

# **Effective Programming Practices for Economists**

## **Scientific Computing**

### **Profiling code with snakeviz**

Janoś Gabler and Hans-Martin von Gaudecker

# Remarks

- Snakeviz is most useful if your code is structured in many small functions
- Don't obsess about the lowest levels of the output. It is enough if you find out which of your functions is currently a bottleneck.

# Non obvious outputs

- A lot of time is spent in `__getitem__` and `__setitem__` calls
  - You are using the wrong data structures
  - Replace DataFrames or dicts with numpy arrays where possible
- All time is spent in numpy operations but your code is still much slower than one would expect
  - You are doing array operations in a loop
  - Either use full loops with numba or full vectorization. Never a middle ground