nbinteract: Generate Interactive Webpages From Jupyter Notebooks

Samuel Lau

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This is the abstract. It will be filled in after everything else is written.

Introduction

Jupyter notebooks provide a popular document format for authoring, executing, and publishing code alongside analysis [2]. Although Jupyter notebooks were originally designed for use in scientific workflows for data preparation and analysis, they are becoming an increasingly common choice for university courses—a survey in 2016 reported that over one hundred courses across multiple countries use Jupyter in their course content [1].

An increasing number of universities now offer data science courses, many of which use Jupyter because of its broad adoption for data analysis workflows in both academia and industry. These courses often use Jupyter notebooks as the preferred medium for homeworks, labs, projects, and lectures. UC Berkeley's flagship data science courses, for example, use Jupyter for all of these course components and even use Jupyter notebooks for their course textbooks.

As a web technology, Jupyter notebooks also provide a platform for interaction authoring. For example, the popular `ipywidgets` Python library allows users to create web-based user interfaces to interact with arbitrary Python functions. Users can create these interfaces using Python directly in the notebook environment instead of having to use HTML and Javascript, significantly lowering the overhead usually needed to create these interfaces. This ease-of-use encourages instructors and researchers to create interactive explanations of their work.

Since `ipywidgets` is a Jupyter notebook library, however, in order to view these interactive explanations users have to run the notebook itself.

References

[1] Jessica B Hamrick and Jupyter Development Team. *2016 Jupyter Education Survey*. May 2016. DOI: 10.5281/zenodo.51701. URL: https://github.com/jupyter/datasets/tree/master/surveys/2016-05-education-survey.

[2] Thomas Kluyver et al. *Jupyter Notebooks—a publishing format for reproducible computational workflows*. 2016, pp. 87–90. ISBN: 9781614996491. DOI: 10.3233/978-1-61499-649-1-87.