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### EDUCATION

FLORIDA STATE UNIVERSITY, Tallahassee, Florida, May 1999

Ph.D in Computer Science, Major Professor: R.C. Lacher  
Dissertation: "Improving Generalization of Constructive Neural Networks Using Ensembles"

WESTERN ILLINOIS UNIVERSITY, Macomb, Illinois, July 1993

MS in Computer Science, Major Professor: Eugene Sheng  
Thesis: "Hypertext: A Logical Approach to Experimental Management Systems"

UNIVERSITY OF ILLINOIS, Champaign-Urbana, Illinois, May 1983

B.F.A. in Theatre, Advisor: Wendy Knight  
Emphasis: Performance

### EMPLOYMENT

CALIFORNIA STATE UNIVERSITY, CHICO (CSUC) Chico, CA

[Institute for Research on Intelligent Systems \(IRIS\)](#), Board Member March 2006 - present  
Director of Outreach  
Co-founder  
[Intelligent Systems Lab \(ISL\)](#), Research Scientist & Professor March 2003 – present  
[Department of Computer Science](#), Professor August 2007 – present  
Associate Professor – tenured August 2004 – July 2007  
Assistant Professor – tenure track August 1998 – July 2004

COASTAL CAROLINA UNIVERSITY (CCU), Conway, SC

[Department of Computer Science](#), Asst. Professor (tenure-track) August 1996 – May 1998

FLORIDA STATE UNIVERSITY (FSU), Tallahassee, FL

[Department of Computer Science](#), Graduate RA/TA

Graduate Research Assistant \*August 1995 – December 1995  
Graduate Teaching Assistant (full course responsibility) August 1992 – \*<sup>(c)</sup>May 1996

WESTERN ILLINOIS UNIVERSITY (WIU), Macomb, IL

[Department of Computer Science](#), Graduate TA (full course responsibility) August 1989 – May 1992

## TEACHING AND ADVISING ACTIVITIES

- Courses taught cover a broad spectrum of Computer Science topics (having taught over 30 different courses), including Artificial Intelligence (AI), Language/Intelligence/Computation, Robotics and Machine Learning, Artificial Neural Networks, Genetic Algorithms, Cognitive Science, Knowledge Engineering, Data Mining, Expert Systems, Databases, Architecture, Assembly Language, Computing Theory, Networking, Operating Systems, Programming (C, C++, Lisp, Fortran, Pbasic, Javascript), Software Engineering, Unix, and Computer Literacy.
- Instructional technologies, platforms, and tools embraced include (not limited to):
  - Blackboard Vista (extensively), Wimba, ECST course web pages (extensively), Gmail, Google docs, Windows, Linux, Mac OS X, Lego Mindstorms RCX and NXT, AIBO RS2 and ERS7, Parallax Boe-Bots, Swiss Khepera, Parallax Scribbler, GNU C++, Java, NXT-G, RCX2.0, NQC, NXC, Lisp, CLIPS, J-FLAP, Matlab, R-Code, PBasic, Python, NNETS, NNNS, AIMA, MySQL, PHP, Oracle, HTML, XML
- Chaired over a dozen student theses and projects (1998–present), along with numerous committees
- Advised dozens of undergraduate senior projects, often utilizing IRIS and ISL resources
- Co-PI for Funded Research of 25+ students (undergrad and grad) over 2003–2007
- Coordinated and Co-advised Service Learning outreach/in-reach opportunities for 50+ students (undergrad, grad, International), at K–12 schools in northern CA, 2003–2009
- Co-Advisor for ISL participation in Internship Initiative with École Polytechnique Universitaire de Marseille's Department de Genie Industriel et Informatique, 12 French students over 2004–2008
- Coordinated ISL training workshops for ECC students on building robotic sensors and circuitry
- Arranged for and accompanied two students to attend the RoboCup US Open 2006
- Curriculum development/co-development/re-development of several AI-related courses
- Advisor of the Network for Women in Computer Science and Engineering (NeWT), 2000–2008
- Advisor of the Society of Women Engineers (SWE), CSUC 1999–2001
- Advisor of Numbers & Bytes, Coastal Carolina University 1996–1998
- Advisor for approximately 30 computer science majors each year 1998–2008

## AWARDS, HONORS, AND GRANTS

- Recipient, **Professional Achievement Honor**, awarded by Faculty Recognition and Support Committee, CSUC 2007
- **Sabbatical Leave** for IRIS formulation and ISL curriculum development, Fall 2005
- Co-PI, **\$346,188** National Science Foundation (NSF) *Major Research Instrumentation (MRI) and Research in Undergraduate Institutions (RUI)* grant (EIA-0321385), for IRIS/ISL robotics lab, research, curriculum, and outreach efforts, 2003–2007
- Co-PI, **\$7,900** National Research Council (NRC) *Collaboration in Basic Science and Engineering (COBASE)* grant, NSF supported, for international collaboration of multi-agent systems, July 2003
- Co-PI, **\$4,000** American Association for the Advancement of Science (AAAS) *Women in International Scientific Cooperation (WISC)* grant, supported by NSF, for preliminary investigative of international collaboration on multi-agent systems, April 2003
- Co-PI, **\$61,057** Hewlett-Packard University Grants Program *Equipment Grant*, for development of a computing lab and resources to support Women in Science and Engineering (WISE), 2000
- PI, **\$5,000** CSUC Graduate, International, and Sponsored Programs *CSU Research Award*, to support research efforts for the Neural Network Ensemble Simulator (NNES) project, 2000
- Co-PI, **\$1,805** Coastal Carolina Educational Foundation *Teaching with Technology Micro Grant* 2005
- *Volunteer Service Award*, Grand Strand Community Against Rape, Database Project 1997
- PI, **\$1,178** Coastal Carolina Faculty Welfare & Development *Professional Activities Mini-Grant Award* 1996

- *Graduate Teaching Assistant Research Sabbatical*, Florida State University, Dept. of Computer Science, Fall 1995
- *Special Projects Teaching Award*, Florida State University, Dept. of Computer Science, 1996
- *Outstanding Graduate Teaching Assistant Award*, Florida State University, Dept. of Computer Science, 1994
- President, Florida State University Chapter of Upsilon Pi Epsilon (UPE), *International Computer Science Honor Society*, 1993–1995
- *Outstanding Graduate Teaching Assistant Award*, Western Illinois University, Dept. of Computer Science, 1992
- *Outstanding Service Award*, Western Illinois University, Student Chapter of the ACM, 1992
- Upsilon Pi Epsilon (UPE), *International Computer Science Honor Society*, inducted in 1991
- Phi Kappa Phi ( $\Phi\text{K}\Phi$ ), *National Honor Society*, inducted in 1992

### PROFESSIONAL ACTIVITIES

- Reviewer for ELSEVIER's *Neural Networks*. ELSEVIER is the world's leading publisher of scientific information. The *Neural Networks* journal is a premier international journal on modeling, present
- Co-owner and Consultant for web/software development initiatives, including small business web site development, race management software, custom media projects, 2004–present
- Project Manager for development and deployment of Ski & Snowboard Enterprise Racing Software (SSERS) for Central I, 2006–present
- Participant, Spirit of a Woman Conference, CSUC, March 2008
- Presenter, AAAI Spring Symposium on Robotics and Robot Venues, Stanford, CA, March 2007
- Co-Drafted proposal and received approval from CSUC Academic Senate for the formation of IRIS March 2006 (see proposal, Senate minutes, and EM 06-04)
- Reviewer, *IEEE Transactions on Neural Networks*, a premier international journal, 1995–2005
- Steering Committee, Program Committee, Session Organizer, and Reviewer, International Conference on Computational Science and Applications (ICCSA'04), Italy, May 2004
- Panel Reviewer, National Science Foundation (NSF), CISE program, March 2004
- Visiting Scientist, the Institute of Computer Science (ICS), Academy of Sciences of the Czech Republic, April and June–August, 2003
- Hosted Visiting Scientist from the Institute of Computer Science (ICS), Academy of Sciences of the Czech Republic, November 2003
- Participant, Oracle 8i: SQL and PL/SQL Oracle University course, Oracle Corporation, January 2002
- Reviewer, *Neural Network World* international journal, published by ASCR, 2002
- Steering Committee, Program Committee, Session Organizer, and Reviewer, International Conference on Computational Science (ICCS'02), held in Amsterdam, April 2002
- Panel Reviewer, National Science Foundation (NSF), ADVANCE program, July 2001
- Panel Reviewer, National Science Foundation (NSF), Gender Equity program, May 2001
- Co-founder, Local Organizer, Program Committee, and Reviewer, First International Conference on Computational Science (ICCS'01), San Francisco, CA, May 2001, in collaboration with the University of Reading, UK, and Queen's University of Belfast
- Session Co-chair, Soft Computing: Systems and Applications, at the First International Conference on Computational Science (ICCS'01), San Francisco, CA, May 2001
- Session Chair, Knowledge Acquisition and Management II, at the International Conference on Information Reuse and Integration (IRI'00), Honolulu, HI, November 2000
- Program Committee, Session Chair, and Reviewer, Neural Network Subsystems, at the International Conference on Artificial Intelligence (IC-AI'00), Las Vegas, NV, June 2000
- Session Chair, Hybrid Methods, Joint Conference on Information Sciences (JCIS), Atlantic City, Feb. 2000

- Invited Speaker, "Crossing the Threshold with Neural Networks", *M\*A\*T\*H\* Colloquium Series*, California State University, Sonoma, CA, March 2000
- Participant, *Embodied Intelligence*, Rodney Brooks, MIT Summer Professional Institute, June 1999
- Invited Speaker, "Constructive Neural Network Ensembles", *Chico Mathematics Colloquium*, California State University, Chico, CA, May 14, 1999
- Invited Speaker, "Optimization and Generalization Issues of Constructive Neural Networks", CSU, Chico, Dept. of Computer Science, April 1998
- Presenter, "Optimization Techniques for Improving Performance and Training of a Constructive Neural Network", *Neural Information Processing Systems (NIPS) '96 - Tricks of the Trade* workshop, Snowmass, CO, December 1996
- Conference Volunteer, *Neural Information Processing Systems, NIPS '95*. Main conference, Denver, CO, December 1995
- Invited Speaker, "Explorations of a Constructive Neural Network for Prediction", Coastal Carolina University, Conway, SC, November 1995

### PROFESSIONAL AFFILIATIONS

- *Phi Kappa Phi (XAX) National Honor Society*, member since 1992
- *Upsilon Pi Epsilon (UPE), International Computer Science Honor Society*, member since 1991
- *Natural Resources Defense Council (NRDC)*, member since 2009
- *Institute of Electric and Electronic Engineers (IEEE)*, former member
- *Association for Computing Machinery (ACM)*, former member
- *Association for the Advancement of Artificial Intelligence (AAAI)*, former member
- *International Conference on Computational Sciences (ICCS)*, co-founder & former committee member

### PEER-REVIEWED PUBLICATIONS

N. Bhatnagar, B.A. Juliano, and **R.S. Renner**, "AnQL: A Query Language for Annotation Documents," *International Journal of Computer Science*, 2(1), pp.1-8, World Academy of Science, Engineering, and Technology (www.waset.org), ISSN: 1306-4428, 2007.

**R.S. Renner** and B.A. Juliano, "Integrating Service Learning with Undergraduate Robotics Research," *Proceedings of AAAI Spring Symposium on Robotics and Robot Venues: Resources for AI Education, SS-07-09*, pp. 133-138, Stanford, CA, ISBN: 978-1-57735-318-8, 2007.

B.A. Juliano and **R.S. Renner**, "An Undergraduate Course in Robotics and Machine Intelligence," *Proceedings of AAAI Spring Symposium on Robotics and Robot Venues: Resources for AI Education, SS-07-09*, pp. 74-79, Stanford, CA, ISBN: 978-1-57735-318-8, 2007.

B.A. Juliano and **R.S. Renner**, "Robotics in the Classroom: Providing Robotics Equipment to Support Intelligent Systems Curricula," poster in *Proceedings of the Twentieth International Florida Artificial Intelligence Research Society Conference*, Key West, FL, pp.333-334, AAAI Press, Menlo Park, CA, 2007.

N. Bhatnagar, B.A. Juliano, and **R.S. Renner**, "Data Annotation Models," *Third International Conference on Intelligent Computing and Information Systems (ICICIS 2007)*, sponsored by ACM Special Interest Group on Artificial Intelligence and Special Interest Group on Management Information Systems, Cairo, Egypt. 2007.

N. Bhatnagar, B.A. Juliano, and **R.S. Renner**, "Data Annotation Models and Annotation Query Language," *Proceedings of Fourth International Conference on Knowledge Mining*, World Academy of Science, Engineering, and Technology, volume 21, pp.440-445, Bangkok, Thailand, ISSN: 1307-6884, 2007.

V. Alexandrov, J. Dongarra, B. Juliano, **R.S. Renner**, C.J.Tan, eds., "Computational Science – ICCS 2001," *Lecture Notes in Computer Science, Volume #2073 & 2074*, ISBN: 0302-9743 / 3-540-42233-1, Springer-Verlag, 2001.

S. Vasupongayya, **R.S. Renner**, and B.A. Juliano, "Model Generation of Neural Network Ensembles Using

Two-Level Cross-Validation". Published in *Lecture Notes in Computer Science #2074: Proc. International Conference on Computational Science*. Springer-Verlag, pp.943-951, May 2001.

S.J. Sheel, D. Vrooman, **R.S. Renner**, S.K. Dawsey, "A Comparison of Neural Networks and Classical Discriminant Analysis in Predicting Students' Mathematics Placement Examination Scores," Published in *Lecture Notes in Computer Science #2074: Proc. International Conference on Computational Science*. Springer-Verlag, pp.952-957, May 2001.

**R.S. Renner**, "A Framework for Integrating Ensemble Classifiers and Scientific Database Technologies," invited paper, *Proc. International Conference on Information Reuse and Integration*, a publication of the International Society for Computers and their Applications (ISCA), Honolulu, HI, ISBN: 1-880843-36-6, Nov 2000.

H. Arabnia, B. Juliano, **R.S. Renner**, et.al eds., *Proc. International Conference on Artificial Intelligence (IC-AI'00)*, volume 1 & 2, CSREA Press, Las Vegas, NV, June 2000.

**R.S. Renner**, "Systems of Ensemble Networks Demonstrate Superiority over Individual Cascor Nets," *Proc. International Conference on Artificial Intelligence (IC-AI'00)*, Las Vegas, NV, pp.367-373, June 2000.

S.J. Sheel, **R.S. Renner**, S.K. Dawsey, "Alternatives to Math Placement Exams: A Look at Discriminant Analysis, Neural Networks, and Ensembles of Networks," *Proc. International Conference on Artificial Intelligence (IC-AI'00)*, Las Vegas, NV, June 2000.

**R.S. Renner** and R.C. Lacher, "Combining Constructive Neural Networks for Ensemble Classification," *Proc. Joint Conference on Information Sciences (JCIS)*, Atlantic City, NJ, pp.887-891, Feb 2000.

**R.S. Renner**, R.C. Lacher, and B.A. Juliano, "A Simulation Tool for Managing Intelligent Ensembles," *Proc. International Conference on Artificial Intelligence (IC-AI '99)*, Las Vegas, NV, pp.578-584, June 1999.

B.A. Juliano and **R.S. Renner**, "Fuzzy Relational Methods and Urbanistics Data," *Proc. International Conference on Artificial Intelligence (IC-AI '99)*, Las Vegas, NV, pp.585-590, June 1999.

**R.S. Renner**, "Improving Generalization of Constructive Neural Networks Using Ensembles," PhD Dissertation, Florida State University, Dept. of Computer Science, Tallahassee, Florida, March 1999.

C.J. Kacmar, **R.S. Renner**, J. Carey, "Exploring a New Technology for Experimental Research", Western Academy of Management, (WAM), Santa Fe, New Mexico, March 1994.

**R.S. Renner**, "Hypertext: A Logical Approach to Experimental Management Systems," Master's Thesis, Western Illinois University, Dept. of Computer Science, Macomb, Illinois, July 1993.

## TECHNICAL REPORTS

**R.S. Renner**, "Language, Intelligence, and Computation: Formal Course Plan and Assessment," internal report submitted to General Education Advisory Committee, Spring 2005.

**R.S. Renner**, "Computer Science Department Laboratory Plan 2004–2005," internal report submitted to College of ECC, Fall 2004.

**R. Renner** and R. Neruda, "A Foundational Framework for the Integration of Heterogeneous Agents," technical report submitted to the COBASE division of the *National Research Council*, April 2004.

**R. Renner** and R. Neruda, "Formulating a Heterogeneous Agent Architecture for Modeling of Complex Systems," technical report submitted to the WISC division of the *American Association for the Advancement of Science*, May 2003.

B.A. Juliano, **R.S. Renner**, and M. Callan, "Progress Report: Seeking Potential Grants and Collaborative Research Activities in the Washington, DC Area," internal report, College of ECC, March 2001.

## SERVICE AND CONSULTING

### DEPARTMENT SERVICE :

- chaired, Department Laboratory Committee, Curriculum Committee, Strategic Planning Committee
- member, Dept. Hiring Committee and Personnel Committee
- Co-Founder, Outreach Director and Board member, Institute for Research in Intelligent Systems (IRIS)

## OUTREACH EFFORTS:

- Director, IRIS SumoBot Competition, CSUC MESA DAY, March 2009
- Led weekly Robotics Labs at Orland High School and Williams High School, September – December 2008
- Director, IRIS/MESA Robotics Kickoff, September 2008
- Collaborated with MESA Schools to bring Robotics Curriculum to north-state high schools, Fall 2008
- Director & Head Coach, ISL Summer Robotics Camp for Junior High Girls, sponsored by NSF, CSUC, ECC, CSCI, and IRIS, 2004–2006
- Co-Director, ISL K-12 workshops and demonstrations, 2004–2007
- Co-Director, ISL participation in: Preview Day, Transfer Day, Getting Connected, 2004–2006
- Co-Director, ISL participation in: Minds-in-Motion, Girl Scout Day 2004–2006

## COMMUNITY VOLUNTEERISM:

- Statistician, California Nevada Ski and Snowboard Federation, Central I, 2005–present
- Webmaster/developer, California Nevada Ski and Snowboard Federation, Central I, (SSERS) 2007–present
- Anthem Singer and Event Support: Chico Air Show, Stover Celebrity Golf Classic, Chico Canine Carnival, 2008 and 2009
- Event Volunteer, Dixon Dog Show, Sacramento Valley Boxer Club (SVBC) 2007–present
- Division Coordinator, California Nevada Ski and Snowboard Federation, Central I, 2005–2007
- Head Coach, Pleasant Valley High School Ski and Snowboard Team, 2003–2005
- Volunteer, Bidwell Jr High & Pleasant Valley High School 1998–2006
- Volunteer, Shasta Elementary 1998–2000
- Project Manager, database design and development, Boys & Girls Club, Chico, CA, 1998
- Project Manager, database design and development, Grand Strand Community Against Rape (GSCAR), Myrtle Beach, SC, 1997
- Organizer of Non-Profit, Parent Music Club, Carolina Forest Education Center, Conway, SC, 1997

## **RESEARCH INTERESTS**

Knowledge Discovery & Acquisition, Data Mining, and Databases  
Machine Learning, Intelligent Systems, Robotics  
Simulation, Modeling, and Experimental Analysis  
Artificial Neural Networks and Genetic Algorithms  
Heterogeneous Multi-Agent Systems  
Cognition and Cognitive Modeling (social issues, implications, and challenges)  
Sustainable Computing

## **APPLICATION AREAS OF INTEREST**

Intelligent Decision Support Systems  
Content Management Systems  
Public & International Policy & National Security  
Sustainability / Green Technologies / Environment / Ecology  
Search & Rescue  
Medical / Health / Well-Being  
Sociological Studies / Humanitarian Efforts

## **REFERENCES - AVAILABLE UPON REQUEST**