Vignesh Venugopal

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

Mr. Venugopal joined E3 in 2019 after earning his master's degree in energy resources engineering from Stanford University. His work at E3 focuses primarily on planning issues related to the bulk power grid. One recent project involved using RECAP, E3's capacity planning model, to help power system balancing authorities ensure resource adequacy. Mr. Venugopal brings with him an understanding of the technical, socio-economic, and policy aspects of generation and storage technologies. Through his graduate research and project work, he has also developed skills related to optimization and machine learning. In addition to his master's degree, Mr. Venugopal holds a B.E. in chemical engineering from the University of Mumbai.

STANFORD UNIVERSITY   Stanford, CA
Teaching Assistant   January 2019 – March 2019

- o Held weekly office hours to help students with course content, weekly assignments, and projects for *ENERGY 191/291: Optimization of Energy Systems*
- o Aided both the theoretical understanding of optimization and its practical implementation in the Julia for Mathematical Programming (JuMP) framework

STANFORD UNIVERSITY   Stanford, CA
Research Assistant, Environmental Assessment and Optimization Group   September 2017 – June 2019

- o Researched short-term solar panel output forecasting with machine learning
- o Employed Convolutional Neural Networks for predictions on a 15-minute forecast horizon using sky images from the past 15 minutes
- o Investigated merit of multi-modal input architectures used in the field of robotics to make use of images, PV output history and weather parameters for better predictions; the best model performed 17% better than smart persistence for the above-mentioned time horizon
- o Side projects included stochastic unit commitment modeling and market research to quantify costs and benefits of a better solar forecast.

UNIVERSITY OF MUMBAI   Mumbai, India
Undergraduate Researcher, Department of Chemical Engineering   August 2016 – March 2017

- o Researched biodiesel production from used cooking oil to avoid "food vs. fuel" debates
- o Experimented with microreactors to induce slug flow, increase interfacial area and thus the rate of reaction without the need for agitation or co-solvents

JACOBS ENGINEERING INDIA PVT LTD   Mumbai, India
Intern, Department of Process Engineering   June 2016 – July 2016

- o   Re-engineered a batch operating plant producing food flavorings and performance chemicals into continuous production mode for a client; developed Process Flow Diagrams and Piping & Instrumentation Diagrams

BHABHA ATOMIC RESEARCH CENTER   Mumbai, India
Intern, Department of Health Physics   June 2015 – July 2015

- o   Collected environmental samples and conducted radiation detection and measurement of H3 and C14 levels in those samples using a Liquid Scintillation Counter

Education

Stanford University   Stanford, CA
M.S., Energy Resources Engineering   June 2019

University of Mumbai   Mumbai, India
B.Eng., Chemical Engineering   June 2017

Citizenship

India