

Jiehua Chen

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Education

Stanford University

Ph.D. Statistics

Stanford, CA

09/2003 - 5/2008

- Thesis: *Regression Models with Spatially Correlated Errors: Applications to Urban Core Growth in China*. Developed new techniques in spatial-temporal modeling to study the process of urbanization in three coastal provinces of China from 1988 to 2004.

Stanford University

M.A. Economics

Stanford, CA

09/2005 - 5/2008

Tsinghua University (rank: 1/55)

B.Sc. Mathematics and Physics, *summa cum laude*

Beijing, China

08/1998 - 06/2002

Research Interests

I am interested in impact evaluation, particularly pertaining to development projects. This includes evaluation design and related statistics methodology research topics, such as causal inference, random experiment design, random sampling, survey design, survey weighting regression, spatial-temporal modeling, and multilevel modeling.

Work Experience

African Soil Information Service (<http://www.africasoils.net>)

Consulting Statistician

Arusha, Tanzania

1/2011 - 6/2011

- Developing optimal sampling algorithms for selecting locations for soil quality monitoring for different countries.
- Working on estimating soil digit maps for Africa to map soil conditions, set a baseline for monitoring changes, and provide options for improved soil and land management based on existing world soil information.

UN Development Programme

Consulting Statistician

New York, NY

6/2010 - 11/2010

- Evaluating the impact of health, education, and infrastructure-related interventions introduced by the United Nations Millennium Village Projects conducted in fourteen African countries.
- Current two main projects related to the evaluation: Nutrition status changes in the villages and cost-effect analysis of the water pipe projects.

Statistics Department and the Earth Institute, Columbia University

Postdoctoral Fellow and Term Assistant Professor

New York, NY

07/2008 - 06/2010

- Working with the Millenium Village Projects on a field random experiment about information diffusion for fuelsaving woodstoves in Uganda. Designed a new kind of randomized experiment, and implemented a new propensity score weighting method.
- Developed machine learning algorithms for identifying households from satellite images of the African landscape. Deduced information will be used to optimize placement of energy utilities and layout of roads.

School of Social Work and IRI, Columbia University

Statistics Consultant

New York, NY

07/2009 - present

- Consultant for index insurance project in Ethiopia conducted by IRI (International Research Institute for Climate and Society of Columbia University). Simulated rainfall from historical data to help determine rainfall index insurance prices.
- Consultant for evaluation of interventions to alcohol-abusing women engaging in sexual risk behaviors in Mongolia. Analyzed effects of these interventions on safe sex usage, family violence, and alcohol abuse.
- Consultant for a project in Mali involving the adoption of Jatropha, a biodiesel-producing plant. Designed, conducted, and analyzed survey for studying socioeconomic, financial, and geographic factors related to jatropha adoption.

World Bank, Beijing Office

Economics Research Intern

Beijing, China

07/2005 - 09/2005

- Investigated the problem of socioeconomic inequality in China. Advised by Bert Hofman, chief of the Economics Unit at Beijing.

Hong Kong University of Science and Technology

Research Assistant

Hong Kong, China

07/2003 - 09/2003

- Studied applications of statistics in management science. Advised by Professor Samuel Wong.

The University of Hong Kong, Mathematics Department

Research Assistant

Hong Kong, China

02/2003 - 07/2003

- Researched weighted Tabu search clustering for decision making. Algorithms implemented in C. Advised by Professor Michael Ng.

Countries Worked In

China, Hong Kong, US, Uganda, Tanzania, Slovenia, and the list is getting longer.

Presentations

“A Rao Score Test for Spatial Correlation”, Spatial Econometrics Conference 2007

“ A Spatial-temporal Modeling of Urbanization in East-coastal Provinces in China”, JSM 2007.

“Fuel Efficient Wood Stoves Testings in Sauri Kenya”, the Colloquium of the Earth Institute, Columbia University, 2008.

Teaching Experience

Columbia University
Statistics Professor

New York, NY
Autumn 2008-2009

- Taught graduate-level statistics course Time-Series Analysis (W4437). Topics included ARMA and ARIMA models, ACF, forecasting, parameter estimation, unit root tests, and spectral analysis.
- Taught graduate-level statistics course Multilevel Modeling (W4330). Topics included multilevel linear modeling, multilevel general modeling, model interpretation and diagnostics.

Stanford University
Statistics Teaching Assistant

Stanford, CA
2003-2008

- Served as TA for numerous statistics courses, including stochastic processes, markov chains, and the theory of statistics.
- During 2006-2007 spring quarter, served as head teaching assistant for Professor Paul Switzer’s high-enrollment basic statistics course at Stanford, STAT 60. Managed team of teaching assistants and graders, held regular office hours, administered grading assistants, graded exams.

Publications

Regression models with spatially correlated residuals: applications to urban core growth in China.
Chen, Jiehua. PhD Thesis, Statistics Department, Stanford University.

Comparative analysis of REML and ML estimation in spatial statistics. Jiehua Chen. Joint Statistical Meeting Proceedings, August 2007.

Rao-score test for spatial correlation. Jiehua Chen and David Siegmund. Submitted to Journal of Statistical Planning and Inference.

Infill asymptotics with unknown mean function. Jiehua Chen. Submitted to Statistica Sinica.

Testing institutional biomass cookstoves in rural Kenyan schools for the millennium villages Projects.
Jiehua Chen, Edwin Adkins, and Vijay Modi. Energy Policy, **14**, 3, 186–193 .

Evaluation of random interventions to alcohol-abusing women engaging in sexual risk behaviors in Mongolia. Collaborators: Susan Witte. Submitted to AIDS and Behavior.

Adjusting survey weights using multilevel modeling: a case study of jatropha adoption in Mali.
Collaborators: Matt Basinger. Submitted to Agro-Forestry Systems.

Work in Preparation

A random experiment about improved-stove information seeding in Uganda. Collaborators: Macartan Humphreys and Vijay Modi.

Detecting houses in remote sensing maps of Millennium villages in Africa. Collaborators: Roy Han.

Nutrition study in Millennium Village Projects after three years. Collaborators: Roseline Remans et al.

Reducing recent intimate and paying partner violence among women who exchange sex in Mongoli.
Collaborators: Susan Witte.

Work in Progress

Rainfall simulation combining remote sensing data and weather station data. Collaborator: Tufa Dinku.

Regression models with survey weights. Collaborator: Andrew Gelman.

Computer, Verbal Skills

Programming Languages: R, Winbugs, STATA, MATLAB, Perl

Operating Systems: Windows 95/98/2000/XP, Mac OS X

Verbal: Perfect fluency in both English and Mandarin Chinese. Conversational fluency in Cantonese.

Coursework

- **Statistics**

estimation, statistical inference, hypothesis testing, parametric and nonparameric models, linear regression, analysis of variance, theory of probability, asymptotics, large deviation theory, bootstrapping, time series, Bayesian methods, spatial statistics

- **Mathematics**

single and multivariable calculus, differential equations, topology, real and complex analysis, group theory, convex optimization

- **Economics**

econometrics, core macroeconomics and microeconomics, development economics

Interests

Cooking, quilting, reading, singing, Chinese calligraphy.