**College**

SkillCorner game intelligence gives us deeper insight into the flow of game than traditional event data, allowing us to understand player off-ball movement and impact. Houston Dynamo analyst Carlon Carpenter outlined the value of this type of data and key insights that teams can glean from its use in his piece on Medium: <https://medium.com/@carlon.carpenter/evaluating-movement-types-quality-in-the-final-third-00357b700efe>

At US Soccer, we’re looking for new ways to visualize, report, and deliver metrics to our coaching staff and scouts using this data. We’ve provided you with one match of SkillCorner dynamic events and tracking data to explore. Your goal: define a method of player performance evaluation with the data provided and build a tool to showcase it. Examples of evaluation tools/methods include (but are not limited to):

* Slice the event data by player and/or defender and view all the sequences on which they played off each other from the tracking data
* Summarize the defensive structures of both teams and which types of off-ball runs were most effective against those structures
* Compare passing directions/distance while a player was under pressure vs not under pressure and identifies if the player made optimal passing decisions
* Annotate high value possessions by showing pass / shot counterfactuals (via xpass\_completion or xG)
* View a player’s off-ball runs and sort/filter by xThreat/possession\_danger

Creativity is encouraged! You’re free to use other data sources as part of your project, but you are required to use the SkillCorner data provided.  Technical complexity is also encouraged, but the best projects will communicate their key points the most effectively.

**Submission Guidelines**

Your DevPost submission should include:

* All relevant files (including our dataset)
* Any necessary helpers to run your tool (Dockerfile, etc) OR a link to your tool if it is available online
* A README file that includes:
  + a description of your tool, including technical choices you made (libraries, languages, project structure, etc.) and clear instructions on how to use it
  + instructions on how to run your tool, including any dependencies (other than Docker, Python, etc) OR a link to your tool if it is available online

**Evaluation Criteria**

Submissions will be scored on a 1-5 basis on the following categories (1 = low, 5 = high):

* Sporting Value: Is it clear what element of player performance you evaluated? How well did you define what you’re evaluating? Does what you’re evaluating make “soccer sense”? If applicable, have you clearly defined “good” and “bad” performances? What factors are you / are you not considering?
* Communication: How well have you translated data insights to soccer concepts for your target audience (coaches + data-savvy analysts)? How well did you explain your project from base principles? Did you check your assumptions?
* Technical Complexity: did you make the most of the time provided? Do the technical choices you made make sense for the evaluation method you chose?
* Reproducibility/Extensibility: Could we plug in a different game(s) and still be able to use the tool? What steps would you have to take to scale this project?

The questions provided for each category are merely reference points – they may not apply to all types of submissions.

**Learning Resources**

* SkillCorner data overview: <https://medium.com/skillcorner/a-new-world-of-performance-insight-from-video-tracking-technology-f0d7c0deb767>
* SkillCorner data glossary: <https://skillcorner.crunch.help/en/glossaries>
* SkillCorner open data: <https://github.com/SkillCorner/opendata>
* Soccer analytics handbook: <https://github.com/devinpleuler/analytics-handbook>
* Friends of Tracking tutorials: <https://www.youtube.com/channel/UCUBFJYcag8j2rm_9HkrrA7w>
* McKay Johns tutorials: <https://www.youtube.com/@McKayJohns/videos>
* Application of SkillCorner Game Intelligence Data: <https://medium.com/@carlon.carpenter/evaluating-movement-types-quality-in-the-final-third-00357b700efe>

**Restrictions**

* Please do not submit the dataset provided to any LLM/GPT-based tools (online or otherwise) for analysis and exploration.
* Please do not upload the dataset provided to any online code repository that is publicly accessible.
* Please do not share the dataset outside of this hackathon.

**High School**

At US Soccer, we’re looking for new ways to visualize, report, and deliver metrics to our coaching staffs and scouts using SkillCorner data. As part of this project, you’ll be trying to improve a part of our post-match reports by creating visuals to show how a goal was scored. Work with your team and mentor to pick one of the options below to build a visual + a presentation explaining your visual and your findings. Make sure your presentation answers the key question (in **bold**) provided using your visual -- we’ve provided some sub-questions to answer to help you along the way.

1. Highlight how the ball moves through the sequence leading to the goal – **how did the attacking team build up to the goal?**
   1. How many passes did they take to get from the defensive third of the field to the attacking third of the field? How much time did they take to get to the attacking third?
   2. Were their passes to the outside of the field at first and then to the inside of the field? The reverse? Did they stay all inside?
   3. Did they try to get the ball to a specific player? Did they key on a specific defender during the sequence?
2. Show where all 22 players and the ball were at the time of the shot that led to the goal – **did the shooter make a good choice to shoot?**
   1. How far from the goal was the shooter?
   2. How close were the nearest defenders?
   3. Where was the goalkeeper in the frame of the goal?
   4. What passing options did the shooter have available? What passing options did the assister have? Were they good? Bad?

Creativity is encouraged! The best projects will communicate their key question the most effectively.

**Outputs**

Your submission will include two outputs:

1. A visual (preferably matplotlib + mplsoccer): this visual will clearly answer the key question provided for the prompt.
2. A presentation (Google Sheets, Keynote, Powerpoint, etc.): this presentation will explain the visual's design and development process, answering the sub-questions provided + detail the high-level tasks and subtasks undertaken to answer each part of the chosen prompt.

**Submission Guidelines**

Email the following materials to [aeaswaran@ussoccer.org](mailto:aeaswaran@ussoccer.org) with the subject “[Georgia Tech Hackathon -- High School Submission] <your team name here> - Prompt <prompt number>”

* Your presentation
* Your visual
* A link to your Google Colab notebook

**Evaluation Criteria**

Submissions will be scored on a 1-5 basis on the following categories (1 = low, 5 = high):

* Completion: did your presentation answer the big question in the brief? Does your visual accomplish the task you chose?
* Communication: How clearly have you communicated what we asked in the brief via the visualization you built? Could your visual stand on its own without the presentation and communicate what you wanted it to?
* Creativity: What aesthetic/creative choices (use of color, shape, etc) did you make to better explain your findings?

**Learning Resources**

* SkillCorner data overview: <https://medium.com/skillcorner/a-new-world-of-performance-insight-from-video-tracking-technology-f0d7c0deb767>
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* McKay Johns tutorials: <https://www.youtube.com/@McKayJohns/videos>
* Mplsoccer documentation: <https://mplsoccer.readthedocs.io/en/latest/index.html>
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