

14.09.2024

# UNDO ↻ Human-robot Interaction

Installation Party!

1. Install
  - a. Rhino3D version 7.0 (trial version available)
  - b. Anaconda
  - c. Visual Studio Code (or a source-code editor of your choice)
  - d. Github desktop (optional, alternatively, you can use Git in the command line)
  - e. Docker
  - f. Agisoft Metashape (trial version **pro**)
2. Create a Conda environment with COMPAS, COMPAS\_FAB AND COMPAS\_RRC (see instructions)
3. Clone the course repository
4. Install *undo* library
5. Install Metashape module as a regular wheel package
6. Configure Visual Studio Code

# Step 1 : Install Rhino



<https://www.rhino3d.com/download/>

## Downloads

### Für Windows

#### Komplette Installation

- **Rhino 7 für Windows - Einmalige Testversion** - Probieren Sie diese **Vollversion** 90 Tage lang aus. Nach Ablauf des Testzeitraums können Sie nicht mehr speichern und keine Plug-ins mehr laden, es sei denn Sie **erwerben** einen Lizenzschlüssel.
- **Rhino 7 für Windows** - *(Lizenzschlüssel für Rhino 7 ist erforderlich)*
- **Flamingo nXt 5** - Rendering für Rhino
- **Bongo** - Designanimation für Rhino (30tägige Testversion)

#### Work-in-Progress

- **Serengeti Build** - die neueste WIP  
*(Lizenzschlüssel für Rhino 7 ist erforderlich)*

#### Archive

- **Rhino 6 für Windows** - *(Lizenzschlüssel für Rhino 6 ist erforderlich)*
- **Rhino 5 für Windows** - *(Lizenzschlüssel für Rhino 5 ist erforderlich)*
- **Sprachpaket für Rhino 5 für Windows** - Benutzeroberfläche und Dokumentation

### Für Mac

#### Komplette Installation

- **Rhino 7 für Mac - Einmalige Testversion** - Probieren Sie diese **Vollversion** 90 Tage lang aus. Wenn Sie nach Ablauf des Testzeitraums speichern möchten, müssen Sie einen Lizenzschlüssel **erwerben**.
- **Rhino 7 für Mac** - *(Lizenzschlüssel für Rhino 7 ist erforderlich)*

#### Work-in-Progress

- **Serengeti Build** - die neueste WIP  
*(Lizenzschlüssel für Rhino 7 ist erforderlich)*

#### Archive

- **Rhino 6 für Mac** - *(Lizenzschlüssel für Rhino 6 ist erforderlich)*
- **Rhino 5 für Mac** - *(Lizenzschlüssel für Rhino 5 ist erforderlich)*

## Step 1 : Install Anaconda



<https://www.anaconda.com/products/distribution#Downloads>

### Anaconda Installers

#### Windows

Python 3.9

64-Bit Graphical Installer (621 MB)

#### MacOS

Python 3.9

64-Bit Graphical Installer (688 MB)

64-Bit Command Line Installer (681 MB)

64-Bit (M1) Graphical Installer (484 MB)

64-Bit (M1) Command Line Installer (472 MB)

#### Linux

Python 3.9

64-Bit (x86) Installer (737 MB)

64-Bit (Power8 and Power9) Installer (360 MB)

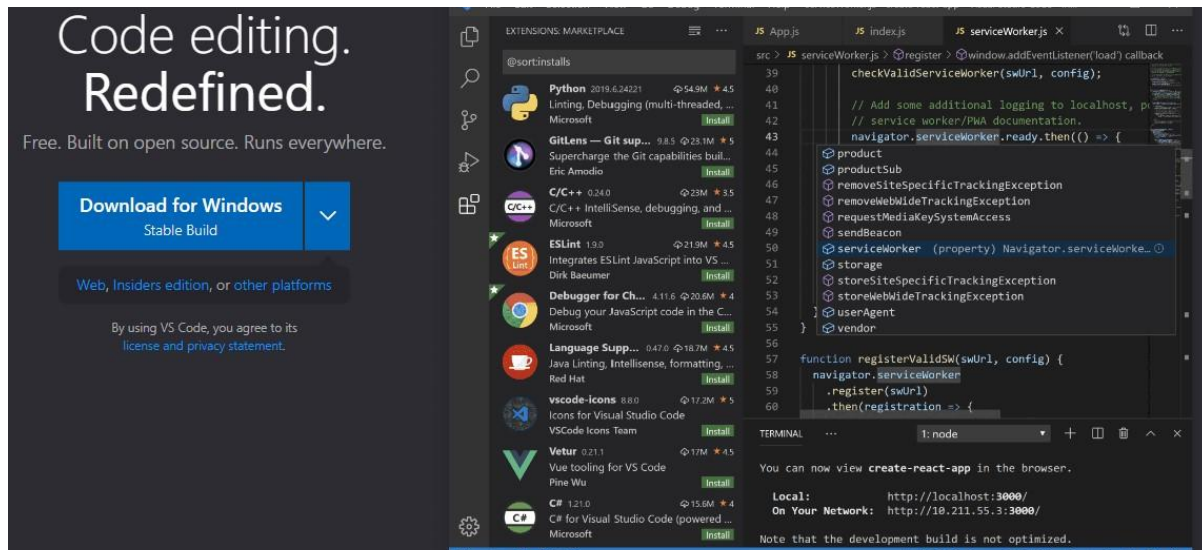
64-Bit (AWS Graviton2 / ARM64) Installer (534 MB)

64-bit (Linux on IBM Z & LinuxONE) Installer (282 MB)

## Step 1 : Install Visual Studio Code



<https://code.visualstudio.com/>



The image shows the Visual Studio Code website on the left and the application interface on the right. The website features the text "Code editing. Redefined." and "Free. Built on open source. Runs everywhere." with a "Download for Windows Stable Build" button. The application interface shows the "EXTENSIONS: MARKETPLACE" sidebar with a list of extensions like Python, GitLens, C/C++, ESLint, and others. The main editor area displays a JavaScript file named "serviceWorker.js" with code for registering a service worker. The terminal at the bottom shows the command "npx create-react-app" and the output indicating the app is ready to be viewed in the browser.

Code editing.  
Redefined.

Free. Built on open source. Runs everywhere.

Download for Windows  
Stable Build

Web, Insiders edition, or other platforms

By using VS Code, you agree to its  
license and privacy statement.

EXTENSIONS: MARKETPLACE

@sortinstalls

- Python 2019.6.24021 54.9M ★ 4.5  
Linting, Debugging (multi-threaded, ...  
Microsoft [Install](#)
- GitLens — Git sup... 0.8.5 23.1M ★ 5  
Supercharge the Git capabilities built...  
Eric Amodio [Install](#)
- C/C++ 0.24.0 23M ★ 3.5  
C/C++ + IntelliSense, debugging, and ...  
Microsoft [Install](#)
- ESLint 1.9.0 21.9M ★ 4.5  
Integrates ESLint JavaScript into VS ...  
Dirk Baumer [Install](#)
- Debugger for Ch... 4.11.6 20.6M ★ 4  
Debug your JavaScript code in the C...  
Microsoft [Install](#)
- Language Supp... 0.47.0 16.7M ★ 4.5  
Java Linting, Intellisense, formatting, ...  
Red Hat [Install](#)
- vscode-icons 8.8.0 17.2M ★ 5  
Icons for Visual Studio Code  
VSCo Icons Team [Install](#)
- Vetur 0.21.1 17M ★ 4.5  
Vue tooling for VS Code  
Pine Wu [Install](#)
- C# 1.21.0 15.6M ★ 4  
C# for Visual Studio Code (powered ...  
Microsoft [Install](#)

JS App.js JS index.js JS serviceWorker.js

```
src > JS serviceWorker.js > register > window.addEventListener('load') callback
39
40
41 checkValidServiceWorker(swUrl, config);
42
43 // Add some additional logging to localhost, p
44 // service worker/PWA documentation.
45 navigator.serviceWorker.ready.then(() => {
46
47   product
48   productSub
49   removeSiteSpecificTrackingException
50   removeWebWideTrackingException
51   requestMediaKeySystemAccess
52   sendBeacon
53   serviceWorker (property) Navigator.serviceWorke...
54   storage
55   storeSiteSpecificTrackingException
56   storeWebWideTrackingException
57   userAgent
58   vendor
59
60 function registerValidSW(swUrl, config) {
61   navigator.serviceWorker
62     .register(swUrl)
63     .then(registration => {
```

TERMINAL 1: node

You can now view create-react-app in the browser.

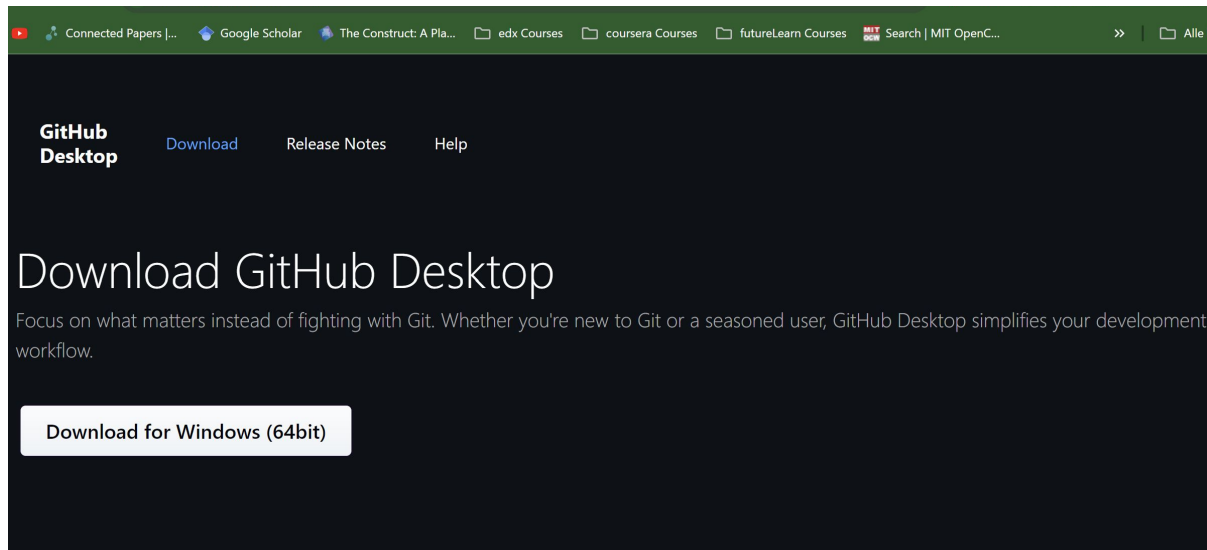
Local: http://localhost:3000/  
On Your Network: http://10.211.55.3:3000/

Note that the development build is not optimized.

## Step 1 : Install Github desktop



<https://desktop.github.com/download/>



## Step 1 : Install Docker



<https://www.docker.com/products/docker-desktop>

# Docker Desktop

Install Docker Desktop – the fastest way to containerize applications.

**Download Docker Desktop**



Apple Chip



Linux



Intel Chip

## Step 1 : Install Agisoft Metashape



<https://www.agisoft.com/downloads/installer/>

# Downloads

[Installer](#)

[System Requirements](#)

[User Manuals](#)

[Geoids](#)

[Sample Data](#)



## Agisoft Metashape 2.1.3

This is the latest released version.

Check Metashape [Tutorials](#) and [User Manual](#) to get started.

### Professional Edition

[Windows](#)

[macOS](#)

[Linux](#)

### Standard Edition

[Windows](#)

[macOS](#)

[Linux](#)

**Note:** Updates to Metashape 2.x are free of charge. To update from Metashape Professional 1.x to Metashape Professional 2.x, you will need to re-enter your license code on launching Metashape 2.x, since Metashape 2.x comes with new license activation system developed by Agisoft. Activation system in Metashape Standard edition remains the same. No need to re-enter license code when updating Metashape Standard edition to version 2.x.



## Step 2 : Create a Conda environment with COMPAS Libraries



```
(base) conda config --add channels conda-forge
```



```
(base) conda create -n undo python=3.9 -y
```



```
(base) conda activate undo
```



```
(undo) pip install compas-rrc==1.1.0
```



```
(undo) pip install compas_fab==0.27.0
```

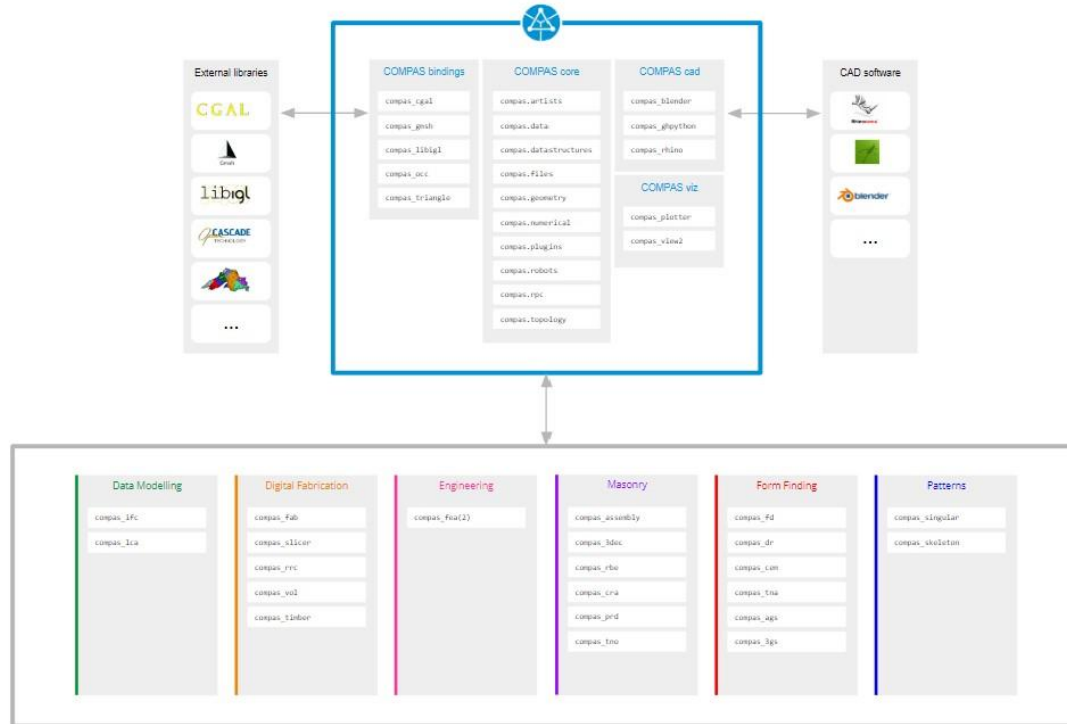


```
(undo) python -m compas_rhino.install -v 7.0
```

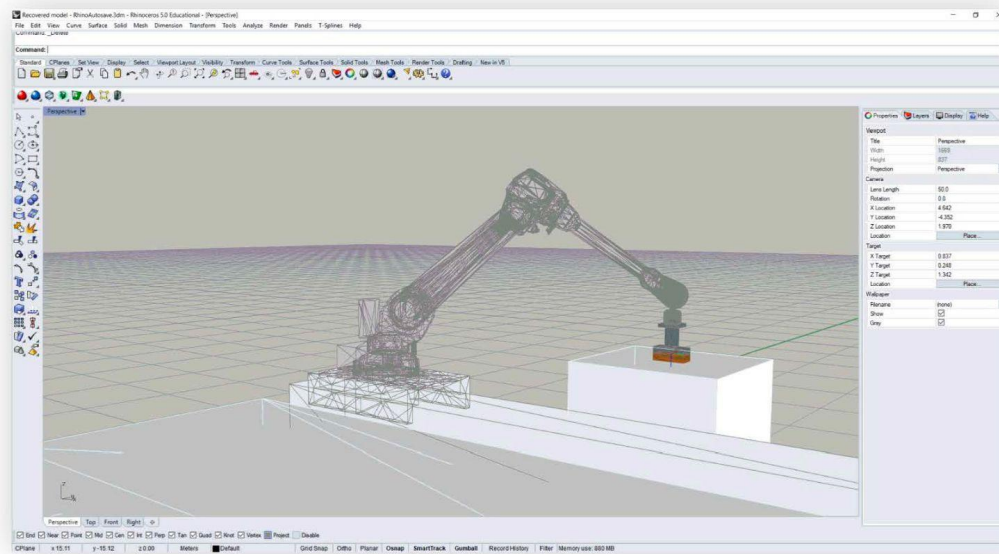




# COMPAS suite

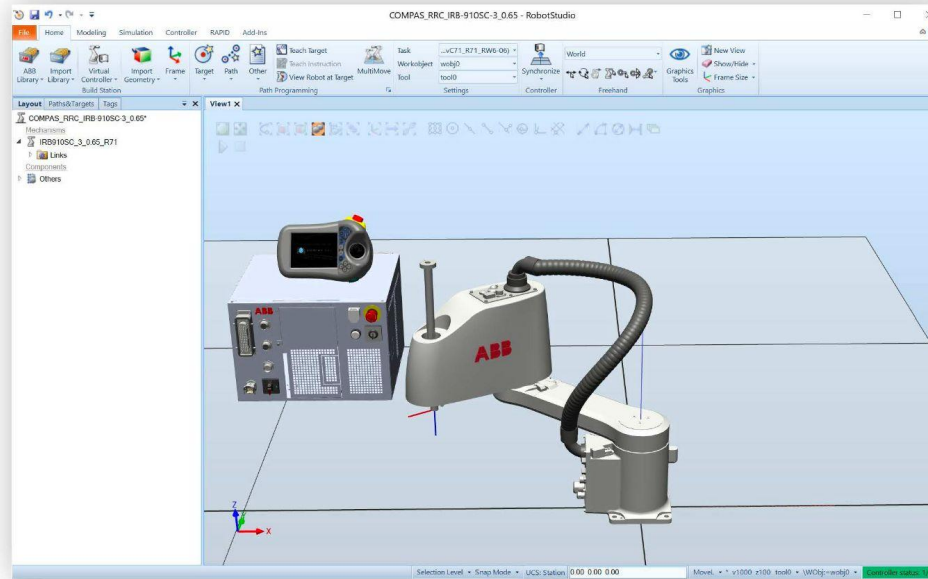


# COMPAS suite



**COMPAS FAB**  
Robotic fabrication package

# COMPAS suite



## COMPAS RRC

Robot control for ABB robots

## Step 2 : Create a Conda environment with COMPAS Libraries



```
(base) conda config --add channels conda-forge
```



```
(base) conda create -n undo python=3.9 compas_rrc=1.1.0 --yes
```



```
(base) conda activate undo
```



```
(undo) conda install compas_fab=0.27.0 --yes
```



```
(undo) python -m compas_rhino.install -v 7.0
```



## Step 3 : Clone the course repository

<https://github.com/CRCL-EPFL/Undo>

The screenshot shows the GitHub repository page for `CRCL-EPFL / Undo`. The repository is public and has 1 branch and 0 tags. The 'Code' dropdown menu is open, showing options to clone the repository using HTTPS, SSH, or GitHub CLI. The URL `https://github.com/CRCL-EPFL/Undo.git` is displayed. The 'Open with GitHub Desktop' option is highlighted with a pink box. The 'Download ZIP' option is also visible. The repository description is 'Repository for the project: UNCL Human-robot Interaction for Re Design and Reconfiguration of Structures'. The repository has 1 star, 3 watchers, and 0 forks.

CRCL-EPFL / Undo

Type to search

Issues Pull requests Actions Projects Wiki Security Insights Settings

Undo Public

Edit Pins Watch 3 Fork 0

1 Branch 0 Tags

Go to file

Add file Code

Local Codespaces

Clone

HTTPS SSH GitHub CLI

`https://github.com/CRCL-EPFL/Undo.git`

Clone using the web URL.

Open with GitHub Desktop

Download ZIP

About

Repository for the project: UNCL Human-robot Interaction for Re Design and Reconfiguration of Structures

Readme Activity Custom properties 1 star 3 watching 0 forks Report repository

Releases

No releases published

## Step 4 : Install undo library

```
(undo) cd C:\Users\eleni\Documents\GitHub\Undo>
```



```
(undo) C:\Users\eleni\Documents\GitHub\Undo> pip install -e.
```





## Step 5 : Install Metashape module as a regular wheel package

<https://agisoft.freshdesk.com/support/solutions/articles/31000148930-how-to-install-metashape-stand-alone-python-module>

on Windows (64-bit)

```
(undo) python3.exe -m pip install Metashape-2.1.2-cp37.cp38.cp39.cp310.cp311-none-win_amd64.whl
```



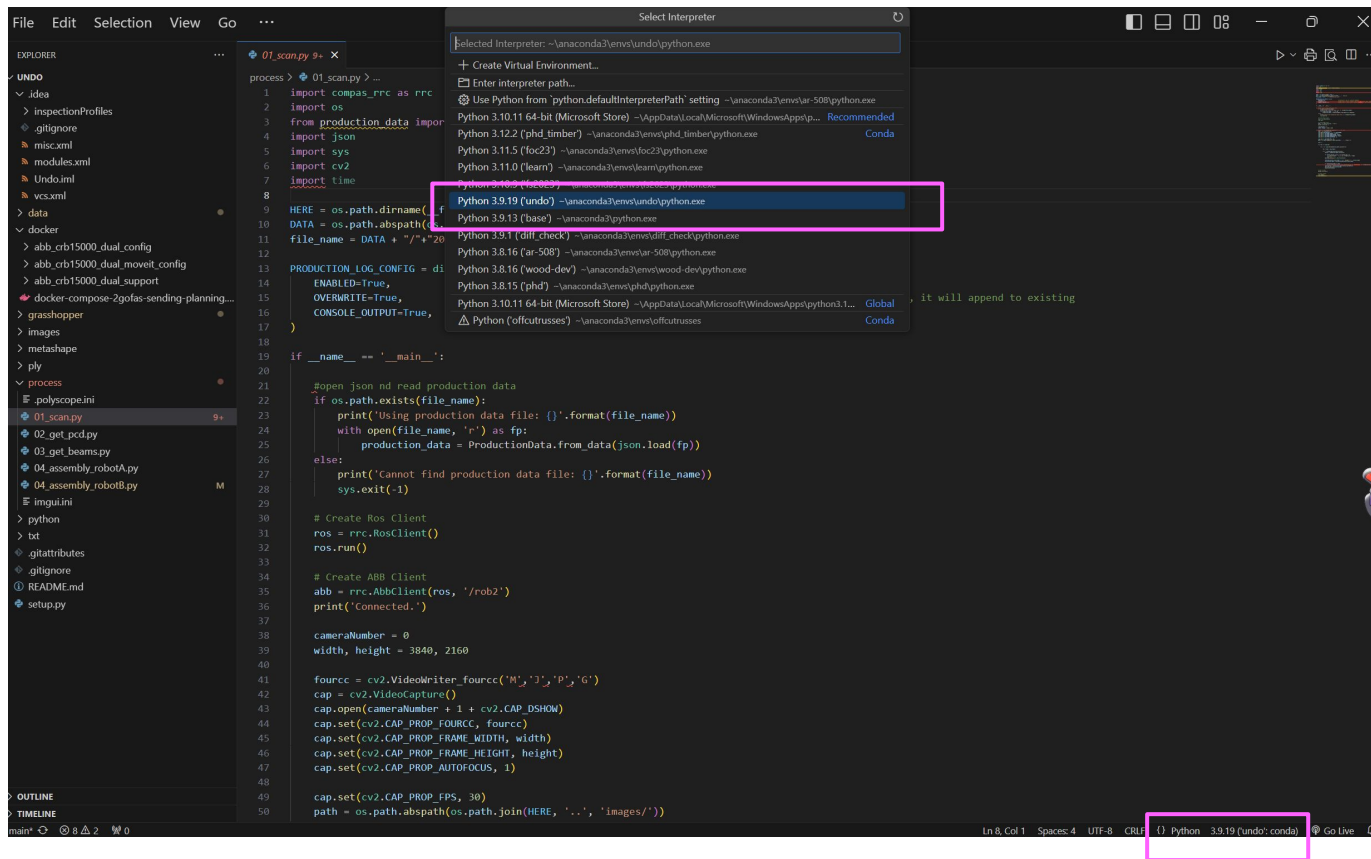
on mac first, rename the wheel file you downloaded to the following: Metashape-2.1.3-cp37.cp38.cp39.cp310.cp311-abi3-macosx\_11\_0\_universal2.macosx\_10\_13\_x86\_64.whl

```
(undo) python3 -m pip install Metashape-2.1.3-cp37.cp38.cp39.cp310.cp311-abi3-macosx_11_0_universal2.
```



## Step 6 : Configure Visual Studio Code

- make sure you are in the environment that we created



## Step 6 : Configure Visual Studio Code

- Ctrl + Shift + P
- Terminal: Select Default Profile
- Command Prompt

