

# Max A. Gardner

PH.D. CANDIDATE · GEOSPATIAL DATA PROFESSIONAL · TRANSPORTATION + LAND USE PLANNING

☎ (+1) 216-403-3692 | 📍 349 38th St. #103, Oakland, CA 94609, USA | ✉ [gardner.max@gmail.com](mailto:gardner.max@gmail.com) | 🌐 [mxndrwgrdnr](https://mxndrwgrdnr.com)

## Education

### University of California, Berkeley

Berkeley, CA

PH.D. CANDIDATE – CIVIL SYSTEMS ENGINEERING

present

- Develop integrated transportation and land use modeling platform for U.S. Department of Energy's [SMART Mobility Consortium](#).
- Leverage massive, passively-collected location data to quantify long-term dynamics of urban mobility – e.g., residential relocation, workplace location choice – in the context of hyper-gentrification and supply-constrained housing markets.

M.S. – CIVIL SYSTEMS ENGINEERING

2015 - 2016

- Coursework in land use/transportation planning, behavioral modeling, econometrics, machine learning

### Wesleyan University

Middletown, CT

B.A. – EARTH SCIENCE, HISTORY

2006 - 2010

- Phi Beta Kappa (Connecticut Gamma Chapter)

## Experience

### Freelance Consulting, Data Science

Oakland, CA

INTERLINE TECHNOLOGIES LLC ([INTERLINE.IO](https://interline.io))

November 2018 - March 2019

- Provided public transport ridership forecasts for [Seamless Bay Area](#) based on scenarios defined in their [Vision Map](#).
- Implemented SF Bay Area ridership model based on Federal Transportation Agency's Simplified Trips-on-Project Software (STOPS).

SIDEWALK LABS (ALPHABET, INC.) - MODEL LAB (NOW [REPLICA](#))

October 2017 - May 2018

- Processed large-scale mobile phone location data and designed algorithms to detect residential migrations.
- Developed statistical models of residential and workplace transition and location choice.

### Mapzen

San Francisco, CA

MOBILITY DATA INTERN

May - September 2017

- Developed validation tools to support [opentraffic.io](https://opentraffic.io), an open source real-time traffic engine developed for the World Bank.
- Generated millions of synthetic GPS traces to calibrate map-matching algorithm and optimize performance under adverse conditions.
- Produced a series of [blog posts](#) and [Jupyter Notebooks](#) detailing the suite of simulation and validation tools I developed.

### UrbanSim Inc.

Berkeley, CA

DATA SCIENTIST

May 2015 - May 2017

- Built internal tools, web services, and scrapers to collect and process demographic and geospatial data on demand.
- Automated the calibration of land use forecasting models using third-party datasets (US Census, OpenStreetMap, etc.).
- Developed and maintained containerized simulation environments with AWS + Docker + Python Flask.

### Oracle Corp. – Utilities Global Business Unit

San Francisco, CA

DATA SCIENTIST

July 2012 - August 2015

- Designed and implemented analytic solutions in energy efficiency, fraud detection, distribution, and asset management.
- Built and automated tests for the above tasks using data mining/machine learning techniques and 100+ TB of raw smart meter data.

### Urban Mapping Inc. (acq. by Maponics, 2015)

San Francisco, CA

DATA RESEARCHER

August 2011 - June 2012

- ETL of geospatial data into EC2-hosted PostgreSQL data catalog, sourced and maintained neighborhood boundary data.

## Publications/Patents/Presentations

- Gardner, Max A. "Using Passively-collected Geospatial Data to Compare Patterns of Residential Location Choice in Two North American Cities." Presented at the Free and Open Source Software for Geospatial (FOSS4G) Conference in Dar es Salaam, Tanzania. 29 May 2018.
- Gardner, Max A., et al. "System and method for identifying orphaned utility meters." US Patent 9,532,117 B1. 27 December 2016.
- Gardner, Max A., et al. "A 3D crustal velocity model of the Longmen Shan fault zone in Sichuan, China." 2011 GSA Annual Meeting in Minneapolis. 2011.

## Additional Qualifications

### Computing:

Python: ●●●●● SQL: ●●●●○ R: ●●●○○ Unix/Bash: ●●●●● ML/AI: ●●●●○  
Data Viz: ●●●●○ GIS: ●●●●● Git: ●●●●● Docker: ●●●●○ AWS: ●●●●○

### Interests:

Portuguese language, photography, picture framing, racquetball, record collecting, wilderness backpacking