Blacksmith Shop 3D Scan

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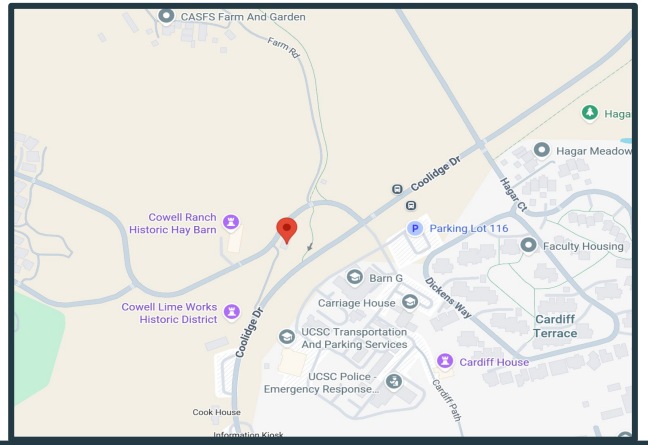
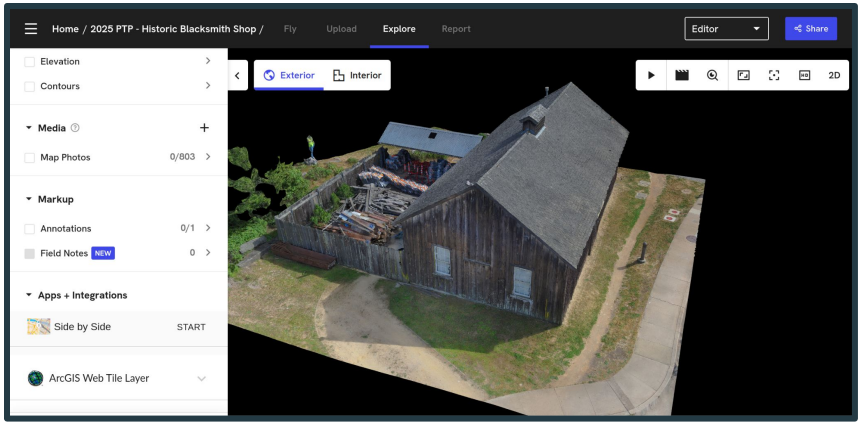
Our Project

- Using 3D scanning and drone technology to create a 3D model of the Blacksmith shop
- Create a digital model of the shop for the school archives
- Explore 3D scanning tech, drone videography, and its utility



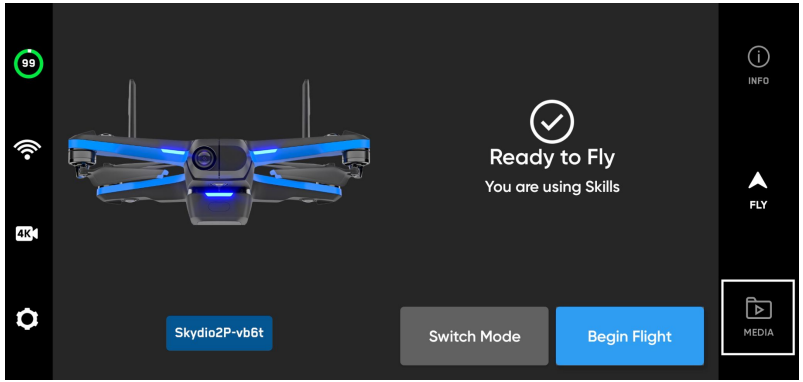
The Power of Drone Scanning

- Drones offer the ability to pictures from many perspectives
- Amazing for constructing 3D scans
- How good are they at this, and how useful are 3D scans?



Methodology (On site)

- Documenting the flight conditions in area of flight prior to flight on a flight request form.
- Setting flight parameters for the Skydio Drone, then it automatically takes the necessary photos.



Methodology (Data Processing)

- The Skydio takes the photos, which are combined into a point cloud through DroneDeploy.
- We take the point cloud and convert it into a mesh using CloudCompare

Our blacksmith shop as a mesh in CAD (Onshape). With this, we can 3D print the model.

Methodology (Videography)

- Example of a videography shot we took
- We used the DJI Mini for videography shots, with a focus on "marketing" the structure and showing our process of scanning it

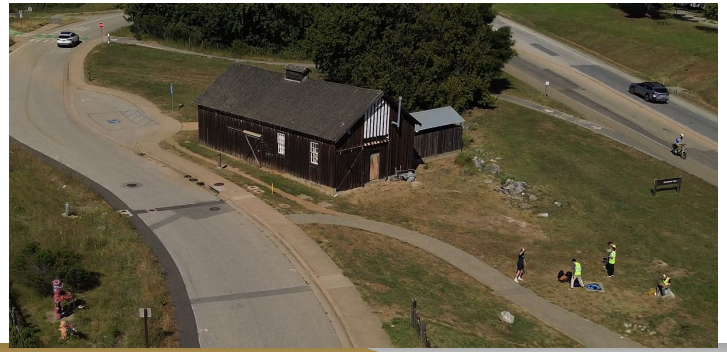
Hurdles and Successes

- The place is somewhat precarious – confined fenced area and a big tree.
- Weather can make shots difficult
- We don't have much experience processing point clouds

- The tools are incredibly intuitive once you get used to them
- Our purpose and process is very well defined → we knew exactly what to do

Future Applications

- The scan resolution could be better
  - Especially the fenced off area
- Consider doing an internal scan (feature is offered with the Skydio)
- Use faster computer/desktop for higher resolution renderings on Cloud Compare



Our Video!

(and the 3D print)

Thank you! Questions?