# Luna Yue Huang

Economics | Machine Learning | Geospatial Analysis

## CONTACT

- luna-yue-huang.com
- yue_huang@berkeley.edu
- lunahuang@google.com
- 510.701.3560
- in luna983  luna983

## 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.
- Conceptualized, designed and implemented a data pipeline that ingests, harmonizes and feature-engineers over 150 billion raw data records in 22 disparate datasets from external and Google internal sources.

## 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
- 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
- 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.