Large-Scale, Real-Time 3D Image Reconstruction
Using Multi-View Stereo Algorithms

National Center for High-performance Computing, Taiwan
Ashley He
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Successes thus far

- Successfully integrated Bundler/SfM, CMVS, and PMVS2 software together. This was done by:
  - First ensuring that I could compile and run them individually.
  - Fixing issues in the source code and any incompatibilities with how I set up the way the software would be run.
  - Writing a Python script that would run the software sequentially.
- Identified and addressed bottlenecks in the Bundler software.
  - Replaced Sift with SiftGPU.
Successes thus far

- Significantly reduced execution time of Bundler by successfully getting SiftGPU to use CUDA, which had been a challenge due to the hardware and remote access issues I had faced.

  - Currently working on addressing the bottleneck at the matching features stage. A large amount of time was spent going back and forth on how this part should be implemented, but I now have a very structured outline for the code. Many functions have been written and need to be tested.
Goals for the next two weeks

- Finish writing and testing code that replaces KeyMatchFull with SiftGPU's matching algorithm.
- Parallelize one of the following: SiftGPU, SiftMatch, or PMVS2, depending on which part of the code will benefit the most from it.
Culture

Exploring National Chiao Tung University

(above) Library + elephant artwork; (below) Sculpture

Waffle stand on campus everyone raves about

Bamboo lake, scenic spot located at the campus' entrance
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