Luna Yue Huang

Economics | Machine Learning | Geospatial Analysis

CONTACT

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EDUCATION

UC BERKELEY

PhD (Development Economics)
GPA: 3.8

2016–Present | Berkeley, CA
Expected graduation: May 2021

PEKING UNIVERSITY

BA & BS (Economics & Environmental Sciences)

2012–16 | Beijing, China

COURSEWORK

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

SKILLS

Python (& PyTorch) • R • SQL

Google BigQuery • D3.js • QGIS
Google Cloud Platform • Bash • Git

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

Solomon Hsiang
Professor of Public Policy, UC Berkeley
shsiang@berkeley.edu

WORK EXPERIENCE

Google X

Data Scientist (Part-time) — Aug 2020–Dec 2020
AI Resident — May 2020–Aug 2020

- Led the data team in a confidential X project.
- Initiated and pursued data partnership with 4 other Google teams, and 3 external companies.
- Ingested, harmonized and feature-engineered over 150 billion raw data records in 22 disparate datasets from external and Google internal sources (with Python & SQL).

RESEARCH EXPERIENCE

Mapping Historical Climate Migration with 1.6 Million Aerial Photographs

lead author

- Created the first high-resolution maps of human settlements for 1940–70 from historical aerial photographs taken by decommissioned British spy planes. This fills a critical data gap for research on climate change induced mass migration in the past century.
- Invented a computer vision algorithm that automates large-scale aerial photo co-registration, reducing manual labor required for georeferencing by 98.8%. GitHub Repo (Python)
- Trained, tuned and deployed deep learning models (DeepLabV3 and D-LinkNet) to extract historical building footprints and road networks, achieving state-of-the-art performance despite small training samples.

The effect of large-scale anti-contagion policies on the COVID-19 pandemic (Nature, 2020)

- Led the data collection and econometric analysis for China.
- Estimated that large-scale social distancing policies prevented or delayed approximately 61 million COVID-19 confirmed cases in the US, China, Italy, France, South Korea and Iran.
- Published on *Nature*, reached the White House (Office of Management and Budget) & CDC, cited 115 times within three months of publication, and covered in 322 news stories by outlets including CNN, the Washington Post, New York Times, NPR, and Reuters. Paper

Measuring the Effectiveness of Poverty Alleviation Programs from Space

job market paper

- Measured housing quality from satellite imagery with a deep learning model (Mask R-CNN), and inferred poverty measures with Engel curves. GitHub Repo (Python & R)
- Evaluated a randomized controlled trial (RCT) on anti-poverty cash assistance in Kenya with satellite imagery, and obtained consistent results with extensive in-person surveys.
- Illustrated the possibility of dramatically reducing the cost of program evaluation in the field of international development.