

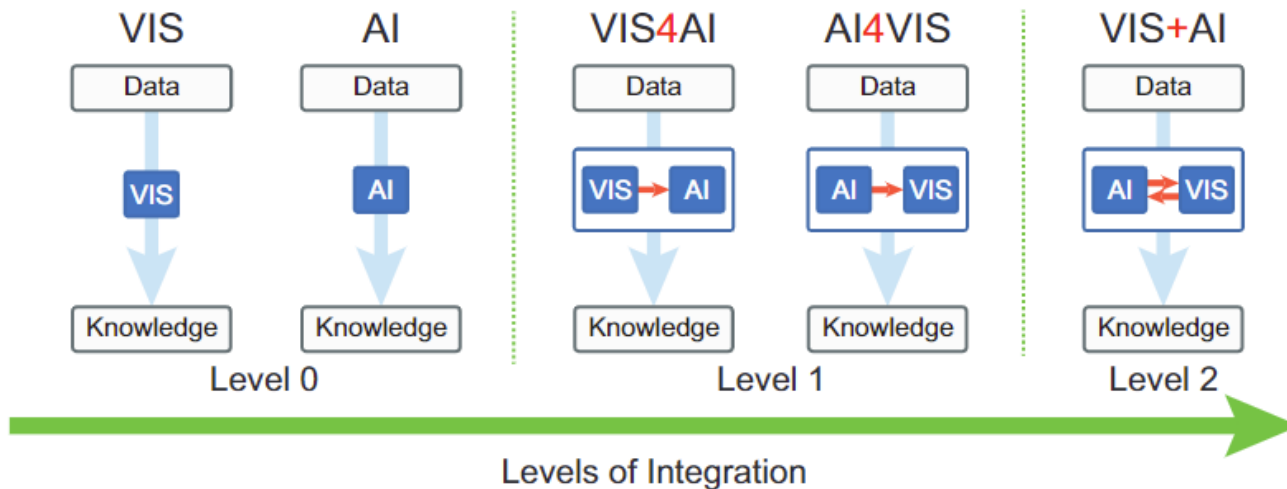
VIS+AI : Integrating Visualization with Artificial Intelligence for Efficient Data Analysis

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Problems & Ideas

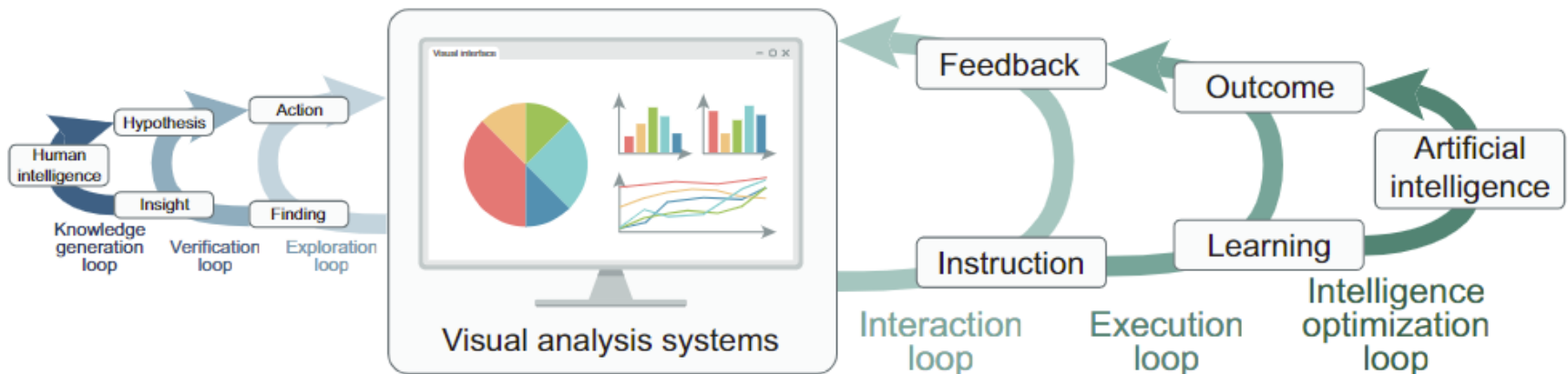
- Problems:
 - How can AI and visualization complement each other?
 - How to deeply integrate AI and visualization into data analysis processes?
- Ideas:
 - Summarize the integration level in existing studies and discuss future directions.



Three levels of integration of VIS and AI in data analysis.

Main Contributions

- Contributions:
 - Define three levels of integration between AI and visualization, which are independent process, one-way assistance, and deep integration;
 - A framework of VIS+AI, which allows AI to learn human intelligence from interactions and communicate with humans through visual interfaces.



The framework of VIS+AI consists of three loops: an interaction loop that supports direct communication between AI and humans using visual analysis systems, an execution loop running models/algorithms to perform tasks, and an intelligence optimization loop restoring what is learned previously.