

# Jiehua Chen

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□ <http://github.com/qedsoftware>

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## SUMMARY

Jiehua Chen specializes in spatial-temporal statistics, with a focus on environmental and agricultural applications. She has over 9 years of experience applying statistical analyses in the development context. She has worked on rainfall predictions for rain index insurance, automatic house detection from remote sensing imagery, trial design and execution for increasing adoption of new technologies in rural areas, and statistical evaluations of Millennium Village Projects. Jiehua received her B.Sc. in Mathematics and Physics from Tsinghua University, and her M.S. in Economics and Ph.D. in Statistics from Stanford.

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## EDUCATION

### Stanford University

#### *Ph.D. in Statistics*

*Thesis: Regression Models With Spatially and Temporally 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.*

#### *M.A. Economics*

### Tsinghua University

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

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## SELECTED WORK EXPERIENCE

### Quantitative Engineering Design (QED | <https://qed.ai>)

Global

*Co-Founder and Senior Statistician (2012 - present)*

Co-founder of a technology company that builds end-to-end data processing workflows for clientele in Sub-Saharan Africa and Southeast Asia. with socially beneficial objectives.

### The Earth Institute, Columbia University

New York, NY

- *Associate Research Scientist (8/2011 - 7/2016)*
  - Conduct statistical analyses of spatial- temporal soil and agricultural yield data, hyperspectral soil data, and satellite imagery for the African Soil Information System (AfsIS)
- *Statistician / Data Analyst (3/2011 - 7/2011)*
  - Developed MATLAB package for wind energy analysis. The code is used in Course MECE E4211.001 (Energy Sources and Conversion) at Mechanical Engineering Department, Columbia University.
  - Evaluated children nutrition projects in the Millennium Village Projects.
- *Senior Monitoring & Evaluation Manager (1/2011 - 3/2011)*
  - Developed optimized sampling algorithms for selecting soil quality monitoring locations for the African Soil Information Service.

- Generated digital maps of estimated soil characteristics in Africa, set a baseline for monitoring changes, and provided options for improved soil and land management.

**IRI, Columbia University**

**New York, NY**

*Consultant (12/2010)*

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.

**UN Development Programme**

**New York, NY**

*Consulting Statistician (5/2010 - 11/2010)*

Evaluated the impact of health, education, and infrastructure-related interventions introduced by the United Nations Millennium Village Projects conducted in fourteen African countries.

**Statistics Department and the Earth Institute, Columbia University**

**New York, NY**

*Postdoctoral Fellow (7/2008 - 6/2010)*

- Worked with the Millennium Village Projects on a field random experiment about information diffusion for fuel-saving woodstoves in Uganda. Designed new kind of randomized experiment. Implemented new propensity score weighting method.
- Developed machine learning algorithms (convolutional neural networks) for identifying households from satellite images of the African landscape. Deduced information will be used to optimize placement of energy utilities and road layout.

**SELECTED PUBLICATIONS**

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“Testing institutional biomass cookstoves in rural Kenyan schools for the Millennium Villages Projects.” Adkins, E; Chen, J.; Winiecki, J; Koinei, P; and Modi, V. Energy Policy, 14, 3, 186–193, 2010.

“Adjusting survey weights using multilevel modeling: a case study of jatropha adoption in Mali.” Basinger, M; Chen, J; Jeffrey-Coker, F; Rodriguez-Sanchez, F. S. ; Singer, T.; Modi. V; Agroforestry Systems, 84, 1, 59–72, 2012.

“Multi-sector intervention to accelerate reductions in child stunting: an observational study from nine sub-Saharan African countries.” Remans, R. et al. The American Journal of Clinical Nutrition. 94, 1632–1642, 2011.

**SKILLS**

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

**Databases:** MySQL, MongoDB, PostgreSQL

**Version Control and Project Management:** Git, Asana, JIRA, Slack

**Operating Systems:** Mac OS X, UNIX, Windows 95/98/2000/XP/7

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