Advanced Software for Data science : Julia, R, Python and Excel

Python

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Introduction to Streamlit

What is Streamlit?

- Streamlit is an **open-source** Python framework.

- Used for creating data-driven **web applications** quickly and easily.

- Designed specifically for **data scientists** and **machine learning engineers**.

- **No need for front-end** development experience (HTML, CSS, or JavaScript).

- Converts Python scripts into **interactive** apps with a few lines of code.

Streamlit in Action: Use Cases

- **Data Dashboards:** Quickly create dashboards to visualize and explore large datasets.

- **Business Reporting:** Create interactive reports for business intelligence and decision-making.

- **Machine Learning Apps:** Showcase live models

  - Adjustable hyperparameters for fine tuning

  - Users upload an image or dataset and see the model's predictions in real time.

App Gallery

The Importance of Tools Like Streamlit for a Data Scientist

- **Boost Your Efficiency as a Data Scientist**
  - **Data Understanding:** create interactive dashboards and visualize results clearly and dynamically.
  - **Model Exploration:** enables data scientists to test different models and parameters while instantly seeing the impact of changes.
  - **Automated Reporting:** create automated reports so you can focus on analysis and model improvement rather than repetitive reporting tasks.

- **Elevate the Impact of Your Work for Stakeholders**
  - **Democratization of Data Science:** sharing results with non-experts (managers, clients) becomes simpler through a user-friendly interface. You can transform complex analyses into easily understandable visualizations.
  - **Visual Impact:** your analyses can have a greater impact when presented in an interactive and visually engaging format, making your conclusions clearer and more compelling.
  - **Data-Driven Decision Making:** decision-makers can explore various scenarios by tweaking parameters in the app, leading to more informed choices.

Why Use Streamlit?

- **Simple and Fast:** Easy-to-use API; minimal code to build complex applications.

- **Interactive Widgets:** Supports sliders, buttons, dropdowns, and other UI elements for interaction.

- **Built-In Data Visualization:** Integrates seamlessly with popular Python libraries like Matplotlib,

  Plotly…

- **Easy Deployment:** Deploy and share apps with a single click.

How to Get Started

- **Installation:** Run `pip install streamlit` to install

- **Run Your First App:** Write a Python script and run `streamlit run your_script.py`

- Example: [From Notebook to Streamlit](#)

- [Concepts](#)

- [First steps](#)

- [Cheat sheet](#)

Introduction to GitHub

.gitignore

- A `gitignore` file specifies intentionally untracked files that Git should ignore.

- Templates exist: Jupyter notebook, PyCharm…

- [Github documentation](#)