Sam Kramer

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ENERGY AND ENVIRONMENTAL ECONOMICS, INC. San Francisco, CA
Managing Consultant

Mr. Kramer works primarily on resource adequacy and reliability modeling, as well as long-term capacity expansion. He is also a key contributor in the development of E3's in-house resource planning models. He previously spent two and a half years as a data scientist at Myst AI, developing short-term forecasting models for a variety of clients and use cases across the electricity sector. Prior to that, he obtained a B.S. and M.S. in Civil and Environmental Engineering (Atmosphere/Energy track) at Stanford University.

Selected E3 projects include:

- **Assessing the Value of Long Duration Energy Storage, California Energy Commission (Apr 2020-present):** Used E3's RESOLVE and RECAP models to assess the role LDES can play in meeting CA's decarbonization goals.
- **Decarbonization Study, New Brunswick Power (Jun 2020-present):** Quantified intra-hourly operational reserve needs for use in capacity expansion and loss-of-load-probability modeling using E3's RESERVE model.
- **ELCC Implementation Study, New York Independent System Operator (Apr-Aug 2022):** Evaluated methodologies for quantifying the reliability contribution of resources in NYISO's capacity market.
- **Lower Snake River Dams Removal Study, Bonneville Power Administration (Mar-Jun 2022)**: Conducted capacity expansion modeling using E3's RESOLVE model to determine the long-term impacts of removing the Lower Snake River Dams.
- **Renewable Integration Reserves Estimation, Puget Sound Energy (Dec 2021-Feb 2022):** Estimated the increase in operational reserve needs from integrating new renewable resources using E3's RESERVE model.
- **ELCC Forecasting, Lincoln Electric System (Jan – Feb 2022)**: Supported Lincoln Electric's IRP by forecasting future capacity value of wind, solar, and storage resources using E3's RECAP model.

MYST AI San Francisco, CA
Data Scientist December 2018 – July 2021

- Developed and deployed short-term load, price, and market imbalance forecast models for clients yielding 30-60% improvement over existing solutions
- Automated performance monitoring of production forecast models using Google Cloud Platform
- Key contributor to internal codebase used to develop models and conduct time series analyses
- Contributed to design and construction of internal AutoML pipeline for model development
- Visualized and communicated analyses of model performance to clients

BLOCPOWER   New York, NY
Engineering Intern   June 2016 – August 2016

- o   Conducted on-site energy audits for 40 low-income multi-family residence buildings
- o   Wrote reports detailing efficiency upgrade strategies and estimated savings for 15 buildings
- o   Built an optimized urban microgrid simulation model in Python

TERRESTRIAL PALEOCLIMATE GROUP   Stanford, CA
Research Assistant   January 2015 – September 2015

- o   Built computational model in R for estimating plant productivity from geologic samples
- o   Contributed to research published in Frontiers in Earth Science as "High-Resolution Stable Isotope Paleotopography of the John Day Region, Oregon, United States"

Education

Stanford University   Palo Alto, CA
M.S., Civil and Environmental Engineering   June 2018
B.S., Civil and Environmental Engineering