**Algonix: A Custom Machine Learning Library**

**Project Overview:** Algonix is a lightweight and beginner-friendly machine learning library developed from scratch using Python and NumPy. The primary goal of this project was to build a transparent and easy-to-understand library that allows learners and practitioners to dive deep into the core principles of machine learning. By avoiding the use of complex external frameworks like scikit-learn, Algonix empowers users to understand the underlying mechanics of popular machine learning algorithms.

**Key Features:**

* **Supervised Learning Algorithms**
* **Unsupervised Learning Algorithms**
* **Ensemble Learning Algorithms**
* **Optimization Algorithms**
* **Evaluation Metrics**

**Technical Highlights:** Algonix provides custom implementations of key algorithms, making it an excellent tool for those who wish to understand how these algorithms work under the hood. The library is built with Python and heavily leverages NumPy for efficient numerical operations. This allows users to gain hands-on experience with:

* Implementing and tuning machine learning models.
* Working with optimization algorithms like gradient descent.
* Evaluating model performance using common metrics.

Unlike many machine learning libraries that abstract away the inner workings of the algorithms, Algonix gives you the full transparency of how these models are built and optimized. By working directly with the code, users can appreciate the nuances of model training and evaluation. This library is an excellent educational tool for those seeking to deepen their understanding of machine learning without being overwhelmed by complex libraries. The library is available for installation via PyPI. You can install it with the following command:

pip install algonix

**GitHub Repository:** The complete source code is available on GitHub, where you can contribute or learn from the documentation and examples: [GitHub Repository](https://github.com/bhushanzade02/MACHINE-LEARNING)