

Pan Baoxiang

PRESENT ADDRESS

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EDUCATION

Institute of Hydrology and Water Resources, Tsinghua University, Beijing
Master of Engineering (Candidate), Hydrology and Water Resources, June 2012
Concentration in Hydrological Model Diagnosis and Stochastic Hydrological Analysis
G.P.A. 3.5/4.0

School of Water Resources and Hydropower Engineering, Wuhan University, Wuhan
Bachelor of Engineering, Hydrology and Water Resources, June 2012
Minors in Architecture
G.P.A. 3.2/4.0

CURRICULUM VITAE

Bachelor Curriculum unavailable temporarily. I will ask my classmates to get me a copy in Wuhan and deliver it to you as soon as it is done.

TSINGHUA UNIVERSITY ACADEMIC TRANSCRIPT							
Student Name:	Pan Baoxiang	Gender	Male	Student No.:	2012210160		
Student Type :	Graduate	Date of Admission	September, 2012	School/Department:	Department of Hydraulic Engineering		
Subject:	Hydraulic Engineering						
Course Number	Course Title	Credit	Degree Course	Grade	Year-Semester	Remark	
60420094	Applied Stochastic Processes	4	Y	72	2012-Autumn		
60640012	English (First Foreign Language)	2	Y	Exemption	2012-Autumn		
60680012	Theory and Practice of Socialism with Chinese Characteristics	2	Y	81	2012-Autumn		
70040083	Advanced Hydrology	3	Y	95	2012-Autumn		
70040322	Hydrometeorology	2	Y	85	2012-Autumn		
80040163	Ecohydrology	3	Y	95	2012-Autumn		
60680021	Introduction to Dialectics of Nature	1	Y	80	2013-Spring		
60420044	Numerical Analysis (A)	4	Y	94	2013-Spring		
70040074	Theory and Application of Fluid Dynamics in Porous Media	4	Y	87	2013-Spring		
69990021	Literature Review and Thesis Proposal	1	Y	91	2013-Spring		
80460012	Earth System Science Seminar	2	N	85	2012-2013-1		
Y0040122	Advanced Hydrology and Water Resources	2	N	Pass	2012-2013-2		
Total Credits: 30		Degree Course Credits: 26					

RESEARCH WORK

My major research area is within the field of stochastic hydrology and model evaluation, or put it another way, is to apply the ideas in probability theory, statistics, information theory and system

theory to study the distribution of water at different spatial and temporal scales. The specific works I did are as follows:

- Comparison of Parameter Optimizing Algorithms (Gene Algorithm, Particle Swarm Optimization, Shuffled Complex Evolution)
- Conceptual Hydrological Model Comparison
- Streamflow Simulation Using ARMA
- Precipitation Simulation using Compound Poisson Process
- Theoretical and Numerical Forward-Reverse Mann-Kendall Mutation Test
- Stochastic Soil Moisture Modelling Using Chapman-Kolmogorov equation
- Temporal and Spatial Hydrological Scaling, a Stochastic Perspective
- Hydrological Model Diagnosis By Mapping the Hydrological Pattern to Information Space

The theme of my graduate proposal is to make a scale analysis of watershed hydrologic simulation based on stochastic soil moisture model. With a compound poisson process precipitation stimulation, I try to construct a basic stochastic description of the hydrological process, in which the effort of including new observations and specifying detailed processes could be evaluated in a Bayesian view. Traditional distributed hydrological models take the philosophy of stepwise integration for the irregular meteorological condition and complex constitutive function controlling the movement of liquid, which easily lose their power in capturing a general hydrological pattern. In this research, a stochastic function describing the temporal and spatial pattern of the watershed is brought out and loaded in the basic function, providing a more theoretical beautiful result. The outcome is examined by measuring the mutual information between the inputs, outputs and observations of the modelling basin at different scales.

INTERESTS

I grew up interested in philosophy. The great works written by Kant, Nietzsche and Spinoza inspired me to clarify and seek for answers of the most important questions of human life. Many questions implode and collapse after an examination, leaving some basic elements and structures as the flesh and bones. Now the interests transfer into computer programming that execute and inspect these philosophical thoughts. I could not tell the ongoing bombs in my thoughts when reading *The Structure and Interpretation of Computer Programming*, *Gödel, Escher Bach-An Eternal Golden Braid* and *Probability, the Logic of Science*. I thrilled after executing the ideas in the language of scheme. Doing A.I. research work could better satisfy my ambition than studying hydrology, I should never let go of this opportunity.

Besides, I am interested in these following items.

- Sketching



- Basketball



SKILLS

- Computer Skills
 - Functional Programming: scheme
 - C
 - MySQL Database
 - L^AT_EX
 - Algorithm Analysis
 - Basic Linux Operation
 - A little Knowledge of Mathematica
 - Windows & Its Popular Software
- Mathematics
 - Analysis
 - Probability Theory
 - Linear Algebra
 - Stochastic Process
 - Numerical Analysis

The math score of my graduate entrance exam is 149/150.

- English

GRE

Verbal	Quantity	Writing	Total
152	170	3.5	322

TOEFL

Reading	Listening	Speaking	Writing	Total
27	25	19	25	96

REFEREES RECOMMENDED

Name	Cong Zhentao	Xiong Lihua
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Faculty	Institute of Hydrology and Water Resources	Department of Hydrology and Water Resources
School	Tsinghua University	Wuhan University
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GITHUB

<https://github.com/morepenn>