

Results

Explorability

Cell-output correspondences
Cell-based inspection

Incorporating inspection code
without clutter

Clarity

Markdown cells
Saving outputs

Live programming visualizations that
work inside loops and functions

Use of AI

Reading code
Running code

AI Integration with validation support

Tactics for **Quality Attributes**
& **AI Validation Strategies**

Design Opportunities

Key Contributions

An **observational study** of 20 scientific users of Jupyter notebooks showing: