

## Problem Statement

Optimize a local zoo's current donor program to fund its facility's long-term sustainability and the organization's commitment to wildlife health, education, and conservation, while aligning with the Data Science Alliance's (DSA) mission of promoting Responsible Data Science practices.

## Product

DSA developed a proof-of-concept (POC) model that identifies historical donation patterns and predicts future contributions.



by Per Karlsson

## Methodology

The POC model created by DSA aims to enhance donor engagement and optimize fundraising strategies through advanced data analytics and machine learning. By assessing the data's risks with stakeholders and engineering pattern matching, we created a comprehensive dataset that maintained anonymity while preserving essential distinguishing features within the data. Key preprocessing steps included data cleaning, transformation, and feature engineering, ensuring data integrity and richness for subsequent analysis. Documenting our process, regular meetings with stakeholders, and moderated internal evaluations enhanced DSA's adherence to the four principles of Responsible Data Science—Fairness, Transparency, Privacy, and Veracity.

Using exploratory data analysis and robust machine learning techniques, we developed and validated predictive models to identify future donation patterns and recommend more personalized engagement strategies. The model was tested using a robust validation process to ensure reliability resulting in an accuracy of 90.1%.

## Project Impact

The model enables the zoo to proactively engage with donors whose interest aligns with supporting its work by outputting a prediction of donation patterns within the next ten years. With this type of informed direction, the zoo can more effectively utilize its budget while securing funds to ensure the long-term sustainability of wildlife health, education, and conservation.



by David Clode

The Data Science Alliance is a San Diego-based 501(c)3 nonprofit on a mission to use the power of data science and AI to drive positive change in our local communities. **Please support our mission by donating or becoming a member!**

