1. How does your project use AI to help people with sustainability in a way that hasn't been done before?

This project uses AI to identify energy-poor regions and recommend solar energy solutions to regions able to use it. While AI is commonly used in energy prediction models, this project uniquely combines multiple factors—population density, solar irradiance, and electricity access—to create a comprehensive recommendation system. Most advocates also simply seek to optimize the implementation of solar energy into communities without considering their needs and whether they have the resources to actually have solar panels. The Solar Horizon model solves for this, since a solar energy solution would only be recommended to nations who have the capability of installation without incurring severe losses.

2. Describe a challenge you faced. How did you overcome it? How did you reach out for help?

One challenge I faced was gathering reliable and consistent datasets to train the AI model. Some datasets, like solar irradiance and population density, were easy to find, but others, such as economic potential and rural electricity access, were less straightforward. To overcome this, I spent time researching open data sources, like the World Bank and Global Solar Atlas, and cross-referenced them to ensure accuracy. I'm able to now better-understand data preprocessing techniques and how to align different datasets for analysis.

3. What did you learn from this process that will impact the way you interact with technology in the future?

I've learned that technology, especially AI, is not just about solving technical problems—it also requires careful consideration of the societal impact and how it can be used to address real-world issues. For instance, I had to really think about what factors to prioritize going into the model that would accurately reflect what's most important to a community—and I realized that with every project, no matter how technical, it's essential to understand one's target audience. Going forward, I'll approach technology with a mindset that prioritizes not just efficiency but also ethics and inclusion. I'll also be more intentional about using AI and other technologies to address inequalities, particularly in resource allocation and accessibility.

4. Why did you choose this format for your project?

I chose this format—a combination of a prediction tool and a recommendation system—because it is both accessible and impactful. Solar Horizon allows for easy interaction through a command-line interface (or a potential web app), making it user-friendly while also ensuring sustainable practice. By focusing on real-time predictions and clear recommendations, the format aligns with the goal of providing communities with practical guidance on renewable energy adoption.