

Max A. Gardner

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

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Education

University of California, Berkeley

Berkeley, CA

PH.D. CANDIDATE – CIVIL SYSTEMS ENGINEERING

present

- Develop integrated transportation and land use micro-simulation platform for U.S. Department of Energy's [SMART Mobility Consortium](#): design of platform software architecture and individual land use models.
- Leveraging passively-collected observation data to better understand long-term dynamics of urban mobility – e.g. residential relocation and 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, machine learning

Wesleyan University

Middletown, CT

B.A. – EARTH SCIENCE, HISTORY

2006 - 2010

- Phi Beta Kappa (Connecticut Gamma Chapter)

Experience

Sidewalk Labs - Model Lab

San Francisco, CA

CONTRACT - DATA SCIENTIST

October 2017 - May 2018

- Designed algorithms to detect intra-urban migrations from passively collected mobile phone data; performed empirical analyses.
- Developed statistical models of residential and workplace transition and location choice.

Mapzen

San Francisco, CA

CONTRACT - MOBILITY DATA INTERN

May - September 2017

- Developed validation tools to support opentripplanner.org, 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 my work.

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 simulation models using third-party datasets (US Census, OpenStreetMap, et al).
- 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: ●●●●●○ PostGIS: ●●●●●○ Git: ●●●●●○
AWS/EC2: ●●●●●○ R: ●●●●●○ Unix/Bash: ●●●●●○ Docker: ●●●●●○

Other skills & interests:

photography + picture framing, racquetball, vintage hi-fi + record collecting, backpacking