Esteban Alexis Soto Vera

Ph.D. Candidate in Technology
Industrial Engineer

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Address: 103 S 4th St, Apt 503
Lafayette, IN 47901

EDUCATION

Ph.D. in Technology, Purdue University, United States, (Current)
Research Interest: Renewable energy, solar energy, peer to peer trading energy, predictive maintenance for solar systems, and disturbance of the electricity grid by renewable energies.

Master in Industrial Management with major in Finance Management, University of Concepcion, Chile, 2015
Thesis*: "*Analysis of cointegration among the sectoral indices of the Chilean stock market and the Index of Selective Price (IPSA), applied to recession periods versus those without international recession"

Industrial Engineer, University of Concepcion, Chile, 2014
Thesis: "Feasibility Study of the Biobío Science and Technology Park, focused in the Social and Economic Impact in the country"

PROFESSIONAL EXPERIENCE

Project Coordinator - REU Program, Purdue University, 2021-Current
The goal of the REU program is to provide underrepresented engineering and engineering technology students with a research experience that combines the best aspects of academic applied research and business practices. My main role in the program is to be a mentor for the students, co-teach some of the modules, and keep track of the tasks assigned to the students.

Graduate Research Assistant, Purdue University, 2020-Current
Research has focused on two main topics: predictive maintenance of solar systems and peer-to-peer energy trading for topics, literature reviews, and article writing. Additionally, I have been developing the business strategy of an applied research project that consists of a predictive monitoring tool for photovoltaic systems.

Cofounder & CEO, Potencial, Chile, 2017-2018
The Startup's main activity is the design and development of electrostatic device, "MPZero", to reduce emissions of particulate material. Devices are developed on a residential and commercial scale that allows reducing emissions from biomass combustion. Energy efficiency consulting and installation of residential and commercial photovoltaic systems are also provided.

Engineer of Energy Efficiency, Ministry of Energy, Chile, 2016
In charge of implementing the energy efficiency program in the Biobío region: training the community, monitoring and generating new projects on energy efficiency in the public and private sector.

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Project Engineer, Cluster Solar House, University of Concepción, Chile, 2015
Managed the project of a sustainable house developed by the School of Architecture. This included photovoltaic generation, home automation and water treatment.

Lead Engineer, Solar Car Project, University of Concepción, Chile, 2014
Lead the management team, the project involved design, and construction of a solar racing car, to compete in the Atacama Solar Challenge.

Teaching Assistant, University of Concepción, Chile, 2011-2013
In courses of: optimization methods II, management, economy, and systemic analysis of industrial systems.

SPECIALIZATION PROGRAMS

Foundations in College Teaching Certificate Program: The Foundations Certificate provides an overview of evidence-based teaching practices and strategies. Sep-Oct 2021.

Purdue National Science Foundation I-Corps program: A program for applied research endeavors focused on discovering clients and transitioning ideas, products, or other intellectual activity to market. Oct-Nov 2020.

The Engine Blueprint program (created by MIT): A program to explore the business opportunities of scientific advancements. He is focused on technology risk mitigation and market discovery and selection. Sep-Oct 2020.

PUBLICATION

1. Soto, E. A., Bosman, L. B., Wollega, E., & Leon-Salas, W. D. (2020). Peer-to-peer energy trading: A review of the literature. *Applied Energy*, 116268.
2. Bosman, L. B., Leon-Salas, W. D., Hutzel, W., & Soto, E. A. (2020). PV System Predictive Maintenance: Challenges, Current Approaches, and Opportunities. *Energies*, *13*(6), 1398.
3. Bosman, L. and E. Soto (2021). Leveraging Entrepreneurially-Minded Online Discussions to Support an Educator-Focused Renewable Energy Community of Practice. PS2021 Polytechnic Summit & Irish Journal of Academic Practice. TU Dublin, Ireland. June 1 – 4, 2021.
4. Soto, E. A., Bosman, L. B., & Wollega, E. (2021, April). Quantification of Solar Energy Grid Disturbances in the United States. In *2021 IEEE Green Technologies Conference (GreenTech)* (pp. 13-18). IEEE.
5. Soto, E. A., Arakawa, K., & Bosman, L. B. Identification of Target Market Transformation Efforts for Solar Energy Adoption. *Proceedings of the 5th NA International Conference on Industrial Engineering and Operations Management Detroit, Michigan, USA, August 10 - 14, 2020.*

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6. Ramirez, J., Soto, E. A., Wollega, E., & Bosman, L. B. Using Machine Learning to Assess Solar Energy Grid Disturbances. *Proceedings of the 5th NA International Conference on Industrial Engineering and Operations Management Detroit, Michigan, USA, August 10 - 14, 2020.*

FUNDS AWARDED

"Intellectual property" Fund , Government of Chile, Fund for patenting of a particulate material capture system, ($11,500 USD), 2018.

"Capital Semilla" Fund , Government of Chile, Fund for innovation and entrepreneurship, ($38,000 USD), 2016.

"Impacta Energia" Fund , Government of Chile, Public innovation contest with social impact ($120,000 USD), 2016.

"Capital Semilla" Fund , Government of Chile, Fund for innovation and entrepreneurship ($38,000 USD), 2015.

VOLUNTEER AND LEADERSHIP EXPERIENCES

President, Purdue Fulbright Association, 2021-2022

President, Purdue Chilean Association, 2019-2020

Vice- President, Chilean Association of Industrial Engineering Students, 2012

President, Student center of Industrial Engineering, University of Concepción, Chile, 2011

Volunteer, Program: Adopt a Brother, Foundation for poverty overcoming, 2010

PROFESSIONAL SKILLS

Languages: Fluent in Spanish and English.

Software and programing: Eviews, SPSS, R, SAS, MySQL, Python, ARENA and Microsoft Office

Teamwork: Conflict resolution and relationship building.

Communications: Verbal and non-verbal, and listening skills.

Public speaking: Confidence and creation of effective presentation slides.

Flexibility: Patience, perceptiveness and problem solving.

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SCHOLARSHIPS

FULBRIGHT–CONICYT: Equal opportunities doctoral scholarship, 2016.

Government Scholarship: “Bicentenary”, for undergraduate education, 2008.