

# Setting Up VS Code for Python Development

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## Step 1: Install VS Code

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1. Go to <https://code.visualstudio.com/>
2. Download the appropriate version for your system:
  - Windows: Download and run the installer
  - Mac: Drag to Applications folder
  - Linux: Use package manager or download .deb/.rpm

## Step 2: Install Essential Extensions

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1. Open VS Code
2. Click on Extensions icon (or press `Ctrl+Shift+X`)
3. Install these extensions:
  - Python (Microsoft)
  - Jupyter (Microsoft)
  - Python Indent
  - Python Environment Manager

## Step 3: Configure Python Environment

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1. Open Command Palette (`Ctrl+Shift+P` or `Cmd+Shift+P` on Mac)
2. Type "Python: Select Interpreter"
3. Choose your conda environment (`biosignals`)
  - If not visible, manually browse to Miniconda (/)Conda location:
    - Windows: `C:\Users\<username>\Miniconda3\envs\biosignals\python.exe`
    - Mac/Linux: `~/miniconda3/envs/biosignals/bin/python`

## Step 4: Test Setup

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1. Create new file: `test.py`
2. Add this code:

```
import numpy as np
import matplotlib.pyplot as plt
import mne

print("Setup successful!")
print(f"Python version: {np.__version__}")
print(f"MNE version: {mne.__version__}")
```

3. Run with `F5` or green play button

## Recommended Settings

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1. Open Settings ( `Ctrl+,` or `Cmd+,` on Mac)
2. Search and enable:
  - "Python > Formatting: Provider" → "black"
  - "Editor: Format On Save" → check
  - "Python > Linting: Enabled" → check
  - "Files: Auto Save" → "afterDelay"

## Useful Keyboard Shortcuts

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- `Ctrl+Space`: Code completion
- `Ctrl+/`: Comment/uncomment
- `F5`: Run Python file
- `Ctrl+F5`: Run without debugging
- `Shift+Enter`: Run current line/selection
- `Ctrl+Click`: Go to definition

## Working with Jupyter in VS Code

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1. Create new notebook: Right-click in explorer → New Jupyter Notebook
2. Or open existing: Double-click .ipynb file
3. Run cells: Click play button or `Shift+Enter`
4. Add cells: Click + button or `B` for below

## Troubleshooting Tips

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### 1. Can't find Python interpreter

- Manually add conda environment path
- Restart VS Code

### 2. Extensions not working

- Check VS Code is up to date
- Reinstall extensions
- Clear VS Code cache

### 3. Jupyter not working

- Ensure ipykernel is installed:

```
conda activate biosignals
conda install ipykernel
```

### 4. Plot windows not showing

- Use inline plotting in notebooks
- For .py files, add:

```
plt.show()
```

## Getting Help

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- Command Palette → "Help: Get Started"
- View → Command Palette → Type "Python:"
- Help → Welcome