REXON CARVALHO

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EDUCATION

Rochester Institute of Technology (RIT), Rochester, NY **(Expected Graduation Date: Aug 2018)**
Sustainable Systems, Master of Science

Institute of Chemical Technology, Mumbai, India (May 2013)
Dyestuff Technology (Chemical Engineering), Bachelor of Technology

PROFICIENCIES

R, Python, Matlab, Advance Excel, Tableau, US Power Markets, Energy Modeling, Data Analysis, Multi-criteria Decision Analysis, Policy Analysis, Integrated Assessment Models, Greenhouse Gas Emissions Accounting, Environmental Life Cycle Assessment, Project Management

MASTERS THESIS

Evaluating the Future of Natural Gas as a Bridge Fuel for Electricity Generation in the US (May 2017-Present)
- Financial modeling of Energy, Capacity and Ancillary Services markets for a natural gas combustion turbine (NGCT) power plant operating in locations controlled by ERCOT, NYISO and PJM
- Calculating hourly revenue generated by, and cost of, serving the above markets using historical market and operations data as model inputs
- Estimating payback period of the power plant and using it as an indicator to inform capacity expansion planning

WORK EXPERIENCE

Research Assistant, Climate and Economics at World Resources Institute, Washington, DC (Apr 2018- Present)
- Managing development and improvements of a scenario database and a visualization tool called Climate Watch Pathways
- Researching methodologies, qualitative and quantitative modeling inputs/outputs and scenarios of integrated assessment models and proposing ideas to present them on the platform in a meaningful way
- Supporting development of outreach strategies for the platform to engage existing stakeholders and expand the user base

Climate Watch and Low Carbon Modeling Intern at World Resources Institute, Washington, DC (Oct 2017- Mar 2018)
- Contributed to design and development of a climate and economic scenario database and visualization tool called Climate Watch Pathways and its backend infrastructure
- Collected and structured modeling data (inputs, outputs and assumptions) on decarbonization pathways by various modeling teams to be presented in a user-friendly manner on the platform.

Graduate Assistantship at RIT, Funded by National Science Foundation, Rochester, NY (Aug 2016-Dec 2016)
- Analyzed policies related to Solar Photovoltaics (PV) in Germany, Japan, United States and China and developed a model for relationship between adoption of Solar PV and its Net Present Value to the customers by performing a non-linear regression analysis
- Proposed funding deployment of Solar PV as a policy measure to increase the adoption and reduce the future cost of carbon mitigation

Graduate Assistantship at RIT, Funded by FX Fowle Architects, Rochester, NY (Aug 2016-Dec 2016)
- Analyzed and visualized performance data for a period of 3 years of various systems of a LEED platinum certified building at Rochester Institute of Technology using R
- Optimized the building performance by diagnosing a faulty valve in the Heating Ventilation and Air Conditioning (HVAC) system improving its efficiency and reducing greenhouse gas emissions by 20%

PROJECTS

Analysis of Regional Energy Consumption Survey (RECS) (Jan 2016-May 2016)
- Modeled energy consumption of the population sample by determining the significant factors influencing it using inferential statistics and performing a linear regression analysis in R
- Performed time series analysis and forecasted the residential energy consumption to increase by 12% while housing demand to increase by 27% by 2040 compared to that in 2015 suggesting a substantial increase in building energy efficiency

Environmental-economic Analysis of Solar Photovoltaics (Aug 2015-Dec 2015)
- Performed cost benefit analysis of solar photovoltaics (PV) considering carbon tax and no subsidies from the government in California, Arizona and New York

- Identified that with current grid carbon intensity, solar PV will be economically feasible only in the state of California but will displace the most grid carbon dioxide emissions in the state of Arizona

PUBLICATION

Williams Eric, Eric Hittinger, **Rexon Carvalho**, and Ryan Williams. "Wind power costs expected to decrease due to technological progress." *Energy Policy* 106 (2017): 427-435.