

# SANTIAGO CORREA

(302) 531-6069 | New York, NY | [santiago.correa.cardona@gmail.com](mailto:santiago.correa.cardona@gmail.com) | [santiagocorrea.github.io](https://santiagocorrea.github.io)

## EDUCATION

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**University of Massachusetts Amherst** Amherst, Massachusetts  
Ph.D. in Computer Engineering April 2022  
Dissertation: Models and Machine Learning Techniques for Improving the Planning and Operation of Electricity Systems in Developing Regions

**University of Massachusetts Amherst** Amherst, Massachusetts  
Master of Science in Computer Engineering May 2017  
Scholarship: Fulbright – Development of the Regions

**Universidad Pontificia Bolivariana** Medellín, Colombia  
Bachelor of Science, Engineering April 2012  
Concentration in Technology Management

## PROFESSIONAL EXPERIENCE

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**Data Scientist** New York, NY  
*BlocPower* March 2022 – Present

- Engineer and orchestrate advanced AI/ML models, including generative AI and ensembles, on more than 120 million buildings in the United States to design decarbonization strategies.
- Co-lead optimization initiatives through data mining and analytics, driving product, marketing, and business strategy improvements.
- Lead data-driven research to identify opportunities for decarbonizing and retrofitting buildings across the United States, leveraging data analytics to inform decisions on energy efficiency improvements.
- Lead research and development (R&D) efforts in collaboration with Oak Ridge National Lab to improve the accuracy of energy signature estimates and reduce the bias of urban building energy models (UBEMs).
- Architect comprehensive metrics and quality assurance frameworks to uphold data integrity, model accuracy, and reliability for all AI-based modeling and energy retrofit prediction initiatives.
- Effectively present research findings to individuals without technical expertise using interactive visual aids and presentations, bridging knowledge gaps and facilitating stakeholder buy-in.
- Supervised and mentored a team of 7 data science interns and junior analysts, providing guidance on advanced analytical methodologies, AI model architecture, training, and validation protocols.

**Graduate Data Scientist, visiting scholar** Barcelona, Spain  
*Alpha Telefónica Innovation* Feb 2019 – Jul 2019

- Architected and deployed machine learning models to forecast electric vehicle charging patterns, enabling optimized utilization of renewable generation and energy storage assets.
- Lead research and development R&D efforts using deep learning algorithms for demand response (DR).
- Engineered and operationalized a scalable data pipeline on virtual private cloud services to support data-driven strategy and product development.

**Graduate Research Assistant** Amherst, Massachusetts  
*University of Massachusetts – STIMA Lab, Director: Professor Jay Taneja* May 2017 – April 2022

- Conducted cutting-edge AI research driving strategic energy system planning and optimization across sub-Saharan Africa.
- Engineered innovative AI/computer vision models leveraging remote sensing data to analyze urban growth in developing regions.
- Architected robust statistical models and computational frameworks to quantify energy access and grid reliability, synthesizing and mining complex, multi-source datasets through rigorous quantitative techniques.

**Project Engineer**  
*Unión Eléctrica S.A.*

Medellín, Colombia  
Jun 2014 – Jul 2015

- Coordinated and supervised a staff of 15 people in the assembly and deployment of computer networks and data storage of the Video Surveillance System for the local Ministry of Security.
- Monitored the Operations and Maintenance (O&M) program to ensure system quality.
- Researched and implemented an automated physical intrusion detection system.

**Voice and Data Engineer**  
*Ingetec S.A.*

Ituango, Colombia  
Jul 2012 – Oct 2013

- Supervised the assembly, maintenance, and project execution of the information and communication systems for a 2400 MegaWatts hydroelectric power plant

## PUBLICATIONS

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1. Shovan Chowdhury, Fengqi Li, Avery Stubbings, Joshua New, Ankur Garg, Kevin Bacabac, **Santiago Correa**. Data And Machine Learning Approach For Determining Building Type. In the International Building Performance Analysis Conference IBPSA-USA SimBuild, 2024. **(To Appear)**
2. **Santiago Correa**, Gustavo Perez, Paulina Jaramillo, Jay Taneja. Taking the Long View: Enhancing Learning On Multi-Temporal, High-Resolution, and Disparate Remote Sensing Data. In ACM Conference on Systems for Energy-Efficient Buildings, Cities and Transportation (ACM BuildSys), 2023. **Best paper award runner-up.**
3. Shovan Chowdhury, Fengqi Li, Avery Stubbings, Joshua New, Ankur Garg, **Santiago Correa**, Kevin Bacabac. Bias Correction in Urban Building Energy Modeling for Chicago using Machine Learning. In The International Conference on Intelligent Data Science Technologies and Applications (IDSTA), 2023.
4. **Santiago Correa**, Zeal Shah, Yuezi Wu, Simon Kohlhase, Philippe Raisin, Nabin Raj Gaihre, Vijay Modi, Jay Taneja. PowerScour: Tracking Electrified Settlements Using Satellite Data. In ACM Conference on Systems for Energy-Efficient Buildings, Cities and Transportation (ACM BuildSys), 2022.
5. **Santiago Correa**, Zeal Shah, Jay Taneja. This Little Light of Mine: Electricity Access Mapping Using Night-time Light Data. In ACM Conference on Future Energy Systems (ACM e-Energy), 2021. Note paper.
6. **Santiago Correa**, Lei Jiao, Aidas Jakubenas, Roby Moyano, Jesus Omana Iglesias, Jay Taneja. Who's in Charge Here? Scheduling EV Charging on Dynamic Grids via Online Auctions with Soft Deadlines. In ACM Conference on Systems for Energy-Efficient Buildings, Cities and Transportation (ACM BuildSys), 2020.
7. **Santiago Correa**, Noman Bashir, Andrew Tran, David Irwin, Jay Taneja. Extend: A Framework for Increasing Energy Access by Interconnecting Solar Home Systems. In ACM Conference on Computing and Sustainable Societies (ACM COMPASS), 2020.
8. **Santiago Correa**, Noman Bashir, Jesus Omana Iglesias, Candace Saffery, Jay Taneja. Sharing Solar Energy: Who is the Good Neighbor? In ACM Conference on Future Energy Systems (ACM e-Energy), 2019. Note paper.
9. Noah Klugman, **Santiago Correa**, Pat Pannuto, Matthew Podolsky, Jay Taneja, Prabal Dutta. The Open INcentive Kit (OINK): Simplifying the Generation, Comparison, and Deployment of Incentive Systems. In the International Conference on Information and Communication Technologies and Development (ICTD), 2019.
10. **Santiago Correa**, Noah Klugman, Jay Taneja. How Many Smartphones Does It Take to Detect a Power Outage? In ACM Conference on Future Energy Systems (ACM e-Energy), 2018. Note paper. **Audience choice award.**
11. **Santiago Correa**, Noah Klugman, Jay Taneja. Deployment Strategies for Crowdsourced Power Outage Detection. In IEEE Conference on Communications, Control, and Computing Technologies for Smart Grids (IEEE SmartGridComm), 2018.

## TEACHING EXPERIENCE

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### Teaching Assistant

- HONORS 499CM & 499DM – Machine Learning section for uncertainty, risk, and decision-making Summer 2020
- ECE 697ED – Electricity Infrastructure and Delivery In The Developing World Fall 2018
- ECE 374 – Computer Networks and the Internet Spring 2017
- ECE 563 – Introduction to Communications and Signal Processing Spring 2016

## CERTIFICATIONS

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**Statistical and Computational Data Science** 2021  
University of Massachusetts Amherst

**Data Science For All (DS4All)** 2020  
Ministry of Information and Communication Technologies of Colombia (MinTIC) and Correlation One

## SERVICE

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### Graduate Student Advisor for the Society of Hispanic and Professional Engineers (SHPE)

UMass Chapter – 2018 Academic Year

### Review Board Member

ACM Journal on Computing and Sustainable Societies (ACM JCSS)

### Mentor for the Summer of Science Program at the Mechanism Design for Social Good (MD4SG) initiative

Project Overview: Development of a mobile application and analysis with data mining for the detection of the autism spectrum

## SKILLS

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<b>Technical:</b>	Statistical Modeling	Deep learning	Geospatial AI
	Research & Development	Machine Learning and MLOps	Energy Informatics
	Data Analytics and Visualization	Renewable Energy Systems	Smart Grids systems

<b>Software:</b>	Python / Pytorch / SQL	VCS (git) / AWS SageMaker	Linux / MacOS
	scikit-learn		

**Organizational:** Team and project management, resource coordination, and strategic planning

**Languages:** Bilingual in Spanish and English