Luna Yue Huang

Development Economics | Data Science

Interested in applying deep learning methods on satellite images to track global poverty and evaluate policies in international development.

CONTACT

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EDUCATION

UC BERKELEY

PhD in Development Economics
GPA: 3.8
Expected May 2021 | Berkeley, CA
Advisors: Edward Miguel & Marco Gonzalez-Navarro

PEKING UNIVERSITY

BA in Economics & BS in Environmental Sciences
May 2016 | Beijing, China

COURSEWORK

Applied Econometrics II/III
Applied Machine Learning
Probability and Statistics
Development Economics I/II
Applied Industrial Organization
International Trade I/II
Economic Theory (Micro & Macro)

SKILLS

Python (& PyTorch) • R
STATA • Matlab • SQL • QGIS
Adobe Illustrator • Photoshop
Bash • LaTeX • Markdown • GitHub

REFERENCE

Edward Miguel
Professor of Economics
UC Berkeley
emiguel@berkeley.edu

Marco Gonzalez-Navarro
Associate Professor of Agricultural and Resource Economics
UC Berkeley
marcog@berkeley.edu

SELECTED RESEARCH

Beyond Nightlight: Using Daytime High-Resolution Satellite Images in Economics

work in progress

- Trained and tuned a state-of-the-art instance segmentation model, Mask-RCNN, on high resolution satellite images.
- Validated satellite-derived measurements of housing consumption against census records in rural Mexico.
- Showed substantial improvements over lights at night, a dataset widely used in economics to proxy economic development in regions with poor official statistics.

Information, Incentives and Air Quality: New Evidence from Machine Learning Predictions

working paper, joint with Minghao Qiu (MIT)

- Assembled, pre-processed and linked large remote sensing datasets, including OMI, MODIS and MERRA2.
- Applied a machine learning model, Extreme Gradient Boosting, to generate predictions that correct fabricated historical air quality data in China.
- Exploited a natural experiment, the staggered implementation of centralized air quality monitoring, and estimated causal effects with event study and structural break designs.

PUBLICATION

- Using randomized controlled trials to estimate long-run impacts in development economics. Joint with Adrien Bouguen (Santa Clara), Michael Kremer (Harvard), and Edward Miguel (UC Berkeley). *Annual Review of Economics*, 11(1): 523-561, 2019.

TEACHING

SPATIAL DATA AND ANALYSIS (IN PYTHON)

[GSPP 275] Fall 2019 | MPP/MPA/PhD Level, UC Berkeley

- Retrieving, linking, analyzing and visualizing modern spatial data, particularly remote sensing data, in Python.

INTERMEDIATE MICROECONOMICS

[MBA 201A] Fall 2018 | MBA Level, UC Berkeley

INTERMEDIATE MICROECONOMICS

[EEP 100] Fall 2017 | Undergraduate Level, UC Berkeley

AWARDS AND GRANTS

2018	East Africa Social Science Translation Collaborative Mentor Grant, Center for Effective Global Action, UC Berkeley
2015	Academic Creativity Award, Peking University
2013–15	Bajian Rencai Scholarship, Peking University
2014	Mao Yugang Foundation Grant for Undergrad Research
2013–14	Wusi Scholarship, Peking University