1. Restoring execution environments of jupyter notebooks (*Open Access*)

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Abstract: More than ninety percent of published Jupyternotebooks do not state dependencies on external packages. This makes them non-executable and thus hinders reproducibility of scientific results. We present SnifferDog, an approach that1) collects the APIs of Python packages and versions, creating a database of APIs; 2) analyzes notebooks to determine candidates for required packages and versions; and 3) checks which packages are required to make the notebook executable(and ideally, reproduce its stored results). In its evaluation, we show thatSnifferDogprecisely restores execution environments for the largest majority of notebooks, making them immediately executable for end users. © 2021 IEEE. (48 refs)
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