Max Vilgalys

vilgalys@mit.edu | (425) 449-9464 | vilgalys.github.io

Education

Massachusetts Institute of Technology 2017-
PhD, Social and Engineering Systems
Fields: Energy and environmental economics, industrial organization

Stanford University 2013-2017
B.S. in Electrical Engineering

Experience

Research Assistant for Nikhil Agarwal	2020-2021
Research Assistant for Jing Li	2019-2020
Research Assistant for Dava Newman	2018
Data Analyst Intern, Western Interstate Energy Board, Denver, CO	2017
Software Development Intern, Lichtblick Renewable Energy, Hamburg	2016
Policy Intern, U.S. Department of Energy, Washington, D.C.	2016

Teaching

TA for 6.439, Statistics, Computation and Applications, MIT	2021
TA for 6.431X, Probability, MIT EdX	2020
Tutor in Probability and Statistics, Stanford Office of Accessible Education	2016-2017

Fellowships and Awards

MIT Exxon Mobil Energy Fellow	2019-2020
MIT Presidential Fellow	2017-2018
Twitter Award, Stanford CS Project Fair, "Fake News" detector	2017

Citizenship U.S., Germany

Languages English (native), German (conversational)

Coding Python, Julia, Stata, C#/C/C++

Research

Adaptation to Climate Change in U.S. Agriculture (with Jing Li, in progress)
Between rising temperatures, shifting rainfall patterns, and higher risks of catastrophic weather, climate change is expected to bring lower, less predictable yields to farms worldwide. Perhaps the largest source of uncertainty in these estimates is farms' capacity to adapt to environmental change. We measure the extent of farms' adaptation via a nonparametric production function. We provide reduced form evidence that functional form assumptions of weather in agricultural production functions alter estimates of the extent of climate impacts and adaptation, by estimating debiased average marginal effects of a machine learning model of crop yield.

The Changing Role of Coal-fired Generation in the Western Interconnection (with Maury Galbraith, Dian Grueneich, and Ben Lim)
Electric system operators have provided anecdotal evidence that in the 21st century, coal-fired generation is transitioning from providing baseload power to meeting demand more flexibly. We support these claims with an analysis of coal plant generation schedules in the American West. Using a nonparametric clustering algorithm on hourly emissions data from the EPA, we demonstrate that baseload operation in coal plants in the Western Interconnection decreased from 52% of operating days in 2000 to only 22% of operating days in 2016, and that the number of coal plants that spent the majority of their operating days providing baseload power declined over 75% over the same period.
Work completed at the Western Interstate Energy Board, 2017.