Resume' of Hung-Han Chen

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Experience

12/2006 - current **Blue Cross Blue Shield of Florida** **Jacksonville, FL**
Senior Research Scientist

- Building a 3-month inpatient risk model for 2.4 million members using one year of historical claims and comparing the result with the risk score from Ingenix Impact Pro predictive modeling software. The model built by NeuroSequences Selection has 39% of positive predicted value and the commercial software is achieving 20% when the same amount of members was selected.

- Building a recurring inpatient model to identify the high-risk members with only authorization of hospital admission and Pharmacy claim history. The goal is to make this model operational in real time so that an early intervention can help the members stay healthy longer.

- Performing data manipulation and analytic tasks for various departments, including hospital quality program and member care and wellness programs; SAS/BASE, SAS/SQL, SAS/MACRO and SAS/STAT are used as reporting and analytical tools.

07/2008 - current **Graphion LLC** **Jacksonville, FL**

- Developing nonlinear sophisticated modeling techniques that are able to model complex functions. They can be applied to problems of prediction, classification or control in a wide spectrum of fields for predictive analytics including member and behavior profiling.

- Developing an innovative method of predictive modeling with MLP neural networks. This new method, *NeuroSequences Selection*, adds clustering analysis and invariant characteristics to supervised training of MLP neural networks. The predictive models built by this method have outperformed commercial risk score software and statistical algorithms on several stratification applications.

- Solving the issue of local minima for Backpropagation learning of MLP neural networks with an innovative search method, “Retreat and Turn”. Developing new method to prevent overfitting by monitoring MLP’s free parameters. A fast training method is also developed to improve the speed of MLP training.

01/2000 - 11/2006 **LifeMasters (Medical Scientists, Inc, Boston, MA)** **S. San Francisco, CA**
Senior Scientist

- Built predictive models for actuarial and case management application of healthcare and insurance industries with various statistical and artificial intelligence tools. Specific outcome was targeted to meet client’s best interests.

- Designed and managed the process of sophisticated machine learning tools (neural networks, induced decision trees) to solve data-mining problems. Participated in client brainstorming sessions and in-house lectures for clients.

- Designed and implemented automatic feature selection on healthcare data on SQL server 2005 based upon the coding of ICD-9, CPT-4, and NDC.

09/1998 - 11/1999 **CYTEL Systems Inc.** **Hudson, MA**
Member of Technical Staff

- Developed advanced ground vehicle classification systems using wavelet/neural network processing of acoustic emissions. Signal processing algorithms was used to eliminate acoustic distortion caused by the soundboard, speaker, and microphone. Optimal wavelet decomposition was identified for use in extracting robust, multidimensional features from the acoustic emission. A neural network used these wavelet features to classify battle vehicles.

- Programmed Continuous Wavelet Transformation (CWT), feature extraction, and multilayer neural network components with Visual C++, MFC, and multithreading.

09/1994- 12/1997 Neural Nets & Image Processing Lab, UTA Arlington, TX
Research Associate

- Researched for Bailey Network Management of Sugarland, Texas: Developed a neural network power load forecasting system for electric utilities. This system is commercially available, uses neural network software developed during my Ph.D. research, and is written in FORTRAN on NT platform.

- Researched for Bailey Network Management of Sugarland, Texas: Developed a neural network inflow forecasting system for reservoirs feeding power-generating dams. Inflow is forecast for up to a week in the future.

- Consulted for Innotech of Arlington, Texas. Developed software and algorithms for segmenting images of character strings into individual character images, for later recognition. This software will go into a commercial system for automatic reading of standardized business forms.

- Consulted for Abbot Labs: Developed algorithms and software to classify the aspiration of patient medical samples, as successful or unsuccessful. The software has been incorporated into a commercial product.

Education

Ph.D., Electrical Engineering, University of Texas at Arlington

- Dissertation: "Neural Network Training and Pruning Utilizing Multiple Regressions".
- Coursework: Digital Image Processing, Nonlinear Image Processing, Digital Radio Transmission, Modern Telephony, Statistical Signal Processing, Digital Communication, Robotic Control, Neural Networks, and Neural & Cognitive Modeling.

M.S., Electrical Engineering, West Coast University, Los Angeles, CA

- Thesis: "Comparison of Various Receiver Structures in Digital Communications"
- Research on "Neural and Fuzzy Systems in Machine Learning"
- Coursework and projects: Detection of Signals in Noise, Error Control Codes, Kalman Filtering, and Advanced Artificial Intelligence Practicum.

Patent

- Patent US 6,917,926 "Machine Learning Method" (Medical Scientists, Inc)

Publications

- Hung-Han Chen, "Monitoring MLP's Free Parameters for Generalization," accepted by *The 8th WSEAS International Conference on ARTIFICIAL INTELLIGENCE, KNOWLEDGE ENGINEERING and DATA BASES (AIKED'09)*.

- Hung-Han Chen, "The Turning Points on MLP's Error Surface", F. Sun et al. (Eds.) ISNN 2008, Part I, LNCS 5263, pp. 512-520, 2008.

- Hung-Han Chen and M.T. Manry, "NeuroSequences: A Method to Improve Neural Networks in Healthcare Predicting Modeling," *16th Federal Forecaster Conference*, Washington DC (in press, 2008)

- Hung-Han Chen and M.T. Manry, Hema Chandrasekaran,"A Neural Network Training Algorithm Utilizing Multiple Sets of Linear Equations," *Neurocomputing* (25)1-3 (1999) pp. 55-72

Personal

US Citizen since August 2008.

References available on request