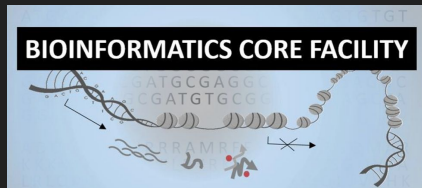


# Welcome to ABC.2

abc.au.dk



27. June 2024



Health  
Data Science  
Sandbox

# The ABC concept

- Bi-weekly Informal venue
  - Independent sessions
  - **All documented** at [abc.au.dk](http://abc.au.dk)
- Open to any coding/bioinf experience level
- Integrated into the supporting infrastructures

# What's new

## 8th danish bioinformatics conference 21-22 august, Copenhagen

[The Event](#)[Sign up](#)[Programme](#)[Venue](#)

### Location

**Panum**, Faculty of Health and Medical Sciences, University of Copenhagen

Address: Blegdamsvej 3B, 2200 Copenhagen, Denmark



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[Click here to change your Cookie settings.](#)

<https://eventsignup.ku.dk/8danishbioinformaticsconference>



# scVerse conference in Munich



## SAVE THE DATE

### SEPTEMBER, 10-12 2024

#### Munich, Germany

From **developers**,  
to **contributors**,  
to the **community**.

Meet the  
single-cell  
universe!

#### Speakers



Fabian  
Theis



Alex  
Wolf



Angela  
Pisco

#### Workshops

- Get your package ready for the scverse ecosystem
- Good first contributions
- Interactive AnnData & SpatialData analysis


**& more to be announced soon!**

 [scverse.org/conference2024](https://scverse.org/conference2024)

# European Society for Spatial Biology

## December 12-13, Berlin

<https://spatialbiologysociety.eu/>

**European Society for Spatial  
Biology (ESSB)**

[About](#) [Programme](#)  
[Abstract submission](#) [Contact & Venue](#)

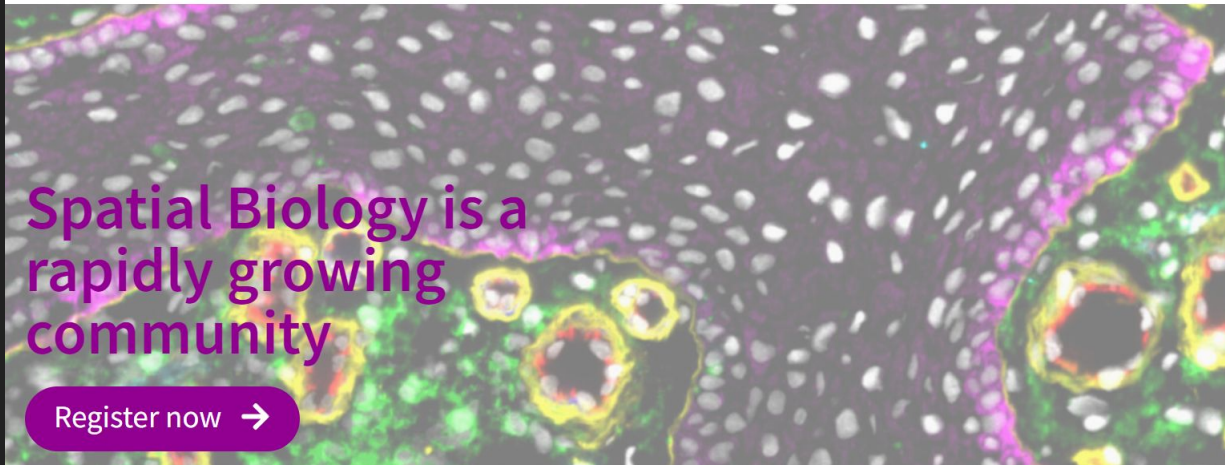
Register for the  
conference

Early bird deadline: **31 July 2024**

Abstract deadline: **31 August 2024**

Spatial Biology is a  
rapidly growing  
community

Register now →



# Involvement of participants

- Anything new from you??
  - Nice packages you use/have discovered, plots, data
  - Suggestions about topics that we should cover or tutorials we should make?
- A beginner's guide to bioinformatics syntax:
  - E.g. Directory, Environment, Kernel, others?

Please just e-mail us, if you have anything :)

Bioinformatics core facility: [per.q@biomed.au.dk](mailto:per.q@biomed.au.dk)

Health data science sandbox: [samuele@mbg.au.dk](mailto:samuele@mbg.au.dk)

# ABC Topic - IDEs and Environments

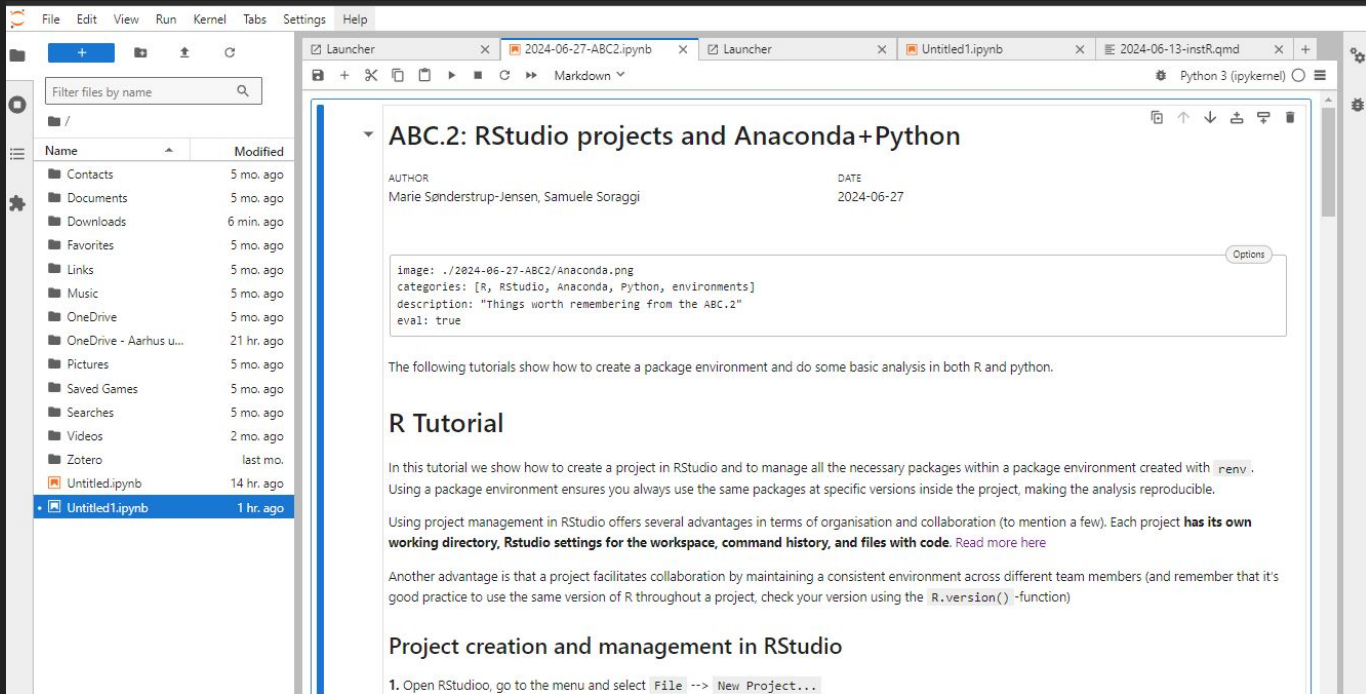
IDE: an interface for managing projects, coding, editing files, version control and much more

IDE = Integrated Development Environment

Two famous IDEs are **RStudio** and **Jupyterlab**, but there are other famous IDEs



# ABC Topic - IDEs and Environments



The screenshot displays the RStudio IDE interface. On the left, the File Explorer shows a list of files and folders, including 'Contacts', 'Documents', 'Downloads', 'Favorites', 'Links', 'Music', 'OneDrive', 'OneDrive - Aarhus u...', 'Pictures', 'Saved Games', 'Searches', 'Videos', 'Zotero', 'Untitled.ipynb', and 'Untitled1.ipynb'. The 'Untitled1.ipynb' file is selected. The main editor window displays a document titled 'ABC.2: RStudio projects and Anaconda+Python'. The document content includes a metadata section with 'AUTHOR' (Marie Sønderstrup-Jensen, Samuele Soraggi) and 'DATE' (2024-06-27). Below this is a code block with the following content:

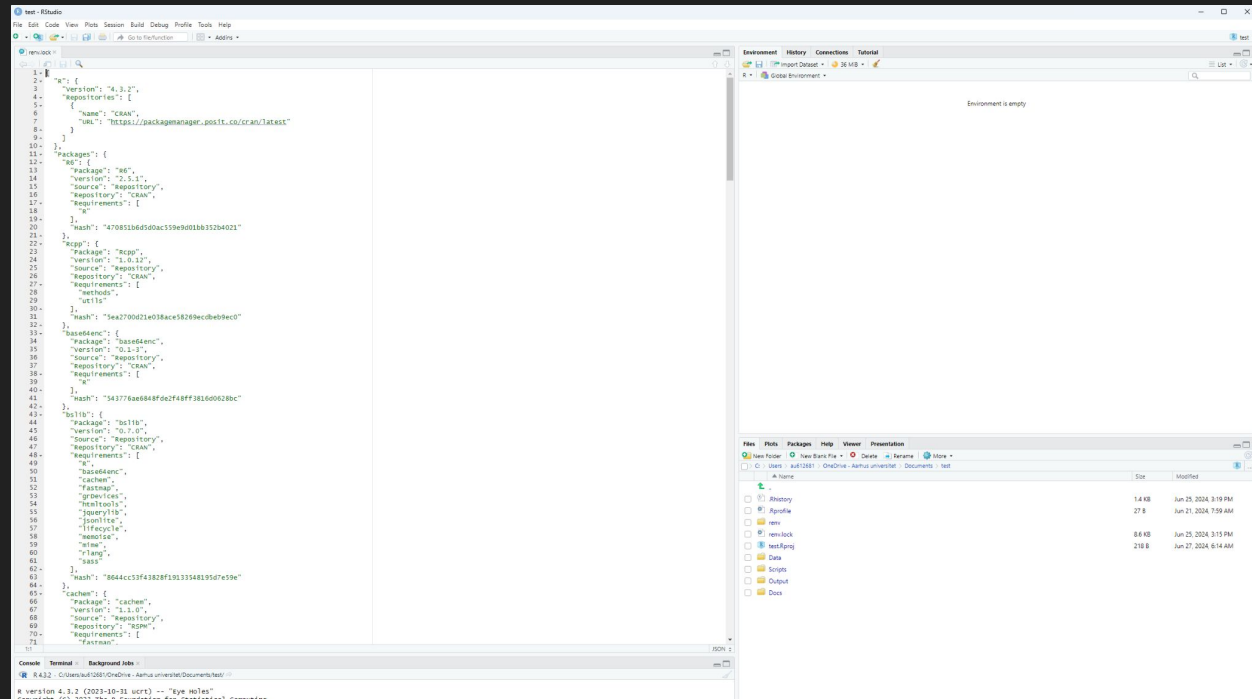
```
image: ./2024-06-27-ABC2/Anaconda.png
categories: [R, RStudio, Anaconda, Python, environments]
description: "Things worth remembering from the ABC.2"
eval: true
```

The document also contains text explaining the purpose of the tutorials and the importance of project management in RStudio. The text states: 'The following tutorials show how to create a package environment and do some basic analysis in both R and python.' It then introduces the 'R Tutorial' and explains that it shows how to create a project in RStudio and manage packages within a package environment created with `renv`. It emphasizes that using a package environment ensures the use of the same packages at specific versions, making the analysis reproducible. The text further states that using project management in RStudio offers several advantages, including organization and collaboration, and that each project has its own working directory, RStudio settings for the workspace, command history, and files with code. It also mentions that another advantage is that a project facilitates collaboration by maintaining a consistent environment across different team members, and that it is good practice to use the same version of R throughout a project, which can be checked using the `R.version()` function.

The document concludes with the section 'Project creation and management in RStudio' and lists the first step: '1. Open RStudio, go to the menu and select **File** --> **New Project...**'.



# ABC Topic - IDEs and Environments



Environments:

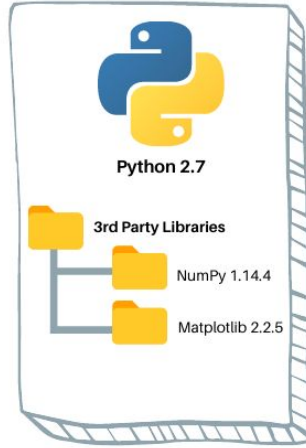
Properly managing your **software and its dependencies** is fundamental for reproducibility

Each project needs specific software versions dependent on each other for reproducibility - without interfering with other projects.

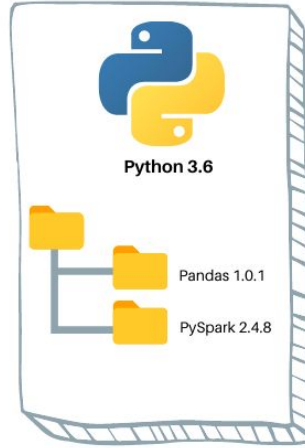
A **virtual environment** keeps project-specific softwares and their dependencies separated

A **package manager** is a software that can retrieve, download, install, upgrade packages easily and reliably

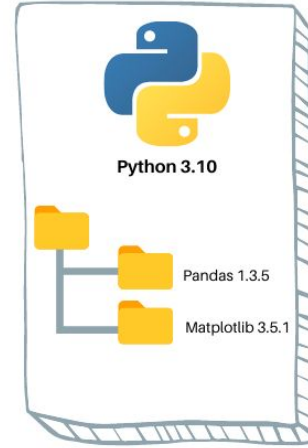
Virtual Environment 1



Virtual Environment 2



Virtual Environment 3



## **Conda (For any language)**

**Conda is both a virtual environment and a package manager.**

- **easy to use and understand**
- **can handle quite big environments**
- **environments are easily shareable**
- **a large archive (Anaconda) of packages**
- **active community of people archiving their packages on Anaconda.org**
- **Has a graphical interface and as well a command line interface**

## **renv (for R)**

**renv is very well integrated in RStudio projects**

- **tracks package versions**
- **recognized used packages in your code**
- **environments are easily shareable**
- **can also install from Github and other unofficial repositories**
- **constantly updated as much as Conda**

# Exercises: IDEs , Environments and code

- A: Manage a small **dplyr** project with **RStudio** and **renv**
- B: Install **Anaconda** and **intro to python**
- C: Cake, Coffee, Coding and problem solving



Questions?

