

Yan Wang

323 Solano Dr. SE
Albuquerque, NM 87108

(505) 255-8785(h)/277-2285(w)
yanwang@unm.edu

OBJECTIVE

Seeking a challenging position (full time/intern) in the area of image processing, pattern recognition, data mining and machine learning.

EDUCATION

University of New Mexico (UNM) PhD in Electrical Engineering, expected May 2004	Albuquerque, NM GPA: 4.0/4.0
Harbin Institute of Technology (HIT) Master in Electrical Engineering, July 2001 Bachelor in Electrical Engineering, July 1999	Harbin, China GPA: 3.9/4.0 GPA: 4.0/4.0

SKILLS

- Three years' research experience in image processing, pattern recognition and soft computing with statistical and intelligent algorithm design and implementation.
- Three years' experience in embedded microprocessor (8051, 8096, TI TMS320 DSP, etc) application design, firmware and hardware design
- Strong in mathematical, statistical analysis and signal processing
- Proficient in C/C++, Java, HTML, Assembly, Matlab.
- Familiar with Windows, Window NT, Unix, Linux

EXPERIENCE

Research Intern, EEG Lab, UNM (September 2003 – Present)

- Single Trial Event-Related Potentials (DARPA Project)
Discrimination and prediction using blind source separation (SOBI) components between the high and low cognitive loads in a real word task (WCT) or left finger, right finger and both in the somatosensory and visual stimulation. A temporal template was constructed and neural network algorithms were applied. Based on EEGLAB and Neural Network Toolboxes TrialClassification Toolbox was implemented.

Research Assistant, Autonomous Control Engineering Center, UNM (August 2001 – Present)

- Prognostic and Diagnostic System for Airborne Laser (ABL) Program (MDA STTR Project)
A library of predictive algorithms was designed for fault prognosis and diagnosis based on advanced pattern recognition techniques. Intelligent algorithms based on neural network, self-organizing map, fuzzy logic and gated expert were developed and data mining techniques were used in the library. It is tested in the chiller system, laser-pointing system and to be applied in the ABL system.
- Multispectral Landsat Image Classification
Rio Rancho Landsat 7 ETM+ multispectral images were collected and preprocessed with ERDAS. Ground truth data were generated using seed growing method combined with fieldwork and expert knowledge. Statistical (maximum likelihood) and intelligent (neural network, fuzzy logic and fuzzy neural network) algorithms were developed and compared. Confusion matrix was used to evaluate the classification accuracy.
- Magnetic Resonance Imaging (MRI) Segmentation
Bayesian, EM and Fuzzy C-Mean algorithms were applied in MRI images for the brain tissue segmentation to assist brain disease diagnosis.

- Virtual Laboratory (VLAB) for Multi-Agents (NASA Project)
VLAB simulation environment was designed and developed using Java and Discrete Event Systems (DEVS) for robotic systems. Soft computing technique was used in robotic control.
- Potential Industrial Energy Saving Using Robotic Control (DOE Project)
Current status of robotic control applied in industry energy saving was investigated and future development techniques were proposed.

Research Assistant, Power Electronics & Electric Driving Center, HIT, China (November 1998 – July 2001)

- Unified Power Quality Conditioner (Huawei Technologies Company Project)
Serial three phases AC voltage regulator and parallel active power filter were designed respectively to regulate AC voltages, compensate reactive and eliminate harmonic currents in the power system. 380V, 10KVA prototype system was developed using IGBT and tested. Firmware/hardware design and TI TMS320 DSP control were implemented. LCD user-friendly interface was set up based on 80C51, which also communicates with upper DSPs.

PUBLICATIONS

- Y. Wang, Mo Jamshidi, "Multispectral Landsat Image Classification Using Fuzzy Expert Systems", World Automation Congress, Seville, Spain, June 2004
- Y. Wang, Mo Jamshidi, Stan Morain, et al, "Multispectral Landsat Images Classification Using a Data Clustering Algorithm", International Society for Photogrammetry and Remote Sensing, Istanbul, Turkey, July 2004
- Francisco Benito, Guillermo A. Vera, Yan Wang, et al "Control Design for Diagnostic and Prognostic of a Hardware Systems", FUZZ-IEEE, Budapest, Hungary, July 2004
- A.C. Tang, C.J. McKinney, M.T. Sutherland, L. Parra, J.Y. Liu, Y. Wang, et al, "Gauging Human Processing Load and Predicting Performance Using SOBI EEG-Components", DARPA Conference, Jan. 2004
- M. Jamshidi, S. Sheikh-Bahaei, J. Kitzinger, P. Sridhar, S. Beatty, S. Xia, Y. Wang, et al, "V-Lab - Distributed Intelligent Discrete-Event Environment for Autonomous Agents Simulation", Intelligent Automation and Soft Computing, Vol. 9, No. 3, pp.181-214, 2003
- M. Jamshidi, S. Sheikh-Bahaei, J. Kitzinger, P. Sridhar, S. Xia, Y. Wang, et al, "A Distributed Intelligent Discrete-Event Environment for Autonomous Agents Simulation" Chapter 11, Applied System Simulation Methodologies and Applications, Kluwer Publications, 2003.
- Jamshidi, M., Sheikh-Bahaei, S., Kitzinger, J., Sridhar, P., S. Xia, Y. Wang, et al, "V-Lab@ - Virtual Laboratory for Autonomous Agents", Magazine article, Modeling and Simulation Magazine, 2003.
- Y. Wang, D. G. Xu, "Effective Detection of Reactive Harmonic Current", Conference of Automation and Application, China, 2001
- Master thesis, "Research on Detection of Reactive and Harmonic Current and Active Shunt Power Filter", HIT, 2001.
- Bachelor thesis, "Three Phase AC Serial Voltage Regulator", HIT, 1999

PROFESSIONAL ACTIVITIES

- Reviewer: AutoSoft Journal

HONORS AND ACTIVITIES

- Outstanding Graduate Student in EECE at UNM, Fall 2002
- Zhongxing Scholarship (2000), Haiwang Scholarship (1997), Cwung Kun Scholarship (1996), Undergrad Scholarship (1996-2000) at HIT, China
- Outstanding Graduate Medal (1999), Prominent Student Leader (1997), Model Student (1996-2000) at HIT, China