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I am an expert in using a variety of GIS and procedural 3D softwares to capture and process large photorealistic photogrammetry datasets of real world environments. I have developed a deep knowledge of every step of the capture pipeline from 3D scanning to organizing the data to preserve its photorealistic character, all while operating within the technical constraints imposed by the publishing platform. Lately my primary focus is on using the Python and VEX programming languages in the Houdini environment to create custom pipeline tools that process and organize photogrammetry data for a variety of purposes ranging from Virtual Reality experiences to generating Machine Learning datasets.. I also have a proven ability to work collaboratively in complex environments, having worked on a variety of development projects in the Middle East.

Experience

- **Self Employed Freelance**
  Aug 2023 - Present, Brooklyn, NY
  - Using photogrammetry capture techniques and custom developed Houdini pipelines to generate large-scale imagery datasets for ML solutions. I am also developing custom Houdini workflow tools for a company that needs to automate the processing of raw data from a large number of 3D scans of human subjects.
- **Photogrammetrist, BRINK XR**
  Jun 2022 - Aug 2023
  - Captured photorealistic scans of natural locations around the world including a month-long scanning trip to Madagascar for a 6DOF VR travel experience. I was also responsible for using a custom Houdini pipeline to process the raw photogrammetry data so that it is lightweight enough to use in standalone VR.
- **Self Employed Freelance**
  May 2018 - *May 2022, New York, NY*
  - Various photogrammetry and photography projects in the VFX and VR industries, as well as continued work with cultural heritage nonprofits. Notable projects include scanning an island for the VFX in Meg 2, developing custom flight software that uses drones and survey-grade GPS to individually photograph over 20000 graves in a cemetery.
- **Communications Officer, Abraham Path Initiative**
  Sep 2014 - May 2018, Jerusalem
  - Managed PR, communications, and strategy for a small NGO developing hiking trails in a complex geopolitical environment.
- **Project Manager, Culture Routes Society Turkey**
  Nov 2012 - May 2014, Antalya, Turkey
  - Designed and photographed for hiking guidebooks for regional trails, and managed development of iPhone trailguide apps.

Skills and Preferred Softwares

- **Houdini** - I use it for developing custom pipelines that process photogrammetry data procedurally. I've used it to generate photorealistic virtual reality experiences, prepare and validate large quantities of 3D models for a color 3D printing pipeline, and also am currently working on developing custom tools to generate large machine learning datasets.
- **Reality Capture** - This is my primary tool for processing photogrammetry scans. I have also used Open Drone Map to generate quick surveys in the field.
- **Python -** I use python to efficiently manage and process large amounts of 3D files, and create user interfaces using PyQt5 and similar libraries. I also use python scripts to generate custom drone flight plans in QGIS.
- **VEX** - I use the VEX language when I need more efficient processing of 3D data than what is possible with Python. It allows me to go under the hood and efficiently script low level manipulations of every individual point, vertex, and polygon across in a 3D model.
- **QGIS** - Open source GIS mapping software. I use this to write custom tools that allow me to generate automatic flight patterns for efficient capture of large photogrammetry and ML datasets.
- **ZBrush** - I'm increasingly moving away from any manual processing of data, instead relying entirely on procedural workflows, but I started out in 3D by learning how to process photogrammetry in ZBrush so I can use it quite well.
- **Mari** - this is my preferred tool for working with textures because of its UDIM based workflow and ability to handle the extremely large meshes I generate when scanning large environments.
- **RizomUV** - this is my preferred tool for unwrapping geometry and preparing them for textures. It integrates well with both ZBrush and Houdini, and allows for a great deal of fine tuning.