Samuel Roberts-Baca

Data scientist and researcher with 5+ years of experience developing data science solutions.

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Portfolio github.com/samrobertsbaca linkedin.com/in/samrobertsbaca

RELEVANT WORK EXPERIENCE

Research & Development Intern, Sandia National Laboratories, Albuquerque, NM

December 2015 – May 2022

- Re-designed, developed, and maintained the **U.S. Department of Energy Global Energy Storage Database**, the premier database for open-source energy storage project data worldwide. Managed external contractors, additional developers, and data validation assistants throughout development.
- Designed and developed a tool for estimating heats of reaction associated with various battery chemistries named the **Lithium-ion Battery Thermodynamic Web Calculator.**
- Optimized Time-Series Data Visualization on the **Battery Archive**, an open access repository of battery data for easy visualization, analysis, and comparison of battery data across institutions.
- Co-author and presenter for three energy storage data science application research papers published in IEEE conferences.
- Performed statistical analysis and developed tools for various research & development applications as needed.
- Assisted with research needs and coordination on the **U.S. Department of Energy Storage Handbook**.

EDUCATION

M.S. Data Science, University of Denver

2020 – 2022 · 3.84 GPA · Director's Scholarship

Relevant Coursework: Database Organization & Management, Algorithms for Data Science, Advanced Probability & Statistics for Data Science, Data Mining, Data Visualization, Machine Learning, Parallel and Distributed Computing for Data Science

B.S. Computer Science, University of New Mexico

2014 – 2019 · 3.50 GPA w/ Honors Distinction

Relevant Coursework: Special Topics in Neural Networks, Numerical Computing, Data Structures / Algorithms, Intro and Advanced Declarative Programming, Operating Systems, Computer Logic Design

PUBLICATIONS

- Hernández, J., Roberts-Baca, S., & Gurulé, G. (2021, October). A Prototype Small Utility-Scale Joint Vertical Axis Wind Turbine and Solar Energy System (VAWT/SES) to Provide Water Pumping in Remote Areas of Uganda. In 2021 IEEE Global Humanitarian Technology Conference (GHTC) (pp. 360-367). IEEE.
- Hernández, J., Roberts-Baca, S., & Etemadi, A. (2021, August). Designing a Monte Carlo Model with Python to Predict the Life Cycle Disposal Costs for Grid-Level Electrical Energy Storage Systems. In 2021 IEEE PES/IAS PowerAfrica (pp. 1-5). IEEE.
- Hernández, J., Etemadi, A., Roberts-Baca, S., & Muthyapu, V. K. (2021, April). Developing a logistic regression method for valuation of grid-level energy storage systems. In 2021 IEEE Conference on Technologies for Sustainability (SusTech) (pp. 1-8). IEEE

OTHER INTERESTS

Co-Chair, Albuquerque ACT-SO, January 2020 – Present

Currently mentor high school students to produce competitive work for local and national Academic, Cultural, Technological and Scientific Olympics (ACT-SO) competitions.

Songwriter & Musician, February 2013 – Present

Composing, arranging, recording, and releasing a catalog extending over 150 original songs, most recently under the moniker *John King Cave*.