

**Representation of Ancient Archeological Site Data:
From 2D datasets to 3D Virtual Environments
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Gaining insights into an archeological site, such as who was there, when, and why, are key to interpreting a site and its occupants. The method used to answer these questions is manual excavation of a site, where archaeologists' findings are recorded with photographs, level sheets, etc. This form of data collection translates three dimensional data into two dimensional representations and, though the data and accompanying notes are extensive, there remains a challenge when interpreting two dimensional data back into three dimensions. Cognitive limitations and sheer mass of data make it challenging for both archeologists and the general public to visualize data, limiting its accessibility.

My summer was spent at the Virtual Environment and Multimodal Interaction (VEMI) Lab at the

which was active roughly 6,000 years ago and is potentially the oldest defensive site in the New World. This data included drone images and heightmaps, photos taken from an iPhone 6 (to accurately texture the environment and model level excavation), historical water line records, and more traditional archaeological data such as level sealed model of the area around the site. The ocean was added as well as an accurate mo

Andes in the background (not pictured). In addition to the construction of the virtual environment, I also create a simulation of how the granite structure located at the site hypothetically could have eroded due to wind. Lastly, I created a system to see the different strata of an archeological dig (below ground), which was a previously unexplored use of virtual reality in archeology.

Faculty Mentor: Stacy Dooreore