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Type Package

Title RgentAI: AI-Powered Statistical Analysis Assistant for R

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Description An intelligent AI assistant for R programming that provides conversational chat, plot analysis, error debugging, and specialized agents for data cleaning, transformation, statistical analysis, and machine learning workflows.

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`%||%` *Visualization Agent for RStudio AI*

Description

This agent generates intelligent visualizations based on data characteristics and user preferences, with plots displayed directly in the chat interface.

Usage

```
x %||% y
```

`add_to_conversation_history` *Add message to conversation history*

Description

Add message to conversation history

Usage

```
add_to_conversation_history(role, message)
```

Arguments

`role`	The role of the message sender ("user" or "ai")
`message`	The message content

`ai_addin_viewer` *Launch the AI assistant in the browser One-command solution that opens the HTML interface connected to Render backend*

Description

Launch the AI assistant in the browser One-command solution that opens the HTML interface connected to Render backend

Usage

```
ai_addin_viewer(port = NULL)
```

Arguments

`port`	Port for the local plumber server (default: auto-detect)

`ai_insert_code` *AI-driven code insertion with intelligent placement*

Description

AI-driven code insertion with intelligent placement

Usage

```
ai_insert_code(code, context_context = NULL)
```

Arguments

`code`	The code to insert
`context_context`	Optional context to help determine placement

ai_replace_code *AI-driven code replacement*

Description

AI-driven code replacement

Usage

```
ai_replace_code(old_code_pattern, new_code)
```

Arguments

old_code_pattern	Pattern to identify code to replace
new_code	The replacement code

ai_smart_insert *Smart code insertion with AI context*

Description

Smart code insertion with AI context

Usage

```
ai_smart_insert(code, location_hint = NULL)
```

Arguments

code	The code to insert
location_hint	Optional hint about where to insert

analyze_last_plot *Main plot analysis function*

Description

Main plot analysis function

Usage

```
analyze_last_plot()
```

`analyze_visualization_plot` *Analyze visualization agent plot specifically This function is designed for visualization agent plots and doesn't interfere with the analyze_last_plot button*

Description

Analyze visualization agent plot specifically This function is designed for visualization agent plots and doesn't interfere with the analyze_last_plot button

Usage

```
analyze_visualization_plot(plot_command, plot_type, data_variables)
```

`auto_capture_error` *Auto-capture error context and show notification*

Description

Auto-capture error context and show notification

Usage

```
auto_capture_error()
```

`capture_context` *Capture current workspace context*

Description

Capture current workspace context

Capture current workspace context

Usage

```
capture_context()
```

```
capture_context()
```

capture_context_smart *Capture current workspace context with smart filtering*

Description

Capture current workspace context with smart filtering

Usage

```
capture_context_smart(query = NULL)
```

capture_context_smart_incremental *Smart context capture with incremental processing*

Description

Smart context capture with incremental processing

Usage

```
capture_context_smart_incremental(query = NULL)
```

capture_last_error *Capture last error with context and code*

Description

Capture last error with context and code

Capture error after it occurs

Usage

```
capture_last_error()

capture_last_error()
```

Value

List containing error information and context

detect_context_changes *Detect changes between two context states*

Description

Detect changes between two context states

Usage

```
detect_context_changes(old_context, new_context)
```

Arguments

old_context	Previous context state
new_context	Current context state

Value

List of detected changes

execute_code *Execute code directly in R console*

Description

Execute code directly in R console

Usage

```
execute_code(code)
```

Arguments

code	The code to execute

execute_code_in_session *R Code Execution Engine*

Description

This module handles all R code execution using proven, reliable methods adapted from ClaudeR's execution approach. Execute R code in the active RStudio session

Usage

```
execute_code_in_session(code, settings = NULL)
```

Arguments

code	The R code to execute
settings	The current settings for execution

Details

This function executes the provided R code in the global environment and captures both the result and any output using proven methods.

Value

A list containing the execution result and metadata

execute_plot_analysis *Execute analysis commands and collect results*

Description

Execute analysis commands and collect results

Usage

```
execute_plot_analysis(commands)
```

execute_r_function *Execute R function directly from frontend*

Description

Execute R function directly from frontend

Usage

```
execute_r_function(function_name, param1, param2 = NULL)
```

Arguments

function_name	Name of the R function to call
param1	First parameter
param2	Second parameter

execute_with_capture *Execute code with auto-capture*

Description

Execute code with auto-capture

Usage

```
execute_with_capture(code)
```

extract_keywords *Extract keywords from user query*

Description

Extract keywords from user query

Usage

```
extract_keywords(query)
```

extract_plot_data *Extract data variables from plot command*

Description

Extract data variables from plot command

Usage

```
extract_plot_data(command, plot_type)
```

find_exact_matches *Find exact matches for keywords in object names*

Description

Find exact matches for keywords in object names

Usage

```
find_exact_matches(keywords, objects)
```

find_last_plot_command *Update workspace index Find the last plot command in R history*

Description

Update workspace index Find the last plot command in R history

Usage

```
find_last_plot_command()
```

find_partial_matches *Find partial and fuzzy matches for keywords in object names*

Description

Find partial and fuzzy matches for keywords in object names

Usage

```
find_partial_matches(keywords, objects)
```

`generate_analysis_commands` *Generate analysis commands based on plot type*

Description

Generate analysis commands based on plot type

Usage

```
generate_analysis_commands(plot_type, data_var)
```

`get_available_dataframes` *Get Available DataFrames in Global Environment*

Description

Get Available DataFrames in Global Environment

Usage

```
get_available_dataframes()
```

Value

Character vector of DataFrame names

`get_console_context` *Get the console lines above the error*

Description

Get the console lines above the error

Usage

```
get_console_context()
```

get_conversation_history *Get conversation history as formatted string*

Description

Get conversation history as formatted string

Usage

```
get_conversation_history()
```

get_dataframe_info *Get Basic Information About a DataFrame*

Description

Get Basic Information About a DataFrame

Usage

```
get_dataframe_info(dataframe_name)
```

Arguments

df_name	Name of the DataFrame

Value

List with DataFrame information

get_last_executed_code *Get the last executed code from R history*

Description

Get the last executed code from R history

Usage

```
get_last_executed_code()
```

get_relevant_context_for_error *Get relevant context from index based on error type*

Description

Get relevant context from index based on error type

Usage

```
get_relevant_context_for_error(error_code, error_message)
```

get_rstudio_theme *Get RStudio theme information*

Description

Get RStudio theme information

Usage

```
get_rstudio_theme()
```

Value

List containing theme information

identify_plot_type *Identify plot type from command*

Description

Identify plot type from command

Usage

```
identify_plot_type(command)
```

insert_code *Insert code into active document*

Description

Insert code into active document

Usage

```
insert_code(code = NULL)
```

Arguments

code	The code to insert (if NULL, reads from clipboard)

insert_code_at_location *Insert code at specific location in document*

Description

Insert code at specific location in document

Usage

```
insert_code_at_location(
  code,
  file_path = NULL,
  line_number = NULL,
  replace_selection = FALSE
)
```

Arguments

code	The code to insert
file_path	Optional file path (if NULL, uses active document)
line_number	Optional line number (if NULL, uses cursor position)
replace_selection	Whether to replace current selection

launch_html_interface *Launch HTML interface with HTTPS support for clipboard API*

Description

Launch HTML interface with HTTPS support for clipboard API

Usage

```
launch_html_interface()
```

launch_websocket_chat *Backwards compatibility alias*

Description

Backwards compatibility alias

Usage

```
launch_websocket_chat()
```

load_execution_settings
Load execution settings

Description

Load execution settings

Usage

```
load_execution_settings()
```

Value

A list containing execution settings

log_code_to_file *Log code to file*

Description

Log code to file

Usage

```
log_code_to_file(code, log_path)
```

Arguments

code	The R code to log
log_path	The path to the log file

Value

Invisible NULL

log_error_to_file *Log error to file*

Description

Log error to file

Usage

```
log_error_to_file(code, error_message, log_path)
```

Arguments

code	The R code that caused the error
error_message	The error message
log_path	The path to the log file

Value

Invisible NULL

`reconstruct_base_plot_command` *Reconstruct multi-line base R plot command (plot, hist, boxplot, barplot)*

Description

Reconstruct multi-line base R plot command (plot, hist, boxplot, barplot)

Usage

```
reconstruct_base_plot_command(history_lines, start_line, plot_cmd)
```

`reconstruct_ggplot_command` *Reconstruct multi-line ggplot2 command*

Description

Reconstruct multi-line ggplot2 command

Usage

```
reconstruct_ggplot_command(history_lines, start_line)
```

`reconstruct_qq_command` *Reconstruct base R QQ plot command possibly spanning multiple lines*

Description

Reconstruct base R QQ plot command possibly spanning multiple lines

Usage

```
reconstruct_qq_command(history_lines, start_line)
```

`refresh_context` *Refresh context and send to backend*

Description

Refresh context and send to backend

Usage

```
refresh_context()
```

`remove_error_monitoring` *Remove error monitoring task callback*

Description

Remove error monitoring task callback

Usage

```
remove_error_monitoring()
```

`run_rgent` *Launch the AI assistant in RStudio viewer One-command solution that opens the HTML interface connected to Render backend*

Description

Launch the AI assistant in RStudio viewer One-command solution that opens the HTML interface connected to Render backend

Launch Rgent

Usage

```
run_rgent()

run_rgent()
```

save_execution_settings *Save execution settings*

Description

Save execution settings

Usage

```
save_execution_settings(settings)
```

Arguments

settings	A list containing execution settings

Value

Invisible NULL

send_error_to_ai *Send debug error to AI for analysis*

Description

Send debug error to AI for analysis

Usage

```
send_error_to_ai(error_details)
```

smart_filter_objects *Smart filtering functions for workspace objects*

Description

Smart filtering functions for workspace objects

Usage

```
smart_filter_objects(query, objects)
```

start_websocket_server *Start WebSocket server for R-JavaScript communication*

Description

Start WebSocket server for R-JavaScript communication

Usage

```
start_websocket_server()
```

stop_websocket_server *Stop WebSocket server*

Description

Stop WebSocket server

Usage

```
stop_websocket_server()
```

test_auto_capture *Test auto-capture system*

Description

Test auto-capture system

Usage

```
test_auto_capture()
```

toggle_auto_fix *Toggle auto-fix mode (removed)*

Description

Toggle auto-fix mode (removed)

Usage

```
toggle_auto_fix()
```

`trigger_auto_capture` *Manually trigger auto-capture*

Description

Manually trigger auto-capture

Usage

```
trigger_auto_capture()
```

`update_workspace_index_full` *Full workspace update (fallback)*

Description

Full workspace update (fallback)

Usage

```
update_workspace_index_full()
```

`update_workspace_index_incremental` *Incremental workspace update functions*

Description

Incremental workspace update functions

Usage

```
update_workspace_index_incremental()
```

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