

## Track #4: VoltVisor Challenge: Pioneering Insights in EV Charging & Solar Analytics – Choose EV or Solar

Please note : This statement contains 2 subparts

### 4.1 : EV Charging Solutioning

#### Objective:

Develop a prototype API that not only processes EV charging data but is also capable of generating actionable insights to drive decision-making for businesses and end-users.

#### Deliverables:

APIs offering insights on user behavior, demand prediction, geospatial mapping, and ROI analysis

- API Blueprint: A detailed guide on leveraging the API for insight generation.
- Analysis Framework: Demonstrate the underlying logic and methodology.
- Insight Presentation: A focused demonstration of the generated insights and their potential value.
- \*User friendly frontend portal

#### MarCom Potential:

Data-driven strategies for EV and solar markets, geospatial targeting, and user behavior-focused campaigns.

## Problem Statements:

- User Behavior Analysis:
  - Identify and categorize unique charging behaviors and patterns.
- Efficiency Recommendations:
  - Suggest improvements or alternatives based on observed charging habits.
- Demand Prediction & Gap Identification:
  - Forecast future charging demands and pinpoint potential service gaps.
- Cost-Efficiency Assessment:
  - Analyze the cost-benefit ratio of different charging habits and recommend more economical practices.
- Geospatial Value Mapping:
  - Visualize areas with high charging demand but low infrastructure, indicating potential investment opportunities.

## API Features:

- Deep Data Processing: Go beyond basic analytics to derive meaningful insights.
- Interactive Querying: Allow users to tailor their queries for bespoke insights.
- Dynamic Visualization: Produce adjustable visuals based on evolving data.
- Insightful Outputs: Provide data-driven suggestions and recommendations in a clear JSON format.

## Evaluation Criteria:

2. Depth of Insights: Ability to uncover hidden patterns and trends.
3. Actionable Recommendations: Practicality and applicability of suggestions.
4. User Engagement: Clarity, relevance, and utility of the insights for end-users.

5. Innovation: Creative approaches to data analysis and insight generation.
6. Code and Data Integrity: Robustness, accuracy, and clarity of the analysis

## 4.2 : Solar Energy Solutioning

### Objective:

Create a prototype API in 24 hours capable of processing energy solutions data to generate deep insights that can inform strategy, decision-making, and highlight growth opportunities.

### Problem Statements:

1. Usage Pattern Identification: Discover unique energy consumption or generation behaviors.
2. Optimization Recommendations: Suggest tweaks or overhauls to improve energy utilization or generation.
3. Demand & Supply Forecasting: Predict future energy needs and identify potential supply- demand imbalances.
4. ROI Analysis: Assess the potential returns of different energy solutions based on existing data.
5. Geographical Opportunity Visualization: Map areas with high demand but low energy solutions, signaling lucrative avenues for expansion.

### API Features:

- Deep-Dive Analysis: Delve into datasets to generate meaningful, value-driven insights.
- Customizable Queries: Empower users to tailor their data inquiries.
- Adaptable Visualization Tools: Offer adjustable charts and graphs as datasets change and grow.
- Value-Add Outputs: Ensure outputs provide actionable recommendations and strategic insights

in a neat JSON format

## Evaluation Criteria:

1. **Insight Depth and Breadth:** Unearth a wide array of deep, actionable insights.
2. **Strategic Value:** How the insights can be applied to real-world decision-making.
3. **User-Centricity:** Make sure the insights resonate with and are valuable to the target audience.
4. **Novel Approaches:** Unique methodologies or analytical techniques employed.
5. **Analytical Robustness:** Accuracy, integrity, and reliability of the insights generated.

## Deliverables:

APIs offering insights on user behavior, demand prediction, geospatial mapping, and ROI analysis

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Criteria	Weightage	Definition & Evaluation
Relevance of Insights	25 %	Definition: Pertinence and value of insights in addressing objectives. Evaluation: Insights should address problem statements and offer actionable strategies.
Technical Proficiency	20 %	Definition: Effectiveness of AI, data tools, and technologies used. Evaluation: Review methodology, algorithms, and tools. Consider scalability, reproducibility, and robustness.
Innovation and Creativity	20 %	Definition: Novelty of approach and introduction of unique solutions. Evaluation: Assess uniqueness and introduction of new methods.
User Interface and Presentation	15 %	Definition: Intuitiveness and appeal of the solution's presentation. Evaluation: Consider design, navigation, and clarity of insights.
Scalability and Applicability	10 %	Definition: Adaptability of the solution for larger datasets or related challenges. Evaluation: Consider scalability and adaptability.
Feasibility and Real-world Application	5 %	Definition: Practicality and potential impact of the solution. Evaluation: Consider implementation feasibility and tangible benefits.
Team Collaboration and Dynamics	5 %	Definition: Effectiveness of team collaboration and leveraging of strengths. Evaluation: Review task distribution, communication, and team dynamics.