SAS® Club Austria

Der Business Analytics Club für SAS User

23. November 2021 | 14:00 - 17:00 Uhr
Online Live Session



Dr. Gerhard Svolba Advisory Pre-Sales Solutions Architect SAS



Ulrich Reincke
Principal Pre-Sales Solutions
Architect
SAS



Phillip Manschek Sr Solutions Architect SAS



Kashif Din Sr Technical Architect SAS



Tamara Fischer Principal Data Scientist SAS



Arpit Jain
Pre-Sales Solution Architect
SAS



Harald Schreiter Principal BI Consultant 29FORWARD



Agenda

14:00 - 14:05 Uhr	Einleitung und Begrüßung Gerhard Svolba, Advisory Pre-Sales Solutions Architect, SAS
14:05 - 14:25 Uhr	Ein Blick auf den Status der Pandemie – Implementierung eines COVID 19 Dashboards mit SAS® Viya Harald Schreiter, Principal BI Consultant, 29FORWARD
14:25 - 14:40 Uhr	Wie können Monte Carlo Simulationen unterstützen, den Bedarf an Intensivstationsbetten in der Corona Pandemie besser abzuschätzen? Gerhard Svolba, Advisory Pre-Sales Solutions Architect, SAS
14:40 - 15:20 Uhr	Data Science auf der Suche nach der einfachsten Erklärung für technische Schwierigkeiten von Skitouren Ulrich Reincke, Principal Pre-Sales Solutions Architect, SAS



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Ein Blick auf den Status der Pandemie – Implementierung eines COVID 19 Dashboards mit SAS® Viya

Harald Schreiter



Using an interactive analytics dashboard to make optimal decisions in the COVID-19 pandemic

- A real life example



Gerhard Svolba, Data Scientist, SAS Austria



Harald Schreiter, Principal BI Consultant, 29FORWARD AG



Why using an interactive analytics dashboard?

Central access to as much relevant COVID-19 information as possible in one place for different user groups



More than just "descriptive statistics": Ad-hoc analyses, comparisons, what-if-scenarios



Data sources

Where does the information come from

- Currently only publicly available data from web pages
 - RKI (Robert Koch Institute)
 - DIVI Intensivregister (ICU beds)
 - Destatis (German Federal Statistical Office)
 - Krankenhausstandorte (Hospital locations)
 - ESRI Geo Data (ArcGIS)
 - Johns-Hopkins University
 - UNO (Population figures)





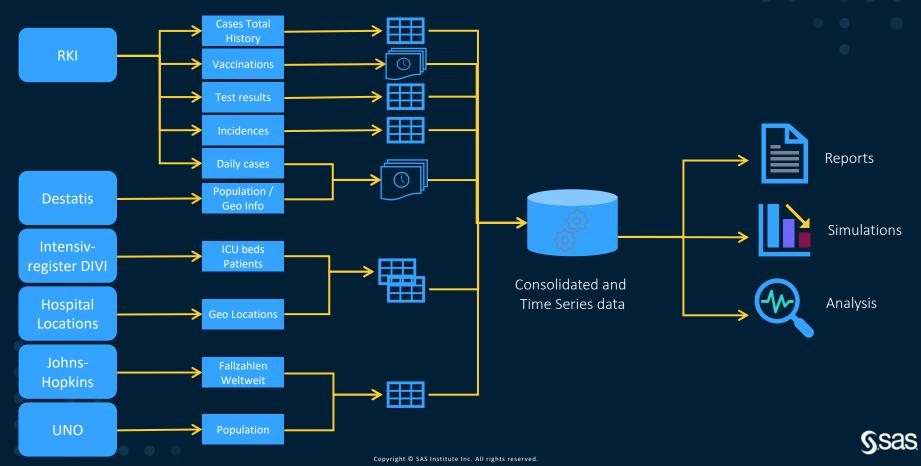








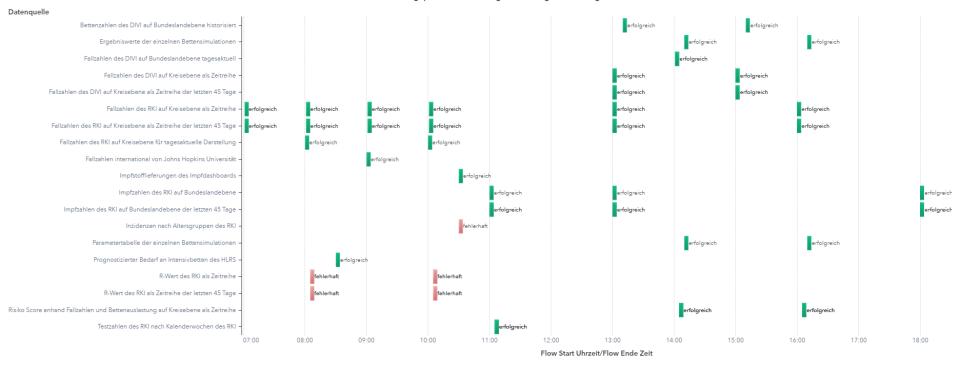
Data flows: from public sources to reports



Data Loads

At several times during the day

Zeitablauf der geplanten Datenabzüge über den gewählten Tag



Challenges

Spontaneous "ideas" of the data suppliers



Availability of the data

- "flexible" time of provision
- "at working days only"
- spontaneous change of storage location

Reliability of the data

- Format changes
- Column names / sequence changes
- Excel tab name changes
- Frequency daily/weekly



COVID-19 Risk Score

From various key figures for districts

DIVI Intensivregister

Beds free



Destatis

Share of population over 60

Score with deviation of the district from the national average of the key figures

RKI

7-days Incidence

Additional Data

Number of beds for number of inhabitants Number of beds for over 60 persons Vaccinations / vaccination rates

...



Risk Score Calculation

An Example

Overall Risk Score for District	Overall Score	383,9
- District Score beds free	- District Score beds free	430,2
+ District Score 7-days Incidence	+ District Score Incidence	-70,6
District Score over 60	District Score over 60	24,3



Überblick über das Informationsmanagement Tool



Detail-Berichte



Simulation



Aktuelle Lage



Bettenkapazität





Internationaler Vergleich







Impfungen











Wie können Monte Carlo Simulationen unterstützen, den Bedarf an Intensivstationsbetten in der Corona Pandemie besser abzuschätzen?

Gerhard Svolba



Werfen wir einen etwas detaillierten Blick auf die Abschätzung der benötigten Intensivstations-Betten

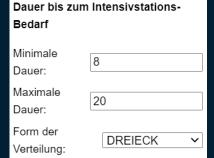
benötigt eine infizierte Person ein Intensiv-Bett



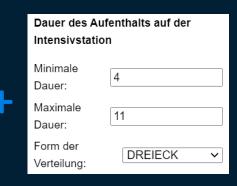
	Analyseinterval	l in die Zukunft (Tage):	
		21	
	Tägl. Veränderu	ıngsrate d. Covid-19	
	Meldefälle:	0.98	+
<	Hospitalisierung	gsrate: 0.032	
	Detailstufe der Simulation:	Deutschland ges. 🗸	

Szenarien-Parameter

Mit einer bestimmten Wahrscheinlichkeit (Hospitalisierungsrate),



nach 8-20 Tagen (duration until ICU demand)



für die Dauer von 4-11 Tagen (duration at ICU)



Implementation and Results

- What is the effect of
 - 0.5 % hospitalization rate?
 - + 1 day ICU time?
 - ...

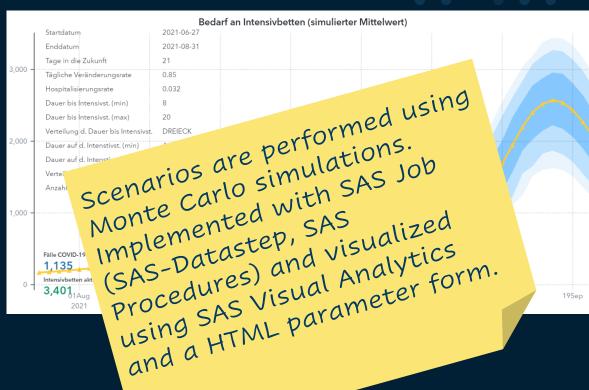
Subgroup Analysis

Detailstufe der
Simulation:

Deutschland ges.

Deutschland ges.

Bundesländer





SAS Simulations-Engine für den (Intensiv)Bettenbedarf



Szenarien-Definition	
Einstellung	▼ Wert
Time_Symp_ICU	10
Time_Stay_in_ICU	8
Time_Infect_Sympt	4
Till	22243
Iterations	10000
FutureDays	21
From	22189
DailyChangeRate	0.98
Anteil_ICU	0.04

Szenarien Definition (Hospitalisierungsrate, Dauer, ...)



Historische Fallzahlen

Prognostizierte Fallzahlen





Szenarienvergleich



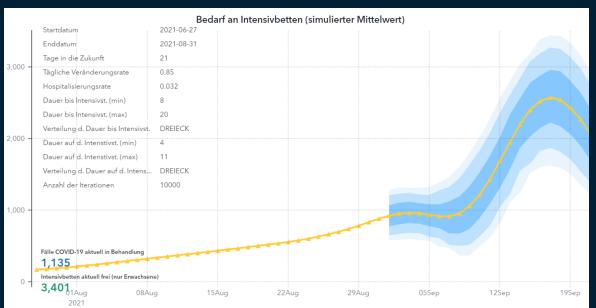




```
data casuser.simname. base;
    call streaminit (1234);
    format Case Date Future Date yymmddp10.;
    set casuser.CovidCasesInput;
                                       Zeitreihe der Covid-Fälle
    do iter=1 to 10000;  
Do-Loop Simulations
        ICU BED REQ=round(covid case new*0.032); Parameter HospRate
     Time till ICU need (random [8,20])
        Time Till ICU=round(8-0.5+rana('Uniform')*(20-8+1));
o-Loop Future Days
                Duration (Triangle random [4,11]) 🛶
  do days ICU=1 to ceil(4+rand('Triangle',0.5)*(11-4)-0.5);
            Future Date=Case Date + Time Till ICU + days ICU;
            output; Output a Record per Day and Scenario
        end; ** do days ICU;
    end; ** do Iter;
run;
```

Final Step

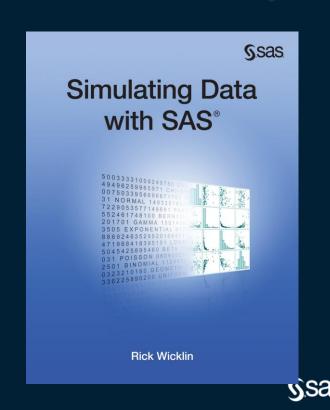
- Aggregate per Future Day and calculate Quantiles, Means, ...
 - PROC MEANS, PROC MDSUMMARY, PROC SQL, PROC FEDSQL, ...





Running Simulations in SAS

- Datastep
- Do Loops
- Rand function
- Output statement
- Procedures to aggregated, analyze and display



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Data Science auf der Suche nach der einfachsten Erklärung für technische Schwierigkeiten von Skitouren

Ulrich Reincke



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Pause bis 15:35

Online Verbindung bleibt bestehen



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SAS Communities und Veranstaltungen

Gerhard Svolba



SAS Communities

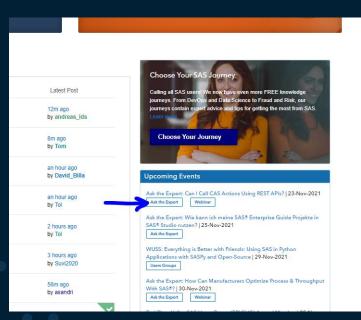
- SAS Communities
 - <u>https://communities.sas.com/t5/Ask-the-Expert/tkb-p/askexpert</u>
- Ask the Expert (all)
 - https://communities.sas.com/t5/Ask-the-Expert/tkb-p/askexpert
- Ask the Expert (Deutsch)
 - https://www.sas.com/de_de/learn/ask-the-expert-webinars.html



Ask-the-expert sessions

Global: https://communities.sas.com/

https://www.sas.com/de_de/learn/ask-the-expert-webinars.html

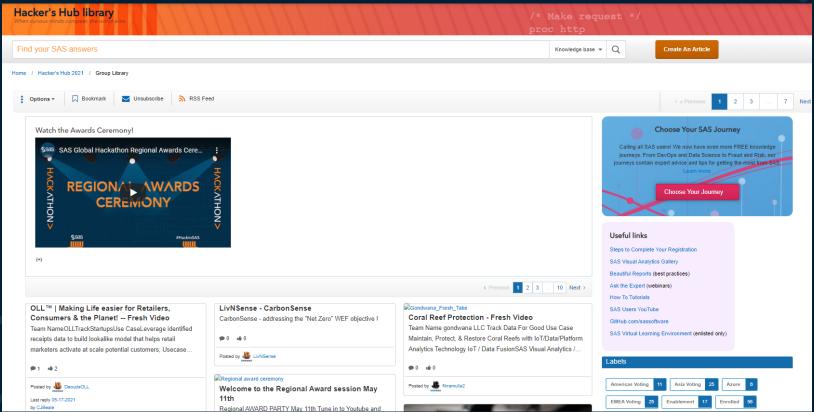






#HackInSAS

https://communities.sas.com/t5/Hacker-s-Hub-library/tkb-p/hackinsastkb-board





SAS Communities Articles

- Artikel-Sammlung von Gerhard
- https://communities.sas.com/t5/SAS-Communities-Library/Data-Science-and-Data-Preparation-Article-Overview-by-Gerhard/ta-p/727875



Youtube Webinars

Data Preparation for Data Science

Analyzing GPS Data from a Sailrace Using SAS Visual Analytics

Data Science Case Studies



Data Preparation for Data Science

9 Videos • 412 Aufrufe • Zuletzt am 08 07 2021

=+ × & ... Data Science methods have specific requirements on analysis data. Occurrences of missing values

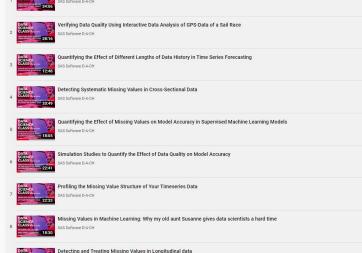
have to be investigated and handled, the distribution of the values need to be checked, and a sufficient amount of analysis objects is needed. Data Science methods also require certain data structures like the one-row-per subject structure or the timeseries dataset. In return these methods however also enhance the data preparation work and can also be used to verify and improve data quality and allow you to perform powerful feature engineering.

"Data Preparation" and "Data Quality" are therefore much more than just joining tables and checking the possible list of values. Data Preparation for Data Science is a discipline to create and quality check the analytic base tables and to derive the relevant features that shall be used in the analysis...

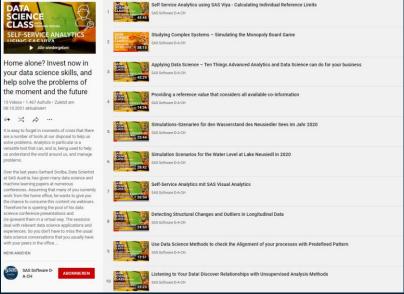
MEHR ANSEHEN











SAS Forum Digital

Youtube Playlist



SAS Forum digital 2021

3 Videos • Keine Aufrufe • Zuletzt am 11.11.2021 aktualisiert

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Sie haben das SAS Forum digital am 27. Oktober verpasst? Oder möchten sich Präsentationen, Use Cases und Diskussionen noch einmal anschauen?



Analytics-Modernisierung mit SAS: Erfahrungsaustausch zu SAS Viya und Cloud | SAS Forum Digital 2021

SAS Software D-A-CH



Technology Update von SAS: Cloud-Technologien, Responsible AI und mehr | SAS Forum Digital 2021

SAS Software D-A-CH



Analytics mal anders: E-Werk, Bahnhof oder Schlossallee? Der Monopoly-Check | SAS Forum Digital 2021

SAS Software D-A-CH



KSFE (digital)

https://ksfe-ev.de/cms/

Kooperation der SAS Anwender in Forschung und Entwicklung e.V.

