* + David
  + The term for optimizing code and debugging error is USE: <https://www.brendangregg.com/usemethod.html>
  + You can use python profiler in vs code or built-in called cprofile to locate which line exactly needs to be fixed… <https://docs.python.org/3/library/profile.html> or <https://github.com/benfred/py-spy> . Note this is more an issue if you’re not profiling foreign function code (e.g. C/fortran/rust)
  + You can say it’s not a novel situation…what do others do! We can test hypothesis whether it is the curve\_fit function and the method they use. For example, look to machine learning libraries, numba, torch, cython, tensorflow. It takes a function, compiles code, and runs into a faster version.
  + As a quick sanity test. Take the library from jax: <https://jaxopt.github.io/stable/_autosummary/jaxopt.LevenbergMarquardt.html> . It is a numpy 1:1 API that has hooks into optimizing with GPUs, CPUs, etc. May solve the issue. One problem: can’t run on windows and requires AVX.
  + After this try to install a plugin for profiling in vs code or else run the python built-in profiler. Other fun extensions for vs code include live sharing code in is called Live Share (<https://code.visualstudio.com/learn/collaboration/live-share> or <https://visualstudio.microsoft.com/services/live-share/>). Also an ssh option.

See:

Gaussian processes on google

Aigrain and d. foreman-mackey 2022/2023 (review paper about gaussian process regression for astronomical time-series)

Main examples of implemented codes include

Emcee, George, celerite, and a combination of jax with tinygp