

PyAutofit: Classy Probabilistic Programming (James Nightingale / Newcastle University)

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A major trend in Physics and Astronomy and healthcare is the rapid adoption of Bayesian statistics for data analysis and modeling. With modern data-sets growing by orders of magnitude in size, the focus is now on developing methods capable of applying contemporary inference techniques to extremely large datasets. To this aim, I present PyAutoFit (<https://github.com/rhayes777/PyAutoFit>), an open-source probabilistic programming language for automated Bayesian inference.

In this hands on demonstration, I will:

- 1) Give an overview of how to compose a probabilistic model and perform automated Bayesian inference.
- 2) Demonstrate a simple model-fitting example using a Cosmology based science-case.
- 3) Illustrate the use of Bayesian graphs to perform simultaneous inference of thousands on datasets.

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