

Jinhao Chen

Mail Address: Room 718, Mingde Park NO. 8,
Sun Yat-sen University,
Guangzhou Higher Education Mega Center,
Guangdong, China

E-mail: cjh10644@hotmail.com
Website: <http://jinhaochen.weebly.com>

EDUCATION

SUN YAT-SEN UNIVERSITY, B. E. in Automation Jun. 2012
GPA: Major 3.6/4.0 (3.6/5.0), Overall 3.6/4.0 (3.5/5.0)

EXPERIENCE

Research Assistant in Neural Network Laboratory Jul. 2011 to Present

Research Focus #1: weights-and-structure-determination theory of neural network and its application on massive data mining (supported by the Specialized Research Fund for the Doctoral Program of Institutions of Higher Education of China under project NO. 20100171110045)

- ✧ Used Legendre polynomials to construct a novel 2-input neural network and developed an algorithm to determine its weights and structure
- ✧ Compared the prediction abilities of single-input neural network activated by different polynomials, and used the neural network activated by Chebyshev Polynomials of Class I to study and predict the world population

Research Focus #2: new methods, models and theoretical analysis of neurodynamics for time-varying problems solving (supported by the National Natural Science Foundation of China under Grants NO. 61075121)

- ✧ Proposed a group of 1-step-ahead numerical differentiation formulas and corresponding optimal-step formulas

Research Focus #3: service-task-oriented rapid machine vision and intelligent servo control (supported by the National Natural Science Foundation of China under Grants NO. 60935001)

- ✧ Used Zhang dynamics & gradient dynamics method to solve the tracking-control problem of inverted pendulum system model

University Representative for Domestic Contest for ABU Robocon Oct. 2010 to Jun. 2011

Competition Mission: designed and constructed 1 manual-control robot and 2 automatic robots

- ✧ Used Solidworks to design main body framework of the robots and built them up
- ✧ Designed circuit for photoelectric sensors and encoders
- ✧ Designed algorithm for MC9S12XS128 microcontroller to process the information from gyroscope

Team Leader for Guangzhou Intelligent Vehicle Competition Mar. 2010 to Jul. 2010

Competition Mission: designed and constructed an automatic car with the capability of running along a winding path

- ✧ Designed a more efficient drive circuit for the motors
- ✧ Designed the algorithm for AT89C51 Single-Chip Microcomputer to process the information from sensors and control the motors

CONFERENCES ATTENDED

IEEE International Symposium on Industrial Electronics, Hangzhou, China

May 2012

SELECTED PUBLICATIONS

Journal Papers (6 published/in press and 1 under review):

- [1] Yunong Zhang, **Jinhao Chen**, Wenchao Lao, Zhijun Zhang, Yao Chou. Comparison on Prediction Abilities of Single-Input Neuronets Activated by Different Polynomials, (in press), *Journal of System Simulation* (SCOPUS & CSCD & ISTIC indexed, IF: 0.663)
- [2] Yunong Zhang, **Jinhao Chen**, Yehong Lin. Scientific Analysis of Mathematical Notation for Positive/Negative Definite or Semi-Definite Matrices, *China Science and Technology Information*, no. 6, pp. 52-53, Jun., 2012
- [3] Yunong Zhang, Yao Chou, **Jinhao Chen**, Zhijun Zhang, Lin Xiao. Presentation, Error Analysis and Numerical Experiments on A Group of 1-Step-Ahead Numerical Differentiation Formulas, *Journal of Computational and Applied Mathematics* (SCI indexed, IF: 1.112), vol. 239, pp. 406-414, Feb., 2013
- [4] Yunong Zhang, Mingming Li, **Jinhao Chen**, Wenchao Lao, Huarong Wu. Breaking and solving the problem of Runge phenomenon by coefficients-and-order-determination method, (in press), *Computer Engineering and Applications* (CSCD & ISTIC indexed, IF: 0.561)

Conference Papers (3 published/in press and 1 under review):

- [5] Yunong Zhang, **Jinhao Chen**, Dongsheng Guo, Yonghua Yin and Wenchao Lao. Growing-Type Weights and Structure Determination of 2-Input Legendre Orthogonal Polynomial Neuronet, *In Proceeding of IEEE International Symposium on Industrial Electronics* (EI Compendex indexed), pp. 852-857, Hangzhou, China, May, 2012
- [6] Yunong Zhang, Wenchao Lao, Long Jin, **Jinhao Chen** and Jinrong Liu. Growing-Type WASD for Power-Activation Neuronet to Model and Forecast Monthly Time Series, (under review), *IEEE International Conference on Control & Automation* (EI & ISTP indexed), Jun., 2013

AWARDS & HONORS

Best Paper Award for graduation thesis	May 2012
Basketball Match Champion in School of Information Science and Technology	Apr. 2012
First-class Scholarship of Sun Yat-sen University	Oct. 2011
Zhentai First-class Scholarship	Oct. 2011
The 22nd Award of the Domestic Contest for ABU Robocon 2011	Jun. 2011
Outstanding Volunteer of Asian Games (by Asian Games Organizing Committee)	Dec. 2010
Third place in the Guangzhou Intelligent Vehicle Competition	Jul. 2010
Third-class Scholarship of Sun Yat-sen University	Oct. 2009

SCORES

GRE	Verbal Reasoning 147, Quantitative Reasoning 167, Analytical Writing 3.0
TOEFL	Reading 24, Listening 21, Speaking 19, Writing 22, Total 86

PROGRAMMING LANGUAGE

C, C++ (MFC included), C#, MATLAB, Assembly Language, LaTeX