Luna Yue Huang

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Department of Agricultural and Resource Economics
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Research Interests

Primary Field: Development Economics.
Secondary Field(s): Spatial Economics, Data Science.

Education and Affiliation

University of California, Berkeley — Berkeley, CA
Ph.D. Student in Agricultural and Resource Economics — *Aug, 2016–Present*
Dissertation Co-chairs: Edward Miguel, Marco Gonzalez-Navarro

University of California, Berkeley — Berkeley, CA
M.S. in Agricultural and Resource Economics — *Aug, 2016–May, 2018*

Selected Courses:	Development Economics	Economic Geography
International Economics	Industrial Organization	Applied Econometrics
Applied Machine Learning	Probability and Statistics	Microeconomic Theory

Center for Effective Global Action — Berkeley, CA
Research Assistant — *Jan, 2018–Present*

Peking University — Beijing, China
B.A. in Economics; B.S. in Environmental Science — *Aug, 2012–Jun, 2016*

Publications

Using RCT's to Estimate Long-Run Impacts in Development Economics
Joint with Adrien Bouguen (UC Berkeley), Michael Kremer (Harvard), and Edward Miguel (UC Berkeley), Annual Review of Economics, forthcoming. (NBER Working Paper w25356.)

Working Papers

Information, Incentives and Air Quality: New Evidence from Machine Learning Predictions
Joint with Minghao Qiu (MIT)
In command-and-control regulations, information asymmetry between central regulators and local agents is often cited as a key issue leading to ineffective policies. We evaluate a policy in China, which built air quality monitoring stations and enforced automatic data reporting to the central government, effectively preventing data manipulations by local officials. Exploiting the staggered implementation of this policy across 367 cities, we examine the impacts of the policy on local air quality. However, before monitoring stations were set up and data were credibly reported, we cannot observe pre-treatment air quality data. To overcome this challenge, we leverage recent development in machine learning (specifically, extreme gradient boosting) and a rich set of satellite images from NASA and reconstruct a comprehensive air pollution dataset in China with almost 0.5 million observations spanning from 2005 to 2016. Our structural break estimates do not demonstrate significant program effects.

Ongoing Projects

Impact Evaluation with Satellite Imagery and Machine Learning
Work in progress
Interventions in international development are usually evaluated with household surveys, which are costly to administer. I hope to develop proxies for household welfare that are cheaper to collect, by using state-of-the-art machine learning models to analyze high-resolution satellite images. I test one of the consumption proxies, roof quality, in the GiveDirectly experiment, a large unconditional cash transfer program in Kenya, and find significant and sizable treatment effects that are consistent with results from survey data.

Pneumonia Mistreatment, Physician Beliefs and Rapid Diagnostic Tests: Experimental Evidence from Siaya County, Kenya
Applying for funding, joint with Apollo Maima (USIU-Africa)

Research Experience

RA for Prof. Prashant Bharadwaj and Prof. Craig McIntosh, UC San Diego	*Jan, 2018–Present*
RA for Prof. Edward Miguel, UC Berkeley	*Jun, 2017–Jan, 2018*
RA for Prof. Michael Anderson, UC Berkeley	*Aug, 2016–May, 2017*

Teaching Experience

TA for Full-time MBA Microeconomics (MBA 201A)	*Fall 2018*
TA for Undergraduate Microeconomics (EEP 100)	*Fall 2017*

Presentations

UC Berkeley Development Economics Workshop	*Mar 2019*
2nd Annual Symposium on Geospatial Analysis for International Development (Poster)	*Nov 2018*
UC Berkeley Development Economics Lunch	*Oct 2018*
UC Berkeley-Davis-Riverside Giannini Foundation Student Conference	*Apr 2018*

Awards and Grants

East Africa Social Science Translation Collaborative Mentor Grant, Center for Effective Global Action	*2018*
Academic Creativity Award, Peking University	*2015*
Bajian Rencai Scholarship, Peking University	*2013, 2014, 2015*
Mao Yugang Foundation Grant for Undergraduate Research	*2014*
Wusi Scholarship, Peking University	*2013, 2014*

Skills

Languages: Chinese (Native); English (Fluent).
Programming: Fluent in R and Python (including PyTorch); Experienced in Bash, LaTeX, SQL, STATA, MATLAB and QGIS.

Last Updated: March 15, 2019