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PV Validation Hub

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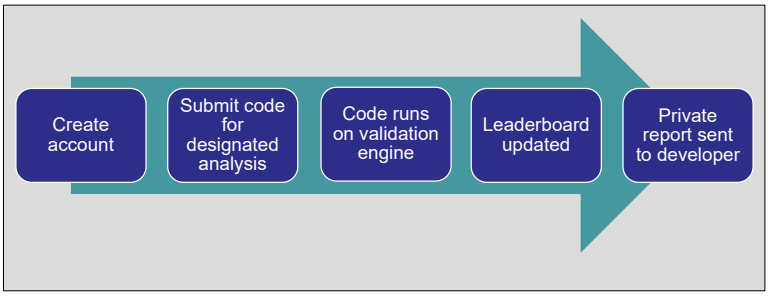
Purpose

- Allow developers to submit PV analytics algorithms for validation.
  - *Degradation, soiling, tilt/azimuth estimation, etc.*
- Well-curated validation data sets and procedures
- Consistent labeled data sets allow for side-by-side comparison of different algorithms
- Public leaderboards and documentation facilitate tech transfer
- Enables rapid development and benchmarking of solar algorithms

Validation Hub algorithm submission process



Validation Hub User Roles

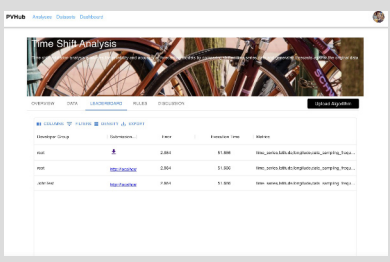
Developer Role

- Public reporting: Scoreboard benchmarking all submitted algorithms' performance
- Private reporting: Detailed results returned to the developer, including how the algorithm performs in certain scenarios (ex: data at different sampling frequencies)

User Role

- View leaderboards and access submitted algorithm solutions for each category

Private report mockup



Public leaderboard mockup

Algorithm Validation

Plans to generate validation tests for the following types of analyses:

- Estimating system degradation
- Estimating soiling rate/ratio
- Detecting time zone/shift issues
- Estimating azimuth and tilt of a PV system
- Determining inverter 'clipping' intervals
- And more!

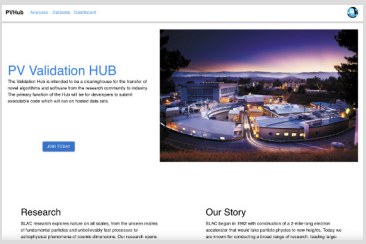
Robust Ground Truth Data Sets

- Labeled measured data
- Synthetic data sets with typical field data issues (capacity issues, outages, soiling, shading, etc.)

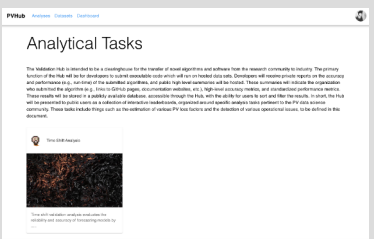
Validation Hub In Action

- Plan to have the Validation Hub available for public use by the end of 2023 (tentatively)
- Currently benchmarking functions in the Python Solar-Data-Tools and PVAnalytics packages and using this as a framework for initial testing in the Validation Hub

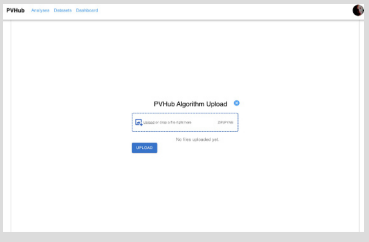
Prototype website screenshots:



Main page of the site



Page to scroll through different analytical tasks



Algorithm upload page

Take our feedback survey!

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