



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

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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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