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Physical to Digital - Making Geospatial Data Accessible to Everyone

Internship Overview
Modern technologies can transform real places into incredibly detailed digital environments. From drone LiDAR and photogrammetry to Matterport 3D models, we can now capture and recreate the physical world with remarkable detail.

However, much of this information remains difficult for everyday people to access, visualize, and understand. Our mission is to bridge that gap.

Through this internship, the student will explore how complex geospatial information can be transformed into interactive digital experiences that support education, marketing, planning, and other real-world applications.

The student will learn emerging visualization technologies, work with actual geospatial datasets from Guam, and help develop a working digital experience that demonstrates the potential of digital twins and interactive 3D environments.

Scope of Work & Learning Objectives

A. Learn Geospatial & Immersive Technologies
The intern will explore how different technologies capture and represent the physical world, including drone LiDAR, photogrammetry, GIS, and 3D spatial scanning.

With guidance from the mentor, the student will receive hands-on exposure to tools such as:
- QGIS and ROCK Desktop: Preparing and exploring geospatial datasets.
- Potree: Making large LiDAR point clouds accessible through web browsers.
- Matterport and CAPTUR3D: Creating and enhancing immersive 3D experiences.
- 3DVista: Developing interactive virtual tours and guided digital experiences.

B. Build an Interactive Digital Experience
The intern's primary project will be to help develop a working prototype by leveraging approved geospatial datasets from 2cofly.

The experience may feature:

- Interactive 3D terrain and LiDAR visualization.
- Digital representations of buildings and physical environments.
- Immersive Matterport or 3D virtual tours.
- Interactive information layers, annotations, and guided experiences.

The project will demonstrate how the same digital information can serve different industries, such as helping students understand terrain, allowing customers to explore properties remotely, or helping stakeholders visualize development sites.

C. Evaluate Practical Applications
The intern will explore how interactive digital experiences compare with traditional maps, images, and presentations.

Activities may include evaluating website performance, ease of navigation, information clarity, and how effectively users can explore and interpret spatial information.

Where appropriate approvals are obtained, the student may conduct a small user evaluation to gather feedback and identify opportunities for improvement. Otherwise, technical testing and structured expert reviews will be used.

Phase / dates	Activities
1 | Jan 25 - Feb 12	Training, dataset permissions, literature review, study area and prototype plan
2 | Feb 15 - Mar 19	QGIS and point-cloud preparation; initial Potree prototype; mentor QA
3 | Mar 22 - Apr 16	Guided learning flows; Matterport/3DVista integration; usability refinement
4 | Apr 19 - May 7	Authorized user evaluation or non-human technical review; analysis
5 | May 10 - May 21	Final prototype, technical documentation, symposium and reporting

Expected Student Deliverables
By the conclusion of the internship, the student is expected to have:

1. Developed practical technical skills using geospatial visualization, interactive web technologies, and immersive 3D platforms.
2. Helped build a functional interactive experience using approved geospatial and spatial-capture data from Guam.
3. Documented practical applications and findings, including the benefits, challenges, and limitations of making spatial information accessible to nontechnical audiences.
4. Submitted the required NGSG progress and final reports, documenting project development and learning.
5. Delivered a professional symposium presentation featuring a demonstration of the completed project.

Mentorship & Supervision
Daniel Quitigua will serve as the primary mentor throughout this internship, assisting in interactive development, digital experience design, project management, and technical communication.

2cofly will provide additional support in geospatial expertise, approved mapping datasets, and guidance on LiDAR, photogrammetry, and spatial data interpretation.

The student will participate in regular progress discussions and maintain an activity log. All project activities will be supervised, and only appropriately authorized datasets and spatial models will be used.

Intended Outcome
Our goal is for the student to complete the semester having contributed to something tangible, meaningful, and innovative.

By the end of the internship, the student should understand how real-world environments are digitally captured, how complex spatial information becomes an interactive experience, and how these technologies can benefit different industries.

We want the student to leave with practical technical skills, a working project they helped create, and the confidence to demonstrate how technology can transform the way people experience the physical world.

Daniel Quitugua
Project Manager, Klara Marketing