

DOW

®

Large Language Models in RStudio

James Wade

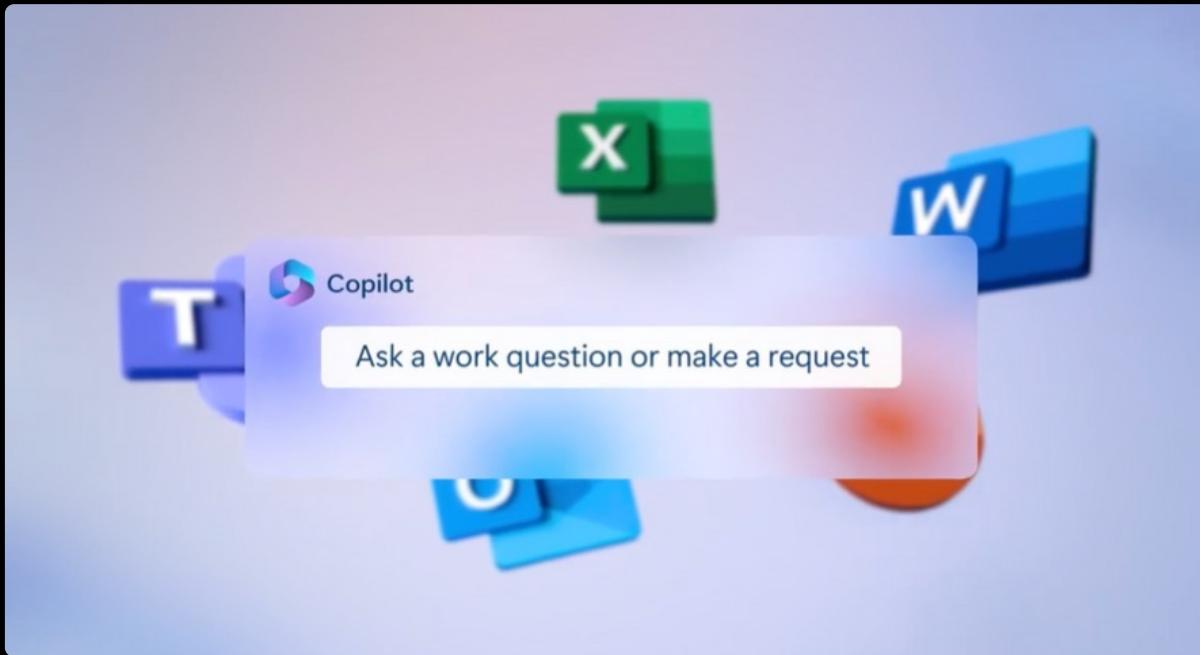
Research Scientist, Dow
posit::conf(2023)



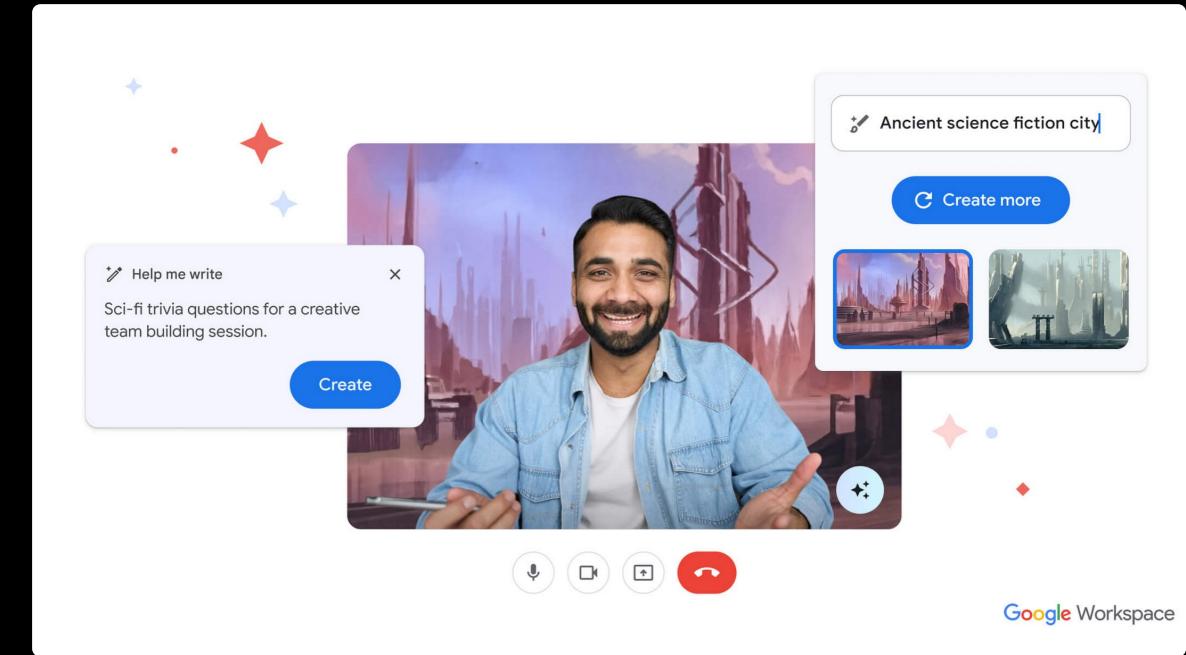
The Last rstudio::conf



LLMs are *already* everywhere.



Microsoft 365 Copilot



Google's Duet AI

Your AI pair programmer

Push what's possible with GitHub Copilot, the world's most widely adopted AI developer tool.

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GitHub Copilot

sentiments.ts write_sql.go

parse_expenses.py

addresses.rb

```
1 import datetime
2
3 def parse_expenses(expenses_string):
4     """Parse the list of expenses and return the list of triples (date, value, currency).
5     Ignore lines starting with #.
6     Parse the date using datetime.
7     Example expenses_string:
8         2016-01-02 -34.01 USD
9         2016-01-03 2.59 DKK
10        2016-01-03 -2.72 EUR
11        """
```

Source: *GitHub Copilot · Your AI pair programmer*. GitHub. (accessed 2023-08-28).



Essays, opinions, and advice on the act of computer programming from Stack Overflow.

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AUGUST 8, 2023

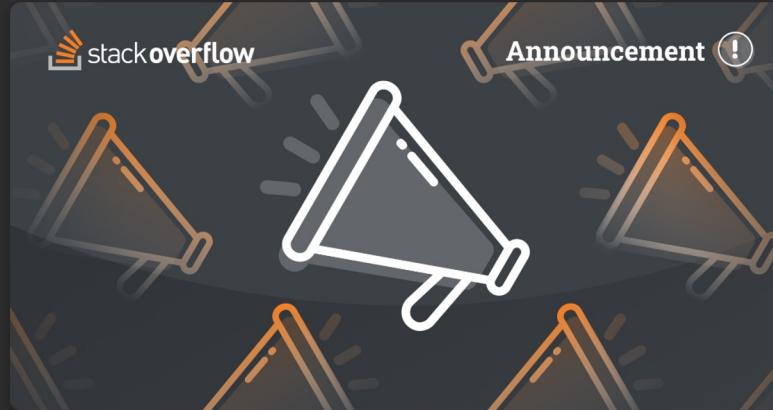
Insights into Stack Overflow's traffic

We're setting the record straight.



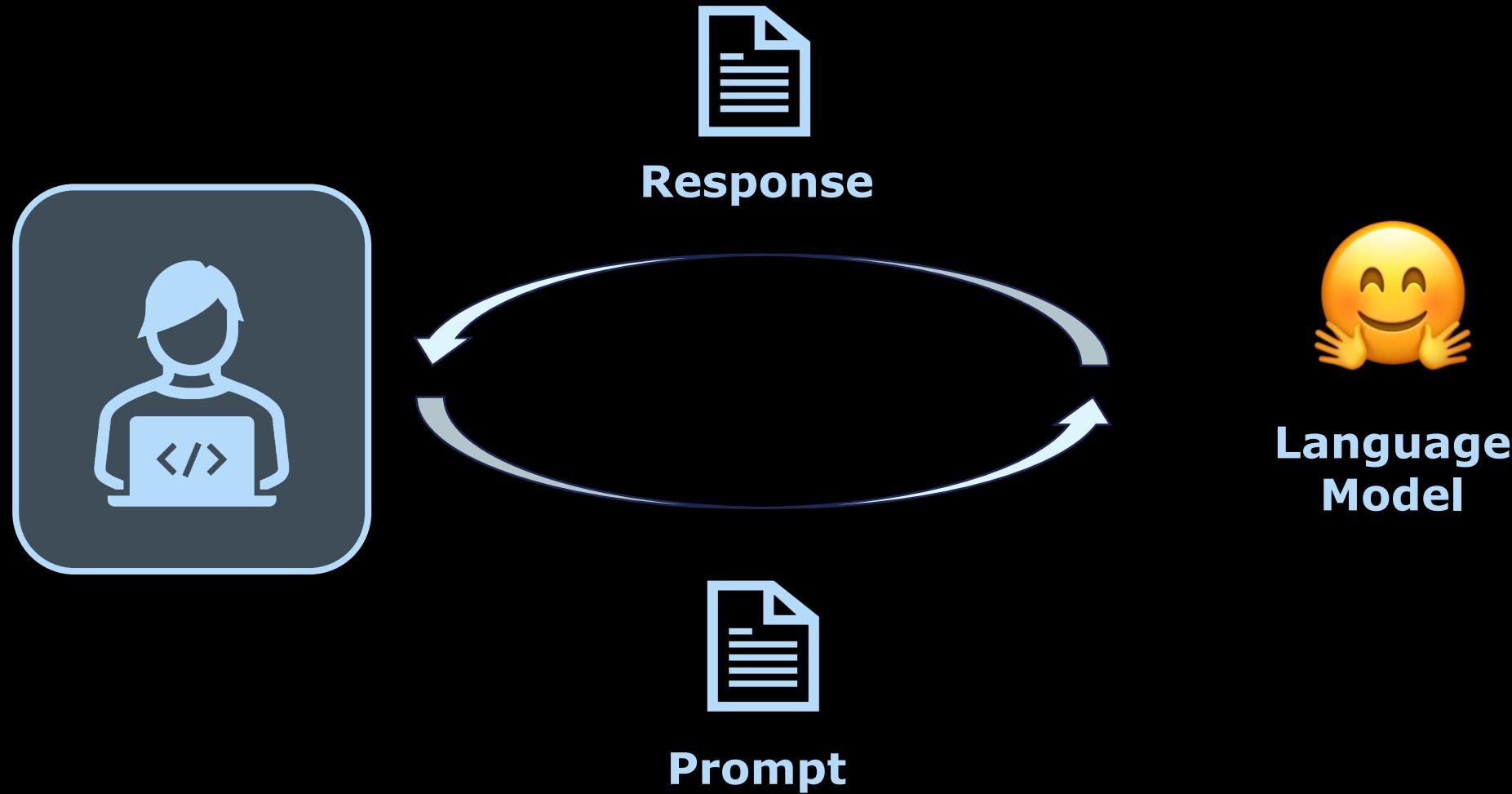
Des Darilek

Director of Product Management, Community Products



Source: Darilek, D. *Insights into Stack Overflow's traffic*. Stack Overflow Blog (accessed 2023/8/28)

LLMs are easy to use.



You can use LLMs
in RStudio

Get started with gptstudio

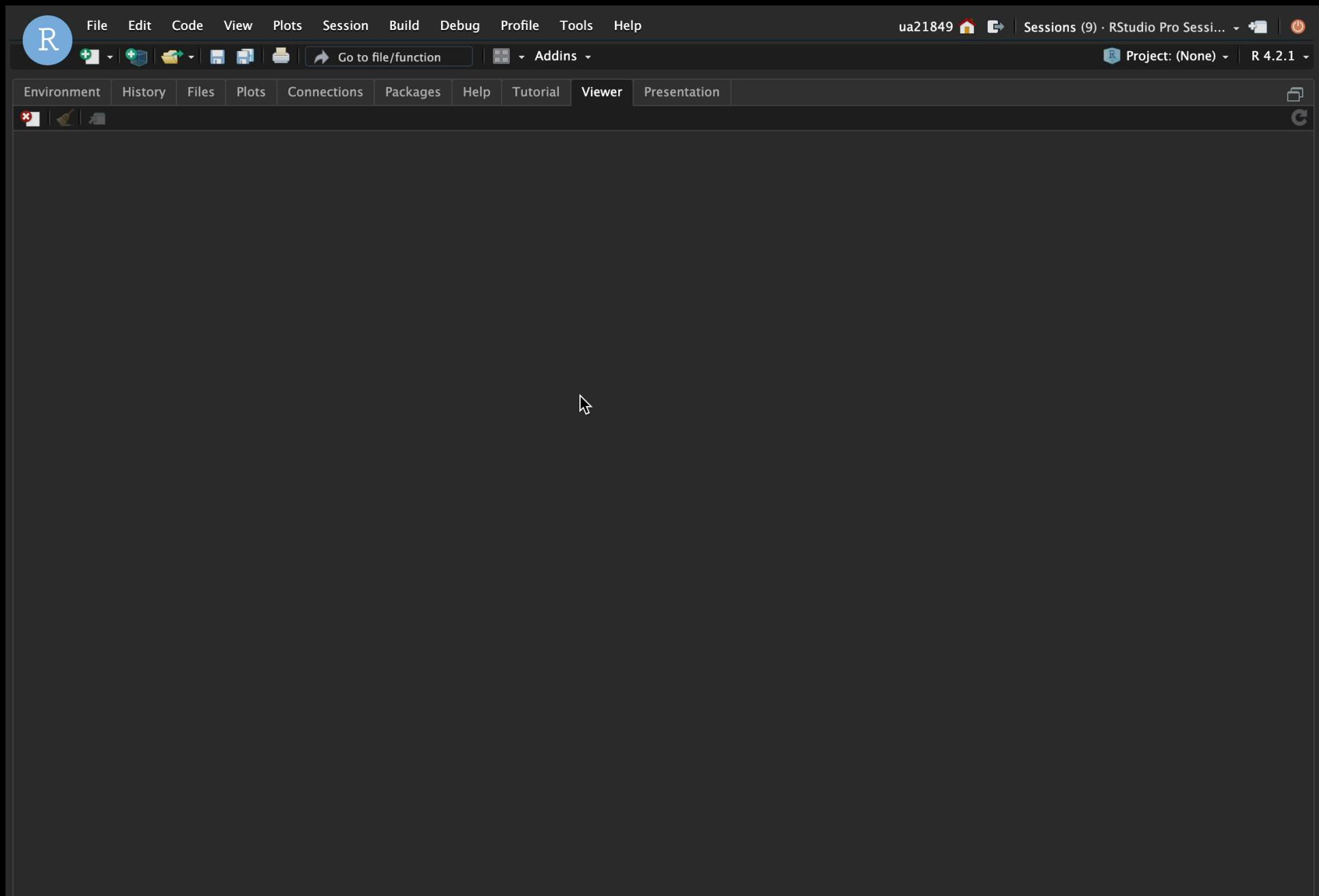
R console

```
1 pkgs <- c("gptstudio", "usethis", "miniUI")
2 install.packages(pkgs)
3 usethis::edit_r_environ()
```

.Renviron

```
1 # GPT-3.5 & GPT-4 from OpenAI
2 OPENAI_API_KEY="sk-*****"
3 # Claude from Anthropic
4 CLAUDE_API_KEY="sk-*****"
5 # HuggingFace Models
6 HF_API_KEY="hf_*****"
7 # PaLM from Google
8 PALM_API_KEY="*****-***-***"
```





You can build your
own Hadley Wickham
chatbot



Go to file/function



Addins



Project: (None)



R 4.2.1

Environment

History

Files

Plots

Connections

Packages

Help

Tutorial

Viewer

Presentation



Welcome to the R programming language! I'm here to assist you in your journey, no matter your skill level.

In this chat you can:

- Send me a prompt (or Enter key)
- Clear the current chat history ()
- Change the settings ()

Type anything to start our conversation.



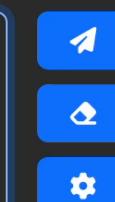
Suppose you were analyzing the dialogue from different 'Star Wars' movies. Using the tidytext and dplyr packages, how would you determine which character speaks the most frequently and create a bar plot that visualizes the 10 most verbose characters?



Here's an example of how you can do this using tidytext and dplyr. This assumes that your dataset contains two columns: `character` and `dialogue`:

Copy

Write your prompt here



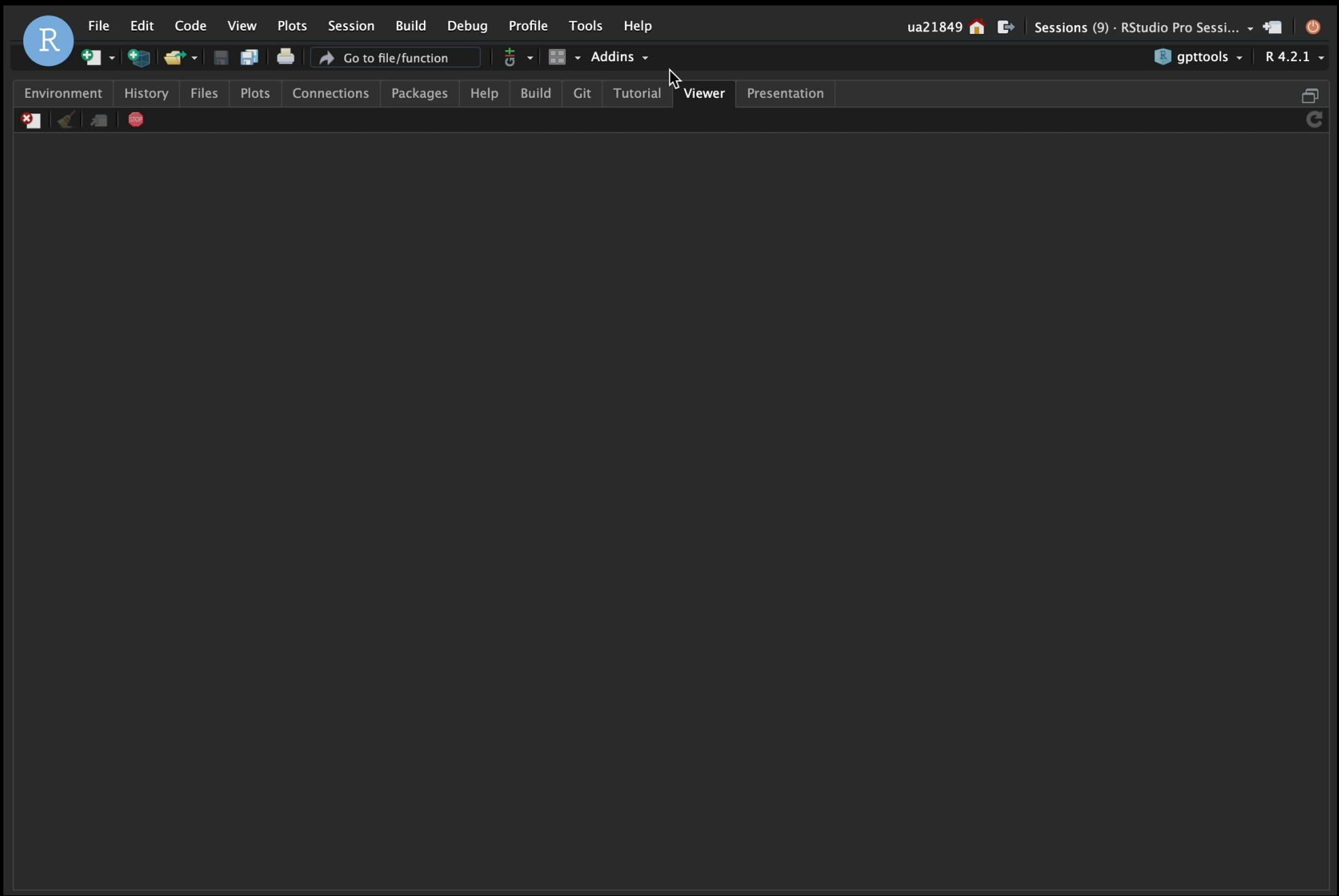
You can teach
ChatGPT what it
doesn't know

Create embeddings

R Console

```
1 # install.packages("pak")
2 pak::pak("jameshwade/gpttools")
3 library(gpttools)
4
5 # scrape data and create embeddings
6 crawl("https://design.tidyverse.org")
```





You can keep
ChatGPT up to date

Update Package Embeddings



```
pkgs <- c(tidyverse::tidyverse_packages(), # tidyverse
          tidymodels::tidymodels_packages(), # tidymodels
          "shiny", "bslib", # shiny
          "vetiver", "plumber", # MLOps
          "embed", "textrecipes", # NLP
          "gpttools", "gptstudio", "chattr") # LLMs

pkgs |>
  # find outdated packages
  get_pkgs_to_scrape() |>
  # update package embeddings
  scrape_pkg_sites()
```

Beyond Productivity Tools

LLMs for Accessibility

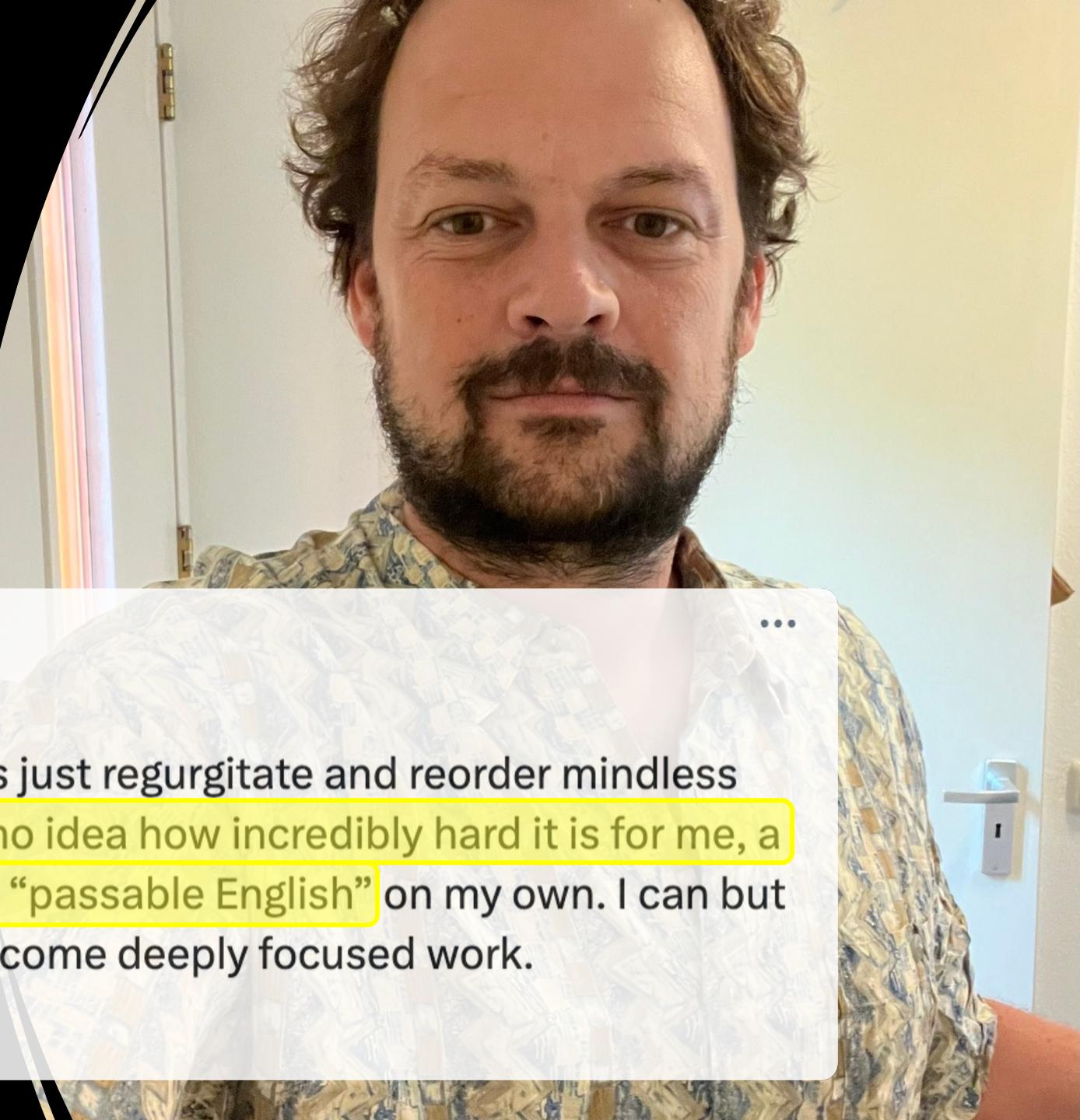
- Prof. Michel Nivard

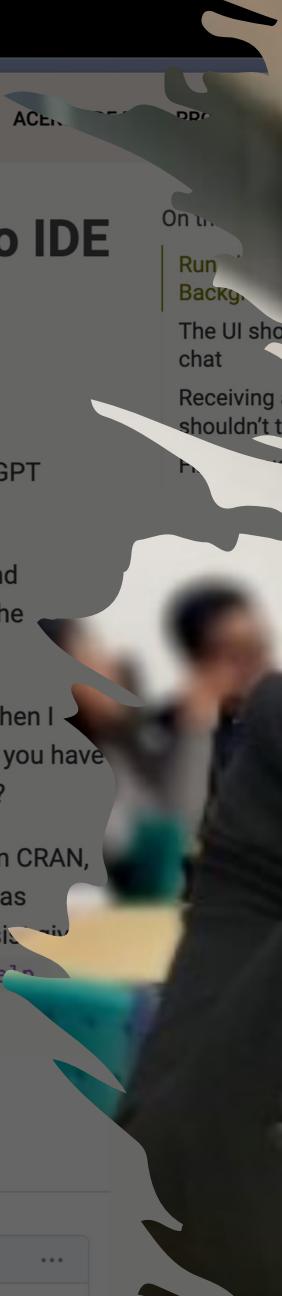


Michel Nivard
@michelnivard

Thing with people saying: “LLMs just regurgitate and reorder mindless passable English.” Is they have no idea how incredibly hard it is for me, a dyslexic non-native, to produce “passable English” on my own. I can but it means trivial emails or text become deeply focused work.

1:45 AM · Jul 26, 2023 · 910 Views





On updating a chat assistant app for the RStudio IDE

RWEEKLY

AUTHOR
Samuel Calderon

PUBLISHED
June 2, 2023

This post summarizes the challenges overcome while trying to improve three areas of the ChatGPT addin (shiny app) from [{gptstudio}](#).

The whole journey began quite unexpectedly for me. I was developing a shiny app for my work and decided to venture into writing JavaScript code. However, I felt that the autocomplete feature in the RStudio IDE wasn't the best available. So, I decided to give VSCode a shot.

As I'm not well versed with JS (or VSCode), I was requesting a lot of help from ChatGPT. That's when I stumbled upon the [ChatGPT extension](#), which integrates ChatGPT seamlessly into VSCode (provided you have a valid API key). That got me thinking—couldn't we have a similar integration for the RStudio IDE?

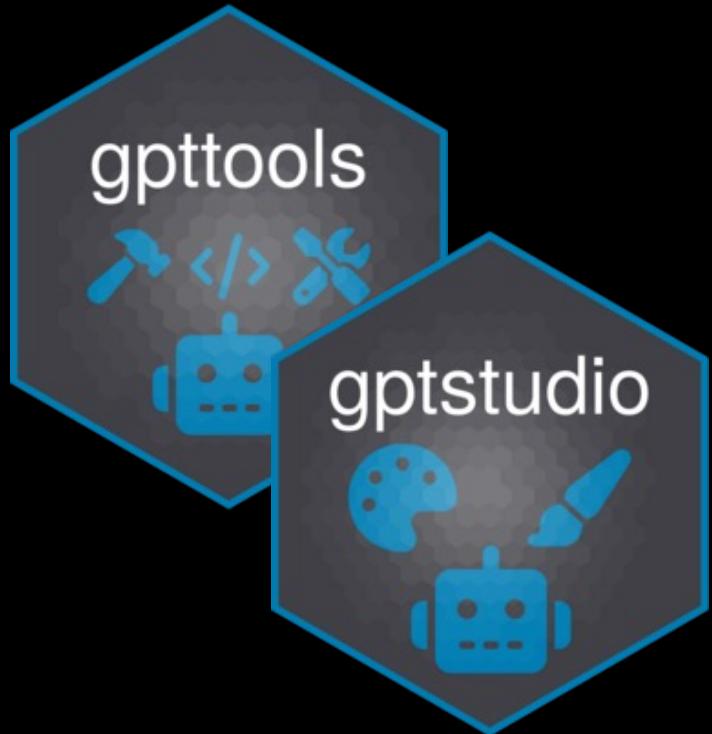
It turns out, I wasn't the only one who had this idea. Version 0.1.0 of [{gptstudio}](#) was already on CRAN, so I decided to give its CRAN package a try. To my surprise, it exceeded my expectations, and I was intrigued to explore it further. I enthusiastically checked out its GitHub repository and couldn't resist giving it a well-deserved star. As I dug deeper, I made an unexpected discovery—an open issue with a [help wanted](#) label.

Run Shiny App in Background #64
Samuel Calderon, Data Analyst at
Ministry of the Interior in Peru



jonthegeek commented on Mar 22

How to contribute



Thanks for Watching!

- [ChatGPT in RStudio with gptstudio – YouTube](#)
- [Teaching ChatGPT What It Doesn't Know](#)

-  youtube.com/@james-h-wade
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