

Experience

2021-Present

Master's Studies in Distributed Energy

- Distribution grid modeling
 - Time dimension: shiftable, dispatchable, curtailable load impacts
 - Spatial dimensions: hosting capacity analysis, "electrocardiography"
 - Modeling using Python, OpenDSS, Simulink, and other tools
- Power electronics modeling and controls
 - Inverter-based resource (IBR) controls development
 - Simulation-based studies for grid-wide power quality impacts

2015 - 2021

Cofounder, Electrical Lead

CalWave Power Technologies

- Electrical Engineering Lead for Dept. of Energy research and development contracts
- Low-voltage electronics and energy storage – designed, built, and commissioned
 - Battery + inverter backup systems
 - SCADA and communications network infrastructure
 - Anti-islanding and grid interconnection planning
- Data Science and Market Analysis
 - Analysis scripting and tool development in Python
 - Resource adequacy and variable generation studies
 - Techno-economic forecasting
 - Multi-domain (electrical, mechanical, hydraulic) simulations in Matlab/Simulink
 - Microcontroller coding to support lab and wave tank experiments

2012 - 2015

Oceanographic Engineer

NOAA National Ocean Service

- Software development: wrote and automated Python tools for tidal, GPS, and accelerometer time series analysis

Education

2021 - 2023

M.S. Electrical Engineering (candidate)

University of Oviedo, Spain

"Sustainable Transportation and Electric Power Systems" (STEPS) is an Erasmus Mundus consortium specializing in grid modernization, funded by the European Union

2007 - 2012

B.S. Electrical Engineering

Virginia Polytechnic Institute and State University

Professional Networks

2022

- California Professional Engineer

2021-Present

- Collaborator, IEC 62600-30 U.S. "Shadow Committee"
 - This group is adapting power quality standards from other industries for marine energy applications.

2020

- U.S. Collaborator, IEC Technical Committee SC8b
 - Our temporary working group developed "use cases" to evaluate the adequacy of TS 62898 Microgrids where microgrids must rely on highly variable renewables such as wave or tidal power.