Photogrammetry

Making 3D Models from Photographs

Christin Lampkowski, Special Collections and Digital Projects Assistant
clampkow@uncc.edu
What we’ll cover

- What is a 3D model and photogrammetry?
- How to take photos
- Introduction to ReCap Photo - creating and editing a 3D model
- What can you do with your 3D model?
The Basics

Don’t worry, we’re all learning!
Parts of a 3D Model

- Vertices or Points
- Polyhedral Mesh
- Faces
Photogrammetry
Photogrammetry Process

1. Take Photos
2. Edit Photos
3. Upload to Software
4. Generate 3D Model
5. Edit 3D Model
6. Share 3D Model

Icons by Slide Carnival
Where do I start?

Atkins can help with equipment, guides, and workshops.
LibGuide

- Intro, taking and editing photos, downloading and using photogrammetry software

Workshops

- Intro to 3D modeling with photogrammetry
Equipment - Photogrammetry Kit

- DSLR Camera
- Memory Card & Cable
- Tripod
- Lighting Kit
Taking Photos

● Even lighting
● Solid, consistent background
● Take photos from different angles
  ○ Sides, top, bottom
  ○ Turn object and keep camera stationary
● Take at least 20-30
  ○ more images = more detail
  ○ But... more images = more processing time
Editing Photos

- Photoshop - Adobe Creative Cloud
- Multimedia Lab computers
- Masking background
I’ve got my photos... now what?

Photogrammetry Software
Autodesk ReCap Photo

- Free Education License
- Download and install on a PC
- Upload photos to generate 3D model
- Built in editing options
Downloading ReCap Photo

Go to https://www.autodesk.com/education/free-software/recap-pro
Get Education Benefits

Country, Territory, or Region of educational institution

Educational role

NEXT

ALREADY HAVE AN ACCOUNT? SIGN IN

Your account for everything Autodesk

LEARN MORE
Create account

First name
Last name

Email

Confirm email

Password

I agree to the Autodesk Terms of Use and to the use of my personal information in accordance with the Privacy Statement (including cross-border transfers as described in the statement).

CREATE ACCOUNT

ALREADY HAVE AN ACCOUNT? SIGN IN

To learn more about our EDUCATION SPECIAL TERMS and information about the US Family Education Rights and Privacy Act (FERPA), click HERE.
ReCap Pro
Capture and integrate reality data directly into your design process with reality capture software and services that work with Autodesk design and creation suites.

Welcome back, Chris

Serial number: 901-
Product key: 919K1
Files size: 2.72 GB
Authorized usage: Install on up to 2 personal devices

An email containing the license information has been sent to you. If you do not see the email in your inbox, please check your SPAM or JUNK folder.

For other ways to find your license information see "Find Serial Numbers & Product Keys for Educational Licenses".

You are receiving an Educational license
Installation restrictions apply
Managing licenses for multiple campuses
Additional steps required for educational institutions

INSTALL NOW
Uploading Photos

Making your 3D model takes time
Editing Your Model

Built in editing features in ReCap Photo
Click and drag over area you would like to select
Use Delete Selection tool or hit Delete key on keyboard to remove selected area of your model
Slice and Fill
Decimate
Detect and fix model issues
Quick Export
Save model for editing in another software
Advanced Export
Save as an STL or OBJ file for printing or uploading into VR
I’ve got a 3D model... now what?

Sharing 3D models online, in VR, and IRL
Sketchfab

- Online platform for sharing models
- Free account available
- Include licensing information - [Creative Commons](https://creativecommons.org)
Poly

- Upload to Tilt Brush
- Interact & manipulate in VR
3D Printing

- Have it printed in our Makerspace
- Instructions [https://guides.library.uncc.edu/area49/3dprinting](https://guides.library.uncc.edu/area49/3dprinting)
Woah, that was a lot!

Don’t worry...
It’s all in the Photogrammetry LibGuide

https://guides.library.uncc.edu/photogrammetry
Questions or need help?

Christin Lampkowski
Special Collections and Digital Projects Assistant
clampkow@uncc.edu
Can you think of something you would like to 3D model?

How could you use 3D models?