

# SlicerAutoscooperM

## ASB 2025

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# Installation of Slicer & SlicerAutoscooperM



# Download Slicer from [download.slicer.org](https://download.slicer.org)



3D Slicer

Application ▾ Support ▾ Solutions ▾ Developers ▾ About ▾

You are one click away from downloading 3D Slicer, a free and open-source platform for analyzing and understanding medical image data. Created through multiple grants from the US National Institutes of Health (NIH) over almost two decades, Slicer brings powerful medical image processing, visualization, and data analysis tools within reach of everyone.

Slicer is built and tested on many hardware and software platforms. 3D Slicer runs on modern Windows, macOS, and a variety of Linux distributions.  
[Read about system requirements.](#)



Windows



macOS



Linux

Stable Release  
[access older releases](#)

5.8.1  
revision 33241  
built 2025-03-03

[browse extensions](#)

5.8.1  
revision 33241  
built 2025-03-03

[browse extensions](#)

5.8.1  
revision 33241  
built 2025-03-03

[browse extensions](#)

Preview Release

5.9.0  
revision 33809  
built 2025-07-26

[browse extensions](#)

5.9.0  
revision 33809  
built 2025-07-27

[browse extensions](#)

5.9.0  
revision 33809  
built 2025-07-27

[browse extensions](#)

# Installing SlicerAutoscooperM from the Slicer Extensions Manager

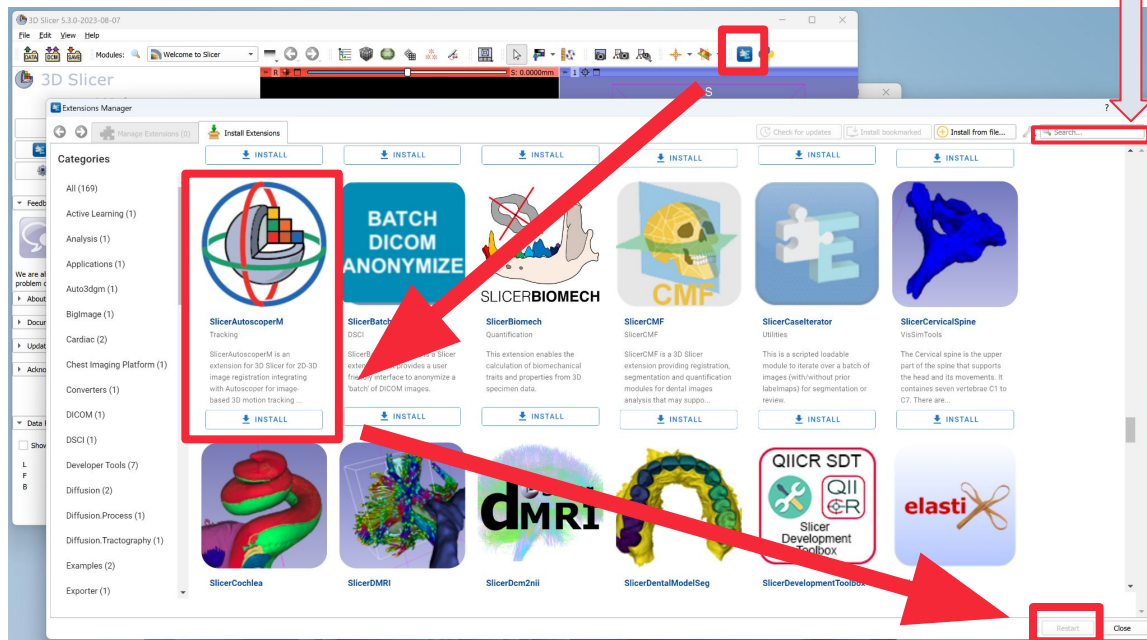
*\*tip\**  
type 'auto' in the search bar

After starting Slicer

(1) Open Extensions Manager

(2) Install SlicerAutoscooperM

(3) Restart Slicer



Inputs

nVideoRadiography  
Calibration  
Bone/implant models



3D Slicer

Open-source desktop application for  
image analysis & visualization

Inputs

4DCT  
3DCT  
Bone/implant models



3D Slicer extension

**SlicerAutoscooper<sup>M</sup>**

Autoscooper  
Pre-Processing

**Autoscooper**

*Tracking Algorithm*

Particle swarm optimization (PSO) with a  
normalized cross correlation heuristic

[Autoscooper space]

**Hierarchical 3D Registration (3DH)**

*Tracking Algorithm*

Automated model subvolume ROI  
Elastix Registration (itk)

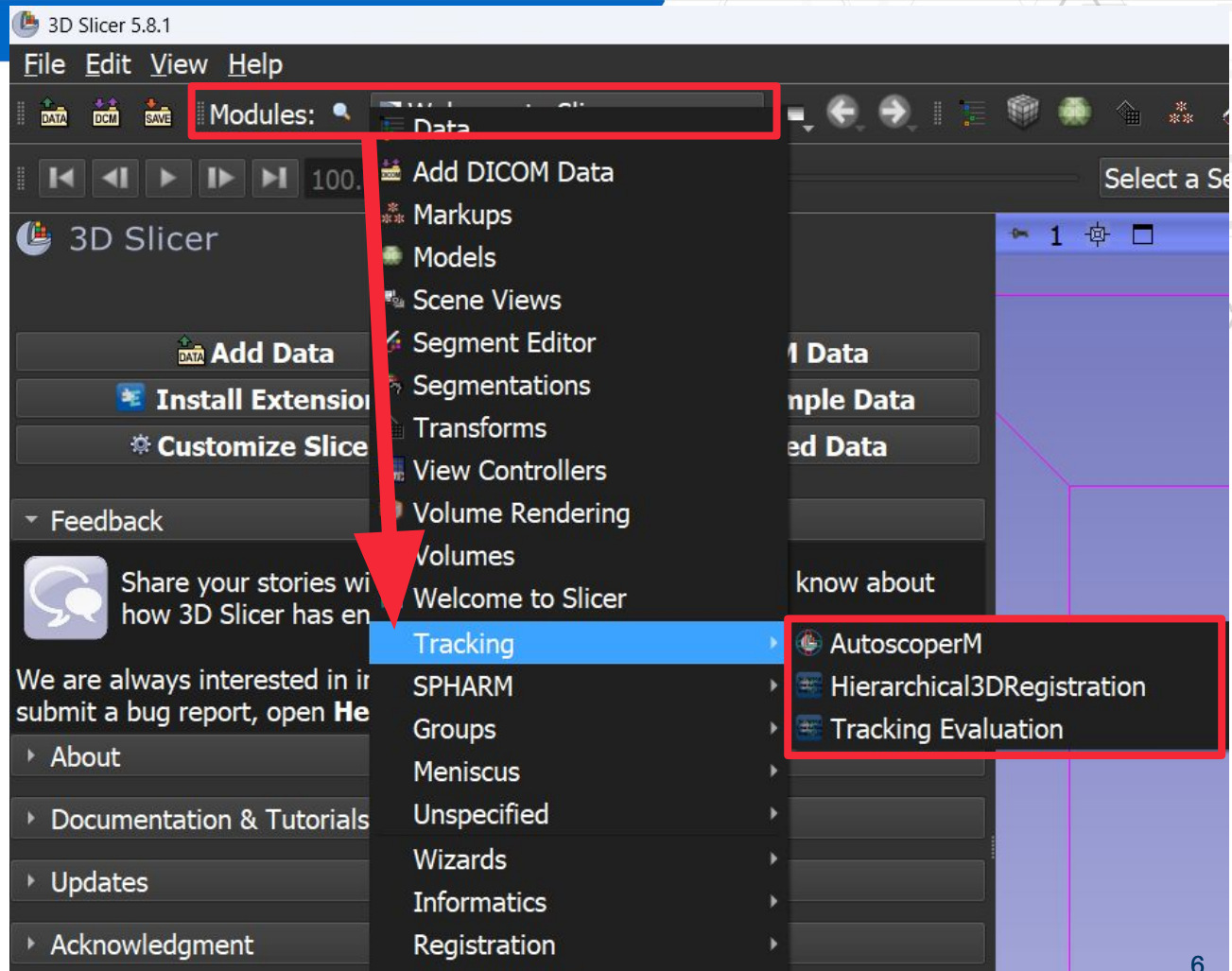
[CT space]

Outputs

Multibody Registration

# SlicerAutoscooperM

After restarting,  
navigate to the  
Tracking category in  
the Module dropdown:



# SlicerAutoscooperM

## AutoscooperM, PreProcessing | Hierarchical 3D Registration

- [Getting Started](#)
  - [Tutorials](#)
  - [Get Help](#)
  - [Discourse category](#) (Slicer forum)
  - [Homepage](#)
- 
- ◆ [Slicer Documentation](#)
  - ◆ [Brown Biomechanics GitHub](#)



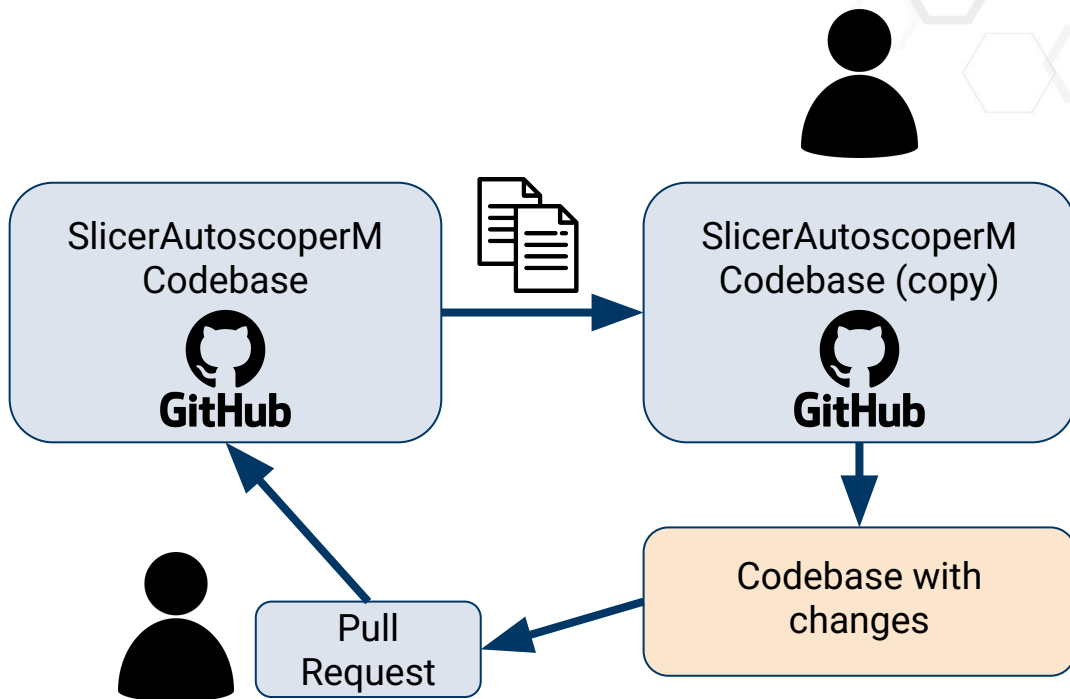
For more details:

<https://autoscooper.readthedocs.io>

<https://slicer.readthedocs.io>

# Contributing guidelines

1. Fork and clone the Git repository
2. Create a branch
3. Push the branch to your GitHub fork
4. Create a Pull Request





# Working with us



BROWN



TRAINING



SUPPORT



DEVELOPMENT



GRANT  
COLLABORATION

- **Training:** Interactive sessions with our engineers, office hours, workshops, seminars
- **Support:** Work with our team, Q&A, small prototypes
- **Development:** Create your own solution, open source or otherwise, advanced technical capabilities, many contracting options available
- **Grant collaboration:** Strong track record of successful collaborative partnerships



# Achievements

- **Multi-Institution/Industry Partner 3-year award (NIH R01AR078924)**
- ***Milestones Achieved:***
  - *An Accuracy Assessment of SlicerAutoscooper<sup>M</sup> – Software for Tracking Skeletal Structures in Multi-plane Videoradiography Datasets*  
(J. Biomech, August 2025)
  - **Dedicated module: Registration 3DCT and 4DCT**
  - **Comprehensive documentation, online tutorials, and live discourse**



# Achievements

## *Milestones Achieved:*

### Autoscoper

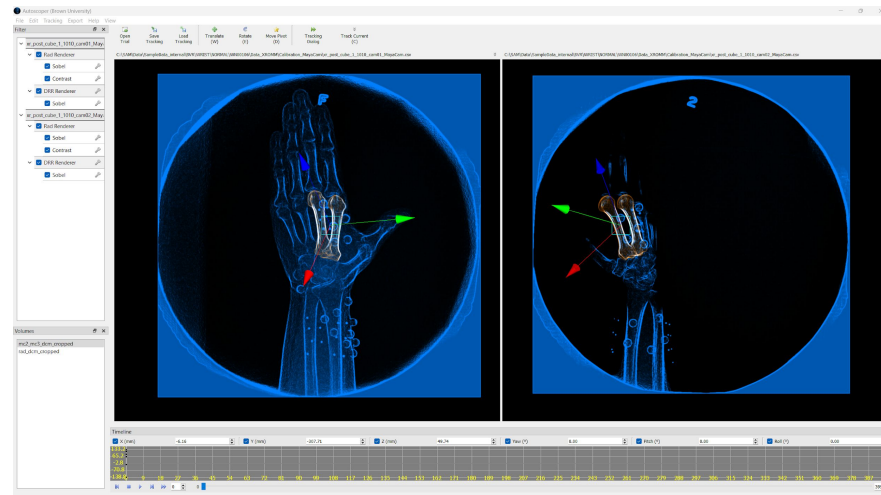
- Modernize CUDA integration (OpenCL Option)
- Bidirectional region bound clip for isolated NCC calculator
- Sample data (knee, wrist, ankle)

### PreProcessing

- Auto Segmentation option
- Cropped PV transform file generation

### Py Autoscoper

- Python socket script API





## *Future*

## *Directions*

- **Call for Collaboration, Building a community of researchers**

SAM Questionnaire  
for prospective  
collaborators




Scan this QR code to fill out the questionnaire. Thank You!

# How to get in touch

- Discourse forum
- Contact form

joseph\_crisco@brown.edu





## SlicerAutoscooper<sup>M</sup>

SlicerAutoscooperM is a Slicer extension currently under development, dedicated to image-based 3D motion tracking of skeletal structures.

Community SlicerAutoscooperM tags Latest Top New Topic

Topic	Replies	Views	Activity
<b>About the SlicerAutoscooperM category</b> SlicerAutoscooperM is a Slicer extension currently under development, dedicated to image-based 3D motion tracking of skeletal structures. Our goal is to provide researchers and developers with a powerful tool for precise... read more	0	227	Aug 2023
Invalid transformation chosen error - 4DCT registration	0	23	Apr 22
Unable to see slicer autoscooper in extensions	6	30	Apr 21

## Contact the Team

If you prefer to reach out privately instead of posting in the public Discourse forum, you can use the form below to contact the team directly.

First Name	Last Name
<input type="text"/>	<input type="text"/>
Email	
<input type="text"/>	
Message	
<input type="text"/>	
<input type="button" value="Send Message"/>	