



Paper CT03

Resolving algorithmic SMQs *using AI chatbot and other techniques*

Corentin Le Scanff & Steve Prust

Elderbrook Solutions, Bietigheim-Bissingen, Germany

Agenda

- Define concepts of SMQs, algorithms and togetherness
- Play with AI
- A simple SAS technique
- A more elaborate SAS technique

Define concepts of

- SMQs
- algorithms
- togetherness

Explain the problem to chatGPT

- Providing test data
- How precise must the question be ?
- Guide the IA
- Acceptable result ?

Get some SAS code from chatGPT

- What kinds of SAS techniques are used ?
- Is it working ?

Generalization about AI

- How good is AI nowadays ?
- When can we expect AI to solve perfectly a problem, even when the problem is not well presented ?
- What about other engines or other chatbots ?

Simple SAS technique implementation

- Reverse the problem
 - Looking at intervals rather than looking at events
- Basic (easy) SAS tools (data steps, proc sql)
- Explain the logical steps of the SAS code

Simple SAS technique analysis

- Works well
- Is easy to maintain
- Is reasonably fast
- Not a generalized solution for any type of algorithm

Generalised algorithm solution

- SAS based and using techniques of
 - Hash tables
 - Boolean logic using RESOLVE function
- Contemporaneous requirement
 - “what do you do if you need a macro that can be embedded within a SAS statement, but the underlying task requires the execution of one or more DATA or PROC steps?”
- user written function to get an answer from an SQL query
- “does this patient have another AE within the time period of first qualifying AE”

User written function technique

- A function that invokes a user written macro and returns a numeric value
- A macro that calls an SQL query that stores a result into a macro variable
- Demo

Putting the techniques together

- Practicalities of the technique
- Successful or not ?
- Analysis of wider applicability of these techniques



Thanks !

Questions ?