

W. JOHN KRUSE

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EDUCATION

PhD, UNIVERSITY OF ARIZONA, 2001

Major - Management Information Systems

Minor - Management and Policy

Major Advisor - Dr. Jay Nunamaker

MBA, UNIVERSITY OF WYOMING, 1993

Graduate Paper - Technology Management

BS, UNIVERSITY OF WYOMING, 1989

Management Information Systems with Computer Science Option

PROFESSIONAL EXPERIENCE

DIRECTOR OF SYSTEMS DEVELOPMENT

University of Arizona, Center for the Management of Information, February 1999 - Present

Performs research, supervisory and administrative duties in support of a wide variety of projects focused on information technology, software development and collaborative systems. Current research initiatives include development of large-scale collaborative environments, group support systems prototypes, situation awareness support, Network-Centric Warfare systems, and automated deception and intent detection software systems. Prior research projects involved group facilitation, group writing, humanitarian assistance and disaster relief support, anti-terrorist/force protection portal, knowledge management, and technology adoption. Authored grant proposals, reports, presentations and academic articles.

Project details are listed below

GRADUATE ASSOCIATE

University of Arizona, August 1996 - February 1999

Performed research and administrative duties in support of a faculty member's exploration of computer-supported change management and business process reengineering.

SUPERVISORY COMPUTER SPECIALIST

United States Property and Fiscal Office, February 1994 - August 1996

Supervised and coordinated the personnel and operations of an automated data processing installation. Evaluated new equipment and software. Performed database and systems administration duties in the absence of subordinates. Prepared and administered the annual data processing budget. Served as the data processing security officer.

ARTILLERY OFFICER

1-180th Field Artillery Battalion, Arizona Army National Guard, 1991 - 2001

Commanded A Battery, 1-180th Field Artillery, a 93 soldier self-propelled field artillery battery (155mm, M109A5). Previously served as Commander of C/2-180th Field Artillery, Battery Executive Officer, Assistant Battalion Operations Officer, Battalion S-1 (Personnel Officer), Fire Direction Officer, Fire Support Officer.

SYSTEMS ADMINISTRATOR/APPLICATIONS PROGRAMMER

Options & Choices, Inc., October 1989 - December 1993

Managed a variety of networked and stand-alone UNIX and PC/DOS systems at a number of local and remote sites. Designed, modeled and developed integrated software that maintains personnel information, controls computer security, and tracks marketing efforts throughout the corporation. Developed and maintained portions of OPTIS©, a fully integrated health care management system. Executed statistical analysis of health care costs and utilization for a number of large corporations.

AIR TRAFFIC CONTROLLER

349th Air Traffic Control Company, Wyoming Army National Guard, 1984-1990

Directed military aircraft as an assistant section chief in ground-controlled approach radar and flight following facilities.

GRADUATE ASSISTANT

University of Wyoming, June 1993 - December 1993

Performed case research and course preparation for a business college faculty member.

PUBLICATIONS

An Experimental Investigation of E-Training. George, J.F., Burgoon, J.K., Nunamaker, J.F., Jr., Crews, J.M., Cao, J., Lin, M., Maret, K., Biros, D.P., Adkins, M., and Kruse, J. (Under review) *Information Systems Research*.

Detecting concealment of intent in transportation screening: a proof-of-concept. Burgoon, J.K., Twitchell, D. P., Jensen, M. L., Adkins, M., Kruse, J., Deokar, A., Lu, S., Metaxas, D., Nunamaker, J.F., & Younger, R.E. (In press). *IEEE Intelligent Systems*.

Deception Detection through Automatic, Unobtrusive Analysis of Nonverbal Behavior. Meservy, T.O., Jensen, M.L., Kruse, J., Twitchell, D.P., Tsechpenakis, G., Burgoon, J.K., Metaxas, D.N., Nunamaker, J.F., *IEEE Intelligent Systems*. September 2005, 20(5), 36-43.

The Technology Trap. Kruse, J., Adkins, M., *Proceedings of the U.S. Naval Institute*. August, 2005, 131(8).

Network Centric Warfare in the U.S. Navy's Fifth Fleet: Web-Supported Operational Level Command and Control in Operation Enduring Freedom. Kruse J., Adkins, M., Case Study for Office of Force Transformation, Office of the Secretary of Defense.

A Technology Transition Model Derived from Field Investigation of GSS Use Aboard U.S.S. CORONADO. Briggs, R.O., Adkins, M., Mittleman, D., Kruse, J., Miller, S., Nunamaker, J.F., *Journal of Management Information Systems*. Winter, 1998-99, 15(3), 151-193.

SCHOLARLY PRESENTATIONS

Detecting Deception in Person-of Interest Statements. Fuller, C., Biros, D.P., Adkins, M., Burgoon, J.K., Kruse, J. (2006). In H. Chen, R. Moore, D. D. Zeng, J. Leavitt (Eds.) *Intelligence and Security Informatics: Fourth Symposium on Intelligence and Security Informatics*. Springer Berlin / Heidelberg

Group support systems for very large groups: A peer review process to filter brainstorming input. Helquist, J.H., Kruse, J., Adkins, M. (2006). *Proceedings of the Americas Conference on Information Systems (AMCIS)*, Acapulco, México August, 2006.

Developing large scale participant-driven group support systems: An approach to facilitating large groups. Helquist, J.H., Kruse, J., Adkins, M. (2006) In R. H. Sprague, Jr. (Ed.) *Proceedings of the Thirty-Ninth Hawaii International Conference on Systems Sciences*, Los Alamitos, CA: IEEE Computer Society Press.

A Quasi-experiment to Determine the Impact of a Computer Based Deception Detection Training System: The Use of Agent99 Trainer in the U.S. Military. Biros, D.P., Sakamoto, J., George, J.F., Adkins, M., Kruse, J., Burgoon, J.K., & Nunamaker, J.F., Jr. (2005) In R. H. Sprague, Jr. (Ed.) *Proceedings of the Thirty-Eighth Hawaii International Conference on Systems Sciences*, Los Alamitos, CA: IEEE Computer Society Press.

An Approach for Intent Identification by Building on Deception Detection. Burgoon, J.K., Adkins, M., Kruse, J., Jensen, M.L., Meservy, T., Twitchell, D.P., Deokar, A., Nunamaker, J.F., Jr., Lu, S., Tsechpenakis, G., Metaxas, D.N., Younger, R.L. (2005). In R. H. Sprague, Jr. (Ed.) *Proceedings of the Thirty-Eighth Hawaii International Conference on Systems Sciences*, Los Alamitos, CA: IEEE Computer Society Press.

Detecting Deception in a Security Screening Scenario. Meservy, T. O., Jensen, M. L., Kruse, J., Burgoon, J. K., & Nunamaker, J. F. (Under Review). *Proceedings of the 38th Annual Hawaii International Conference on System Science (CD/ROM), Hawaii*.

- Automatic extraction of deceptive behavioral cues from video. Meservy, T.O., Jensen, M.L., Kruse, J., Burgoon, J.K., & Nunamaker, J.F. (2005). *Intelligence and Security Informatics: Proceedings of the Third Symposium on Intelligence and Security Informatics ISI 2005, Atlanta, GA, USA*. Berlin: Springer-Verlag.
- Automatic Extraction of Deceptive Behavioral Cues from Video. Meservy, T. O., Jensen, M. L., Kruse, J., Burgoon, J. K., & Nunamaker, J. F. (2005). In P. Kantor & G. Muresan & F. Roberts & D. Zeng & F.-Y. Wang & H. Chen & R. Merkle (Eds.), *Intelligence and Security Informatics: Proceedings of the IEEE International Conference on Intelligence and Security Informatics ISI 2005, Atlanta, GA, USA* (Vol. 3495, pp. 198-208). Berlin: Springer – Verlag
- HMM-Based deception recognition from visual cues. Tsechpenakis, G., Metaxas, D., Adkins, M., Kruse, J., Burgoon, J.K., Jensen, M.L., Meservy, T., Twitchell, D.P., Deokar, A., & Nunamaker, J.F., Jr. (2005). *Proceedings of the IEEE International Conference on Multimedia & Expo*. Amsterdam, The Netherlands.
- Moving toward intent detection: A tool-based approach. Burgoon, J.K., Adkins, M., Kruse, W.J., Jensen, M.L., Deokar, A. Twitchell, D.P., Lu, S., Metaxas, D.M., Nunamaker, J.F., Jr., & Younger, R.E. (2004) *IEEE proceedings from the Conference on Intelligent Transportation Systems*. Washington, D.C. IEEE.
- Blob Analysis of the Head and Hands: A Method for Deception Detection. Lu, S., Tsechpenakis, G., Metaxas, D., Jensen, M., Kruse, J. (2005) *Proceedings of the Thirty Eighth Hawaii International Conference on System Sciences, Hawaii*.
- Network Centric Warfare in the U.S. Navy's Fifth Fleet. Kruse, J., Adkins, M., Holloman, K. (2005) *Proceedings of the Thirty Eighth Hawaii International Conference on System Sciences, Hawaii*.
- The Decision for Detecting Intent. Burgoon, J.K., Adkins, M., Kruse, J., Jensen, M. L., Deokar, A. Twitchell, D. P., Nunamaker., J..F. Jr., Lu, S., Metaxas, D. M., & Younger, R. E. (2004) *Proceeding of the Global Business and Finance Research Conference*, London.
- A Language Technology Toolset for Development of a Large Group Augmented Facilitation System. Adkins, M., Kruse, J., Younger, R. (2004) *Proceedings of the Thirty Seventh Hawaii International Conference on System Sciences, Hawaii*.
- Ubiquitous Computing: Omnipresent Technology in Support of Network Centric Warfare. Adkins, M., Kruse, J., Younger, R. (2002) *Proceedings of the Thirty Fifth Hawaii International Conference on System Sciences, Hawaii. Nominated for Best Paper*
- Applying the Technology Transition Model to GSS Fielding. Kruse, J., Adkins, M., Briggs, R. (2001) *Proceedings of the Thirty Fourth Hawaii International Conference*

on System Sciences, Hawaii.

Experiences using Collaborative Technologies with the United Nations and Multi-National Militaries: Rim of the Pacific 2000 Strong Angel Exercise in Humanitarian Assistance. Adkins, M., Kruse, J., Damianos, L., Brooks, J., Younger, R., Rasmussen, E., Rennie, Y., Oshika, B., Nunamaker, J. (2001) *Proceedings of the Thirty Fourth Hawaii International Conference on System Sciences, Hawaii.*

Improving Operational Situational Awareness with Collaborative Technologies. Kruse, J. (2000) *Proceedings of the Thirty Third Hawaii International Conference on System Sciences, Hawaii.*

Developing a Virtual Environment to Support Disaster Relief with the United States Navy's Commander Third Fleet. with Adkins, M., Kruse, J., McKenna, S., Cuyugan, A., Nunamaker, J., Miller, S., Younger, R. (2000) *Proceedings of the Thirty Third Hawaii International Conference on System Sciences, Hawaii.*

GSS Collaboration in Document Development: Using GroupWriter to Improve the Process. Adkins, M., Reinig, J., Kruse, J., Mittleman, D. (1999) *Proceedings of the Thirty Second Hawaii International Conference on System Sciences, Hawaii.*

Lessons Learned Using a Technology Transition Model with the US Navy. Briggs, R., Adkins, M., Kruse, J., Nunamaker, J., Mittleman, D., Miller, S. (1999) *Proceedings of the Thirty Second Hawaii International Conference on System Sciences, Hawaii.*

OTHER PRESENTATIONS

Augmenting Human Identification of Emotional States in Video. Burgoon, J. K., Jensen, M. L., Meservy, T. O., Kruse, J., & Jr., J. F. N. (2005). *Paper presented at the Intelligence Analysis Conference, McLean, VA.*

Validating an Automated System for Identifying Suspicious Behavior from Videotaped Gestures and Movements. Burgoon, J. K., Nunamaker, J. F., Adkins, M., Tsechpenakis, G., Metaxas, D. N., Lu, S., Kruse, J., Jensen, M. L., Meservy, T. O., Twitchell, D. P., & Younger, R. E. (2005). *Paper presented at the Interacting Bodies Conference, Lyon, France.*

Automated Deception Detection from Nonverbal Behavioral Cues. Jensen, M. L., Meservy, T. O., John Kruse, Burgoon, J. K., & Jay F. Nunamaker, J. (2005). *Paper presented at the Department of Homeland Security Research and Development Conference, Boston, MA.*

Identification of Deceptive Behavioral Cues Extracted from Video. Jensen, M. L., Meservy, T. O., Kruse, J., Burgoon, J. K., & Jay F. Nunamaker, J. (2005). *Paper presented at the International IEEE Conference on Intelligent Transportation*

Systems, Vienna, Austria.

Lessons Learned From Developing Systems to Automatically Detect Deception in Various Modalities. Jensen, M. L., Meservy, T. O., Kruse, J., Burgoon, J. K., & Nunamaker, J. F. (2005). *Paper presented at the Global Business and Finance Research Conference, London, England.*

WORKSHOPS & EDUCATION

Network Centric Warfare Training Workshop

2006 2-Day RUAG, Berne, Switzerland

2006 1-day Raytheon Missile Systems, Tucson, AZ

2005 2-day Lockheed Martin Corporation, Suffolk, VA

2005 3-day United States Department of Defense Office of Force Transformation, Evidence Based Research, Washington, D.C.

2005 3-day United States Department of Defense Office of Force Transformation Workshop Ministry of Defense ACT NATO - Ede, Netherlands

2005 1-day Pre-Conference for International Quality & Productivity Center Asia Conference - Singapore

2005 3-day United States Department of Defense Office of Force Transformation, Evidence Based Research, Washington, D.C.

2005 3-day United States Department of Defense Office of Force Transformation, Joint Forces Staff College, Norfolk, VA

2005 1-day Network Centric Operations Industry Consortium conference. San Diego, CA.

2005 3-day United States Department of Defense Office of Force Transformation Workshop Ministry of Defense Statute of the Military of the Armed Forces - Portugal

2005 3-day United States Department of Defense Office of Force Transformation Workshop Ministry of Defense ACT NATO - Netherlands

2005 1-day Pre-Conference for International Quality & Productivity Center Europe Conference - Germany

2005 3-day United States Department of Defense Office of Force Transformation Workshop National Acquisition University Fort Belvoir, Washington, D.C.

2005 3-day United States Department of Defense Office of Force Transformation for Department of Navy Chief Information Office, EBR Washington, D.C.

2005 3-day United States Department of Defense Office of Force Transformation Workshop Wolf PAC, EBR Washington, D.C.

2005 3-day United States Department of Defense Office of Force Transformation Workshop Wolf PAC, EBR Washington, D.C.

2004 1-day Pre-Conference for SMi Network Centric Warfare - Enhancing Battlespace Management Conference - London.

2004 1-day Pre-Conference for International Quality & Productivity Center Asia Conference - Singapore

2004 3-day United States Department of Defense Office of Force Transformation Workshop Ministry of Defense - Germany

2004 3-day United States Department of Defense Office of Force Transformation Workshop Ministry of Defense ACT NATO - Netherlands

2004 3-day United States Department of Defense Office of Force Transformation Workshop National Defense University Fort McNair, Washington, D.C.

2004 3-day United States Department of Defense Office of Force Transformation Workshop United States Service Academies and National Defense Universities, Naval Post Graduate School, CA.

2004 3-day United States Department of Defense Office of Force Transformation Workshop Allied NATO Command, Norfolk, VA

2004 3-day Office of Force Transformation Workshop Allied NATO Command, EBR, Washington, D.C.

2003 1-day United State Navy Tactical Training Group Pacific, San Diego, CA.

Standard Missile Collaborative Environment – Coordinating the development and fielding of a large-scale collaborative environment for a major defense project. This effort is focused on harnessing the tenets of Network Centric Operations to improve the organization, processes and cultures of a network of organizations working to provide Standard Missiles to the U.S. Navy and foreign clients.

StrikeCom – Leading the team that continuing development of an interactive wargame used to teach leadership, collaboration, and Network-Centric Warfare tenets. This application is utilized at the Office of Force Transformation’s NCW Short Courses and the USMC Expeditionary Warfare School.

AutoID (Automated Intent Detection) – Supervising team building a prototype that scans video to automatically identify suspicious movements and nonverbal cues. This Department of Homeland Security project is done in concert with the Center for BioImaging and Modeling at Rutgers University.

CommandNet – Integrated with the U.S. Navy’s Third Fleet to derive requirements and develop a Java collaborative logging tool that would allow users to routinely share operational and tactical information throughout the battlespace. By rapidly propagating situation awareness CommandNet promoted shorter decision-action cycles and more effective decisions. (PhD dissertation project funded by Defense Advanced Projects Research Agency)

Agent99 (Automated Deception Detection Prototype) – Supervising programming team to develop a prototype for automatically searching documents, email and transcripts for possible deception. (Project funded by U.S. Air Force Office of Scientific Research)

Collaborative Metrics Package – Developed a research program with U.S. Navy N6 to assess the effectiveness and usage of collaborative technologies used throughout Navy shore-based and afloat commands.

Tactical Anti-Terrorist Information and Planning System (TATIPS) – Derived requirements and managed the development of a fleet wide Lotus Domino system to support global force protection on naval ships (Project funded by Naval Criminal Investigative Service).

Humanitarian Aide/Disaster Relief – Worked with the U.S. Navy Third Fleet and United Nations agencies to develop standard practices, information systems and interfaces culminating in the Strong Angel exercise (Project funded by DARPA; <http://www.strongangel.org>).

Group Facilitation – Performed group support system research and facilitated myriad groups to include: U.S. Navy Command Ship Conference, U.S. Navy Third Fleet Commander’s Conference, RIMPAC Course of Action development, Bureau of Indian Affairs trust process reengineering, and United Nations Department of Peacekeeping Operations training standards group.

GroupWriter – Facilitated groups in the collaborative writing of documents and manuals with U.S. Army Training and Doctrine Command (TRADOC), U.S. Army Air Defense Artillery School, and U.S. Army Military Intelligence School.

HONORS AND AWARDS

Distinguished Graduate, Field Artillery Officer Basic Course, May 1992
Graduated first in class of 140 artillery officers.

Nominated for Best Paper at the Thirty Fifth Hawaii International Conference on System Sciences (2002) for "Ubiquitous Computing: Omnipresent Technology in Support of Network Centric Warfare", With Mark Adkins, and Robert Younger. *Nominated for Best Paper*