdullah, M. and Hadzikadic, M., “Sentiment Analysis of Twitter Data: Emotions Revealed Regarding Donald Trump during the 2015-16 Primary Debates,” Proceedings of the 29<sup>th</sup> International Conference on Tools with Artificial Intelligence ICTAI 2017, November 06-08, 2017, Boston, MA
- Tabari, N. and Hadzikadic, M., “Context Sensitive Sentiment Analysis of Financial Tweets: A new Dictionary,” Proceedings of International Symposium on Methodologies for Information Systems ISMIS 2017, June 26-29, 2017, Warsaw, Poland
- Kamyab, Y. and Hadzikadic, M., “Role of Behavioral Heterogeneity in Aggregate Financial Market Behavior: An Agent-Based Approach,” Proceedings of the International Conference on Computational Science, ICCS, 2017, 12-14 June 2017, Zurich Switzerland
- Abdullah, M. and Hadzikadic, M. “Sentiment Analysis on Arabic Tweets: Challenges to Dissecting the Language,” Proceedings of the International Conference on Social Computing and Social Media, 9-14 July, 2017, Vancouver, CA. 2017
- Hodzic, M., Hadzikadic, M., Carmichael, T., and Selman, S. “Dual Approach to Complex System Analysis and Modeling,” Proceedings of the International Conference on Pure Mathematics - Applied Mathematics, Vienna, Austria, March 15-17, 2015, pp 270-275.
- Su, Z. and Hadzikadic, M., “Trust Metric Exploration in Optimizing Stock Investment Strategies,” International Symposium on Methodologies for Intelligent Systems, ISMIS 2015, October 21 – 23, 2015, Lyon, France
- Su, Z. and Hadzikadic, M., “An Agent-Based System for Issuing Stock Trading Signals,” SIMULTECH 2015, 5th International Conference on Simulation and Modeling Methodologies, Technologies, and Applications, July 21- 23, 2015, Colmar France.
- Zheyuan Su and Mirsad Hadzikadic, “Applications of Complex Adaptive Systems in Portfolio Management,” Proceedings of the 5<sup>th</sup> World Congress on Social Simulation, Sao Paulo, Brazil, November 4-7, 2014
- Carissa Flocken, Ted Carmichael, and Mirsad Hadzikadic, “The Role of Uninformed Individuals in Making the Right Group Decisions,” The Computational Social Science of the Americas Conference, Santa Fe, New Mexico, September 18-21, 2012
- Mirsad Hadzikadic, “Understanding Human Behavior in Designing Building-Scale Sustainable Ecosystems,” Green Design Conference, Sarajevo, Bosnia-Herzegovina, September 27-30, 2012
- Eichelberger, C. and Hadzikadic, M., “Breaking the Box: Simulated Protein Computing,” Bionetics 2010, 5th International ICST Conference on Bio-Inspired Models of Network, Information, and Computing Systems, December 1-2, 2010, Boston, MA

- Carmichael, T., Hadzikadic, M, Gajic O., “Pilot Study: Agent-based Exploration of Complex Data in a Hospital Environment,” accepted for presentation and publishing in the Proceedings of the Sixth International Workshop on Agents and Data Mining Interaction (ADMI’10) joint with the Ninth International Conference on Autonomous Agents and Multiagent Systems (AAMAS2010), Toronto, 2010
- Dréau, D., Stanimirov, D., Carmichael T., Hadzikadic M., "An Agent-Based Model of Solid Tumor Progression," 1st International Conference on Bioinformatics and Computational Biology, 8-10 April 2009, New Orleans
- Saric, A., Hadzikadic, M., and Wilson, D., "Alternative Formulas for Rating Prediction Using Collaborative Filtering," Proceedings of ISMIS, Prague, 2009
- Whitmeyer, J., Carmichael, T., Eichelberger, C., Hadzikadic, M., Khouja, M., Saric, A., Sun, M. "A Computer Simulation Laboratory for Social Theories," the 2008 IEEE/WIC/ACM International Conference on Intelligence Agent Technology, Sydney, Australia, December 2008
- Khouja, M. Hadzikadic, M., Zaffar, M. A., and Otto, G. “An Agent Based Modeling Approach For Determining Optimal Price-Rebate Schemes,” Proceedings of the 5th International Conference on Business: Marketing,” Athens, Greece, July 2-3, 2007
- Eichelberger, C. and Hadzikadic, M. "Complex Adaptive Systems: Using a Free-Market Simulation to Estimate Attribute Relevance". In Foundations of Intelligent Systems, Esposito, F., Ras, Z., Malerba, D., and Semeraro, G., eds. Proceedings of the 16th International Symposium, ISMIS 2006, Bari, Italy, September 2006
- Eichelberger, C. and Hadzikadic, M. "Investigating Agent Strategies within a Complex Adaptive System of Purchasing Agents for Estimating Attribute Relevance," 2006 IEEE/WIC/ACM International Conference on Web Intelligence and Intelligent Agent Technology (WI-IAT 2006 Workshops Proceedings), Hong Kong, China 18-22 December 2006 (Eds. Butz., C., Nguyen, N., Takama, Y., Cheung, W., Cheung, Y.-M.)
- Najarian, K., Sun, X., Ahn, G., and Hadzikadic, M. "A Neural Model for Network Intrusion Detection," 6th World Multiconference on Systemics, Cybernetics and Informatics (SCI 2002), vol. 12, Orlando, FL, 2002
- Hadzikadic, M. and Bohren, B. "Determining Attribute Relevance in Decision Trees," ISMIS '97, Charlotte, NC, October 1997
- Hadzikadic, M., Bohren, B. “Concept Formation vs. Logistic Regression: Predicting Death in Trauma Patients, Conference Presentation.” SCAMC ‘95, New Orleans, October 1995
- Hadzikadic M., “Information, Intelligence, and Interface: The Three Pillars of a Successful Medical information System,” Proceedings of the 1995 Congress on Medical informatics, Vancouver Canada, July 1995
- Hadzikadic, M., “Orthopaedic Trauma Registry,” Proceedings of the Eleventh International Symposium on the Creation of Electronic Health Record Systems and

Global Conference on Patient Cards, Medical Record Institute, pp. 169-175, Orlando, Florida, March 14-19, 1995

- Hanley, E.N., Kane, S.M., Bohren, B.F., Dorbandt, A., and Hadzikadic, M. "Healthy Life-styles and Low Back Pain," Proceedings of the 62nd American Academy of Orthopaedic Surgeons, Orlando, Florida, February 1995
- Bohren, B.F. and Hadzikadic, M. "Turning Medical Data into Decision-Support Knowledge," Proceedings of the Symposium on Computer Applications in Medical Care, pp. 735-39, SCAMC 1994
- Hadzikadic, Mirsad. "Prediction Performance as a Function of the Representation Language in Concept Formation Systems," Proceedings of the Fourteenth Annual Conference of the Cognitive Science Society, Bloomington, Indiana, pp. 850-854, July 29 - August 1, 1992
- Hadzikadic, Mirsad. "Medical Diagnostic Expert Systems: Performance vs. Representation," Proceedings of the Fifth IEEE Symposium on Computer-Based Medical System, Duke University, Durham, NC, June 14-17, 1992
- Bohren, Benjamin and Hadzikadic, Mirsad. "Automated Design of Diagnostic Knowledge-Based Systems," Proceedings of the Thirteenth Annual International Conference on the IEEE Engineering in Medicine and Biology Society, Orlando, Florida, October 31 -- November 3, 1991, pp. 1294-1295
- Hadzikadic, Mirsad "Designing a Diagnostic Knowledge-Based System by a Novice," Proceedings of the World Congress on Expert Systems, Orlando, Florida, December 16-19, 1991, pp. 1450-1457
- Hadzikadic, Mirsad "Context-Sensitive, Distributed, Variable-Representation Category Formation," Proceedings of the Thirteenth Annual Meeting of the Cognitive Science Society, Chicago, Illinois, August 7-10, 1991, pp. 269-274
- Hadzikadic, Mirsad "Prototypes and Similarity in Incremental Conceptual Clustering Systems," Proceedings of the Fourth International Symposium on Methodologies for Intelligent Systems, Charlotte, North Carolina, October 12, 1989, pp. 289-296
- Hadzikadic, Mirsad and Yun, David Y.Y. "Concept Formation by Incremental Conceptual Clustering," Proceedings of the Eleventh International Joint Conference on Artificial Intelligence, Detroit, Michigan, August 20-25, 1989, pp. 831-836
- Hadzikadic, Mirsad "Prototypes and Similarity: Concept Formation," invited paper, Proceedings of the IEEE Southeastern 89, Columbia, South Carolina, April 9-12, 1989, pp. 19-23
- Hadzikadic, Mirsad and Chen, Su-shing "Spatial Reasoning: Learning from Observations," Proceedings of the SPIE Symposium on Advances in Intelligent Robotics Systems. Philadelphia, Pennsylvania, November 1989, pp. 247-255

- Hadzikadic, Mirsad “Learning a Hierarchy of Concepts: An Incremental Approach,” Proceedings of the Third IASTED International Conference on Expert Systems: Theory & Applications, Los Angeles, December 12-14, 1988, pp. 77-80
- Hadzikadic, Mirsad “Concept Formation by Goal-Driven, Context-Dependent Classification,” Proceedings of the Third International Symposium on Methodologies for Intelligent Systems, Turin, Italy, October 12-15, 1988, pp. 322-332
- Hadzikadic, Mirsad “INC2: A Prototype-Based Incremental Conceptual Clustering System,” Proceedings of the 2nd European Knowledge Acquisition for Knowledge-Based Systems Workshop, Bonn, Germany, June 19-23, 1988, pp. 20.1-20.13
- Hadzikadic, M., Yun, D. Y. Y., Ho, B., “A Model-Based Framework for Characterization of Application Domains for the Expert System Technology,” Proceedings of the Second International Symposium on Methodologies for Intelligent Systems, Charlotte, North Carolina, October 14-17, 1987, pp. 64-72
- Hadzikadic, Mirsad “Concept Formation by Psychologically Plausible Classification, Colloquium of the Second International Symposium on Methodologies for Intelligent Systems, Charlotte, North Carolina, October 17, 1987, pp. 133-144
- Hadzikadic, M., Yun, D. Y. Y., Ho, B., “Characterization of Application Domains for the Expert System Technology,” Proceedings of the Workshop on High Level Tools for Knowledge-Based Systems, Shawnee State Park, OH, October 6-8, 1986
- Hadzikadic, M., Lichtenberger, F., Yun, D. Y. Y., “An Application of Knowledge-Base Technology in Education: A Geometry Theorem Prover,” Proceedings of the 1986 ACM Symposium on Symbolic and Algebraic Computation, Waterloo, Ontario, July 21-23, 1986, pp.141-147
- Biswas, P. Hadzikadic, M., “A Parallel Architecture for Syntactic Pattern Recognition Based on Logic Program Execution Model,” Proceedings of the 1985 IEEE Computer Society Workshop on Computer Architecture for Pattern Analysis and Image Database Management, Miami Beach, Florida, November 18-20, 1985, pp. 68-74

#### 4.3 Peer Reviewed Books and Book Chapters

- Carmichael, T., Collins, T., and Hadzikadic, M. (eds). “Complex Adaptive Systems: Views from the Physical, Natural, and Social Sciences.” Springer, 2019
- Carmichael, T. and Hadzikadic, M. “The Fundamentals of Complex Adaptive Systems,” pp. 1-16, in Carmichael, T., Collins, T., and Hadzikadic, M. (eds). “Complex Adaptive Systems: Views from the Physical, Natural, and Social Sciences.” Springer, 2019
- Hadzikadic, M. and Whitmeyer, J. “Lessons from a Project on Agent-Based Modeling.” In Edited volume by Davis, P. K., O’Mahony, and A., Pfautz, J. Eds. “Social-Behavioral Modeling for Complex Systems,” pp 655-670, Wiley, March 2019
- Nawaz, A. M. and Hadzikadic, M., “Hybrid Comparative Predictive Modeling,” in Hadzikadic, M. and Avdakovic, S. (Eds.) Advanced Technologies, Systems, and Applications II, Lecture Notes in Networks and Systems” a collection of papers presented

- at the International Symposium on Advanced Technologies, Systems, and Applications, Teslic, Bosnia-Herzegovina, May 2017, Springer, 2018.
- Hadzikadic, M. and Avdakovic, S. (Eds.), “Advanced Technologies, Systems, and Applications II, Lecture Notes in Networks and Systems” a collection of papers presented at the International Symposium on Advanced Technologies, Systems, and Applications, Teslic, Bosnia-Herzegovina, May 2017, Springer, 2018.
  - Hadzikadic, M. and Avdakovic, S. (Eds.), “Advanced Technologies, Systems, and Applications, Lecture Notes in Networks and Systems” a collection of papers presented at the International Symposium on Advanced Technologies, Systems, and Applications, Neum, Bosnia-Herzegovina, June 2016, Springer, 2017.
  - Abbott, R. and Hadzikadic, M., “Complex Adaptive Systems, Systems Thinking, and Agent-Based Modeling,” in *Advanced Technologies, Systems, and Applications, Lecture Notes in Networks and Systems*, Hadzikadic and Avdakovic (Eds.), Springer, 2017.
  - Hadzikadic, M. and Y. Da, “Understanding Human Behavior in Designing Building-Scale Sustainable Ecosystems,” in Yong, X. T. and Jiang, Y. Eds. *Analytics for Building-Scale Sustainable Ecosystems: US-China Research Perspectives*, Begell House, Inc., 2016
  - Hadzikadic, M., O'Brien, S., and Khouja, M., (Eds.), *Managing Complexity: Practical Considerations in the Development and Application of ABMs to Contemporary Policy Challenges*, Springer, 2013
  - O. Brien, S, Hadzikadic, M., and Khouja, M, "Addressing Complex Challenges in an Interconnected World," in *Managing Complexity: Practical Considerations in the Development and Application of ABMs to Contemporary Policy Challenges*, Hadzikadic, O'Brien, and Khouja (Eds.), pp 1-7, Springer, 2013
  - O. Brien, S, Hadzikadic, M., and Khouja, M, "Complexity: Where Does It Come From?," in *Managing Complexity: Practical Considerations in the Development and Application of ABMs to Contemporary Policy Challenges*, Hadzikadic, O'Brien, and Khouja (Eds.), pp 9-17, Springer, 2013
  - Hadzikadic, M. and Carmichael, T., “Complex Adaptive Systems,” in *Cognitive Science: An Interactive Approach*, National Social Science Press, Fall of 2011
  - Hadzikadic, M. and Sun, M., "Wisdom of Crowds in the Prisoner's Dilemma Context," in *Advances in Machine Learning, Volume II*, J. Koronacki et al (Eds.), *Studies in Computational Intelligence*, Springer, 2010
  - Carmichael, T., Hadzikadic, M., Dreau, D., and Whitmeyer, J., "Towards a General Tool for Studying Threshold Effects Across Diverse Phenomena," in *Advances in Information & Intelligent Systems*, Z.W. Ras, W. Ribarsky (editors), *Studies in Computational Intelligence*, Springer, 2009
  - Hadzikadic, M., Bohren, B. F., “Determining Attribute Relevance in Decision Trees,” *Lecture Notes in Artificial Intelligence* (Eds. Z. W. Ras and A. Skowron), Springer Verlag, pp, 507-516, 1997

- Ras, Z., Emrich, Hadzikadic, M. (eds.), Proceedings of the Poster Session, ISMIS'89, ORNL, October, 1989

#### **4.4 Patents Awarded**

- U.S. Patent 7,213,023 B2: Incremental Clustering Classifier and Predictor (with Chris Eichelberger and Benjamin Bohren)
- U.S. Patent 7,873,643 B2: Incremental Clustering Classifier and Predictor (with Chris Eichelberger and Benjamin Bohren)

### **5 Extramural Funding**

#### **5.1 Peer Reviewed National and International Grants**

- "CVDI IUCRC UNC Charlotte Site," NSF, \$399,582, Mirsad Hadzikadic PI, March 2018 – February 2022.
- "Deep Agent: A Framework for information Spread and Evolution in Social Networks," DARAPA, SocialSim program, Ivan Garibay PI at the University of Central Florida, total grant \$6.2M, sub-contract to UNC Charlotte \$900K, Mirsad Hadzikadic PI for the subcontract, January 2018 – December 2022.
- "Economic Modeling of North Carolina," \$1,000,000, State of North Carolina grant, Mirsad Hadzikadic PI, January 1, 2016 – June 30, 2017.
- "NC Data Science and Analytics Initiative," State of North Carolina grant, Mirsad Hadzikadic PI (5 other Co-PIs from UNC Charlotte, NC state University, and Renaissance Institute of UNC Chapel Hill), \$2,100,000, 2015-2018.
- "RCN-SEES: Predictive Modeling Network for Sustainable Human-Building Ecosystems (SHBE)," a \$62,497 subcontract from the University of North Texas, Tolone PI, Hadzikadic Co-PI for UNC Charlotte, 2014-2016.
- "An Analytical Framework for Rapid End-to-End Support for Effective Civil-Military Operations Planning;" Tolone PI, Whitmeyer, Walsh, Hadzikadic Co-PIs, ERDC, \$350,148, 2014.
- "Complex Adaptive Systems: Resilience, Robustness, and Evolvability," National Science Foundation, Mirsad Hadzikadic PI, Ted Carmichael Co-PI, \$15,000, 2010-2011, Symposium support.
- "Computer Simulations in the Humanities," National Endowment for the Humanities, Marvin Croy (Philosophy) PI, Mirsad Hadzikadic Co-PI, \$158,225, 2010-2012, Research and workshop.
- "Complex Adaptive Systems and the Threshold Effect: Views from the Natural and Social Sciences," National Science Foundation, Mirsad Hadzikadic PI, Ted Carmichael Co-PI, \$48,060, 2009-2010. Symposium support.
- "ACSES: Actionable Capability for Social and Economic Systems," \$695,000 total -- UNC Charlotte's participation was \$268,000, DARPA, (Technical Lead Mirsad

Hadzikadic, UNC Charlotte, Administrative Lead Steve Fernandez, ORNL, Collaborators: ORAU, Georgia Tech), 2007-2008. Research.

- “Critical Infrastructure Modeling and Simulation,” Department of Defense, \$746,683, (William J. Tolone PI, Mirsad Hadzikadic Co-PI, five other collaborators), 2003-2004, subcontract from the Microelectronics Center of North Carolina, Co-PI. Research.
- “Web-based Materials for an Interdisciplinary Course in Cognitive science,” NSF, \$200,000, 1999-2001, Senior member of the curriculum development team (together with other members of the Cognitive Science Academy, Paula Goolkasian PI). Curriculum development.
- “Community-oriented Problem Oriented Policing System,” Subcontract for a NIJ/DOJ award, 1999-2000, (\$1,250,000), Technical Lead. Research and development.
- Program Director for the Charlotte Mecklenburg Hospital Authority’s (CMHA) portion of the NIST-funded grant “Virtual Computer-based Patient Record,” total value \$9,600,000. The grant was obtained by the joint effort of CMHA, First Data Corp, and Hughes Aircraft. First Data Corp. provided the overall leadership on the project, 1995-1996. Research and development.
- “Cognitive Science Research Laboratory for Undergraduates,” (\$36,000) Awarded by the National Science Foundation, ILI program, Co-PI (together with five other members of the Cognitive Science Academy), 1993-95. Educational infrastructure development.

## 5.2 Peer Reviewed Industrial Grants

- “Smart Cards,” (\$250,000), 1996, Planning Grant Awarded by Duke Foundation. Research and development.
- “Allograft Outcome Study,” (\$52,350) Awarded by LifeNet, 1993-95. Research.

## 5.3 Awards and Donations

- "eBusiness Technology Institute," \$2,000,000, (with Olin Broadway), Contribution from Bank of America and Wachovia, 2002-2006. Development.

## 5.4 Other Grants

- “Datacenter Visualization,” \$280,064, (with IntePoint, Inc.), Wachovia Corporation, 2007. Research and development.
- “Bariatric Database,” Carolinas Medical Center, \$75,000, 2006. Development.
- “Using Data Mining Techniques to Define Key Drivers of Satisfaction and Loyalty in a Banking Industry,” Financial Services Exchange, \$15,000, 2002-2003. Research.
- “Educational/Research Computer Programs in Health Informatics,” a series of projects (\$260,000 combined award) Awarded by Charlotte-Mecklenburg Health Services Foundation, 1992-1996. Research and development.

## **6 Service and Outreach**

### **6.1 External Service**

#### **6.1.1 Invited Talks**

- Keynote address: “Understanding Human Behavior in Designing Building-Scale Sustainable Ecosystems,” Green Design Conference, Sarajevo, September 27-30, 2012
- Keynote address: “Change in the Context of Complex Systems,” North Carolina Technology Association’s Conference on “Leaders Driving Change Through Technology: What’s Next?” Charlotte, North Carolina, June 19, 2009
- “Complex Adaptive Systems,” The Caesarea Edmond Benjamin de Rothschild Foundation Institute for Interdisciplinary Applications of Computer Science at the University of Haifa, Haifa, Israel, May 2008

#### **6.1.2 Journal/Conference Reviewer**

- International Journal of Intelligent Systems
- International Journal on Artificial Intelligence in Engineering
- Interesting Knowledge Mining at NCM
- International Conference on Intelligent Agent Technology
- AAMAS Workshop on Agents and Data Mining Interactions
- International Workshop on Mining Complex Data
- International Conference on Data Warehousing and Knowledge Discovery
- International Symposium on Agent and Multi-Agent Systems: Technologies and Applications
- International Multi-conference on Computer Science and Information Technology; International Symposium on Advances in Artificial Intelligence and Applications
- International Conference on Rough Sets and Emerging Intelligent Systems Paradigm
- COMPLEXIS
- DFC
- CSSSA
- CAPS

#### **6.1.3 Program Committees**

- Conference on Policy and Complex Systems (CAPS)
- DFC
- COMPLEXIS
- CSSSA
- HONET
- ICAT
- SIMULTECH
- Co-Chair (Chair Paul Youngman), Human Experience Conference, Charlotte, June, 2012.

- Swarmfest
- Chair (Ted Carmichael Co-Chair), AAAI Fall Symposium 2011 – Complex Adaptive Systems: Energy, Information, and Intelligence, Arlington, VA, November 2011
- NCHICA Annual Conference Program Committee
- Chair (Ted Carmichael Co-Chair), AAAI Fall Symposium 2010 - Complex Adaptive Systems: Resilience, Robustness, and Evolvability, Arlington, VA, November, 2010
- Chair (Ted Carmichael and Liz Johnson, Co-Chairs), Short Course “SC 17 –Agent-Based Modeling in Policy: How to Simply Demonstrate Dynamics, Complexity, and Alternatives in Analysis,” the American Political Science Association’s 2010 Annual Meeting and Exhibition, Washington, DC, September 2-5, 2010
- IEEE/WIC/ACM International Conference on Intelligent Agent Technology
- Chair (Ted Carmichael Co-Chair), AAAI Fall Symposium 2009 - Complex Adaptive Systems and the Threshold Effect: Views from the Natural and Social Sciences, Arlington, VA, November 2009
- Interesting Knowledge Mining at NCM
- International Symposium on Methodologies for Intelligent Systems
- International Symposium on Agent and Multi-Agent Systems: Technologies and Applications
- AAMAS Workshop on Agents and Data Mining Interactions
- International Workshop on Mining Complex Data
- International Conference on Data Warehousing and Knowledge Discovery
- International Multi-conference on Computer Science and Information Technology; International Symposium on Advances in Artificial Intelligence and Applications
- International Conference on Rough Sets and Emerging Intelligent Systems Paradigms

#### **6.1.4 Editorial Boards/Panels**

- The Chair of the Editorial Board for the Journal of Policy and Complex Systems

#### **6.1.5 Professional Affiliations/Memberships**

- At some point in time I was a member of:
  - American Association for the Advancement of Science
  - American Association for Artificial intelligence
  - Association for Computing Machinery
  - Institute for Electrical and Electronic Engineers – Computer Society
  - American Medical Informatics Association
  - Healthcare Information and Management Systems Society
  - Orthopaedic Research Society
  - North Carolina Healthcare Information and Communications Alliance (Specification Committee; Security, Privacy, and Confidentiality Committee)

### 6.1.6 Community Service

- A member of the Deans Council (2000-2008), a national organization that provides a forum for exchange of ideas among the deans of computing and information schools
- The Chair of the Advisory Board for the School of Information Technology at the University of Dubai (2004 - Present)
- A member of the Charlotte Chamber of Commerce IT Council (2003-2006)
- A member of the Technology Executives of Charlotte (2004-2005)
- A member of the Steering Committee of high-technology-focused conferences organized by the Metrolina Entrepreneurial Council and the North Carolina Technology Association
- A member of the Vision 2030 Task Force, an effort to outline the future strategic investments for the State of North Carolina
- A member of the North Carolina Department of Commerce delegation to Europe in 2002 and 2003 to promote the biotechnology and information technology resources in the state
- A member of the state's task forces on collaborative technologies (Collaboratories), biotechnologies (NC Genomics and Bioinformatics Consortium's Task Force on High Performance Computing), and work-force improvement
- Served as a member (and a representative of both the University and the College) of the North Carolina Healthcare Information and Communication Alliance
- A reviewer for the Carolinas Healthcare System's Patient Review Committee, 1997
- A reviewer for the city of Charlotte, 1995
- A reviewer for National Science Foundation, 1989, 1991, 1993
- A reviewer for North Carolina Innovation Research Fund, Technological Development Authority, NC Department of Commerce, Raleigh, 1989
- A member of the Science Advisory Board of the Republic of Bosnia and Herzegovina, 1989-1990
- An expert witness for three legal firms in the areas of databases and software ownership