Abstracts

Quarto Extensions for Educational Materials

Kelly Bodwin, California Polytechnic State University

In this talk, I will share my experience leveraging Quarto's extension abilities to streamline tasks in creating materials for teaching and learning. First, I'll discuss flourish, an extension that allows creators to highlight code in chunks, without losing their ability to be run as code upon rendering. Second, I'll introduce versions, an extension that separates a Quarto document into multiple source files, such as a "student" and "solution" version, or two variants of an exam. These two extensions are written in JavaScript and Lua respectively, two languages language I had no fluency in prior to producing them. I will share my process for both, relying on my existing language fluencies (R and python), generative AI help, and existing codebases to cobble together working extensions. Finally, I'll give some general tips for how to identify what language an extension can be written in, and when it must be triggered in the Quarto rendering chain; and how to get started producing your own extensions when you encounter moments of friction in your own material creation.

Leveraging LLMs for student feedback in introductory data science courses

Mine Çetinkaya-Rundel, Duke University

A considerable recent challenge for learners and teachers of data science courses is the proliferation of the use of LLM-based tools in generating answers. In this talk, I will introduce an R package that leverages LLMs to produce immediate feedback on student work to motivate them to give it a try themselves first. I will discuss technical details of augmenting models with course materials, backend and user interface decisions, challenges around evaluations that are not done correctly by the LLM, and student feedback from the first set of users. Finally, I will touch on incorporating this tool into low-stakes assessment and ethical considerations for the formal assessment structure of the course relying on LLMs.

From meh to wow, every time in no time - Creating your own ggplot2 theme

Cara Thompson, Building Stories with Data LTD

You've created a graph with ggplot2, but it looks like every other ggplot2 graph out there? Or you had a great graph aesthetic in Excel across your organisation, but making ggplots look as good feels like too much effort? Fear not, there's a good solution to both these problems: building your own ggplot theme!

Over the course of the talk, we will build a custom ggplot theme and turn it into a function so that you can then reuse it on any ggplot: `my_plot + theme_wow()`. In doing so, we'll explore how to build in accessibility and good design principles for text setting, margins, and colour choices. We'll also make a quick detour via the fun world of getting fonts to work in R. The aim is to equip you with a solid understanding of how to modify the standard ggplot theme, and give you a sensible starting point that you can build on if you want to add more bells and whistles. (P.S. It's way easier than doing all this in Excel, I promise!)