School of Earth and Environmental Sciences
Spring 2024 Colloquium Series

Wednesday, October 23, 2024
12:15 PM -1:30 PM
Science Building C-207

Zoom ID: 865 5163 5654
Passcode: 684900

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PaleoScan: Large-Volume Fossil Scanning

Fossils are crucial for understanding our natural history and the digitalization of fossils has paved the way for paleontologists to share and study them in greater detail. Yet, many fossil-dense regions, in particular low- and middle-income countries, lack the resources to digitalize their vast collections.

This project reports on a collaboration between paleontologists and computer scientists to design, build, and operate a device that can be deployed in the field for digitizing a collection of thousands of fossils. We introduce PaleoScan, a user-friendly, cost-effective, high-volume scanner designed to expedite the digitization of extensive fossil collections. PaleoScan is a self-contained 3D scanning system consisting of a light and compact mirrorless camera, a microcontroller, a ChArUco calibration board, and user-controlled LEDs. Software and data processing is cloud-based, where the user interacts with the system through a web application. We deployed PaleoScan in a museum in Brazil with a world-class fossil collection. Our early results reveal its potential to revolutionize the scanning process for fossils.