

# FANS Nordic Data Science Network

30/11-2021 - At Teams

13.00-16.00 CET



**Frans Holm**  
SAS FANS Denmark Manager



# Nordic FANS

## Local FANS manager

- Pia Rønnevik (Norway)
- Pietari Koskela (Finland)
- Daniel Ringqvist (Sweden)
- Frans Holm (Denmark)

FANS Nordic  
Data Science  
Network

# Agenda

9.30-12.30 CET

- Welcome
  - by Frans Holm, SAS
- Model factory - From idea to model in production in a matter of hours
  - by Stian Fagerli Arntsen, Sparbank 1
- Break
- DS2 coding and relation to VDMML
  - by Daniel Ringqvist, SAS
- From Data to Prediction on the Web
  - by Xavier Bizoux, SAS Global (GEL)
- Break
- Proc Python/Python steps
  - by Wilbram Hazejager, SAS R&D
- Closing & Lottery
  - by Frans Holm, SAS

# Thank You for Speaking

- Don't invent new things!
- You don't need the answer!



# News!

<https://blogs.sas.com/content/sgf/2021/11/02/creating-simulated-data-sets>

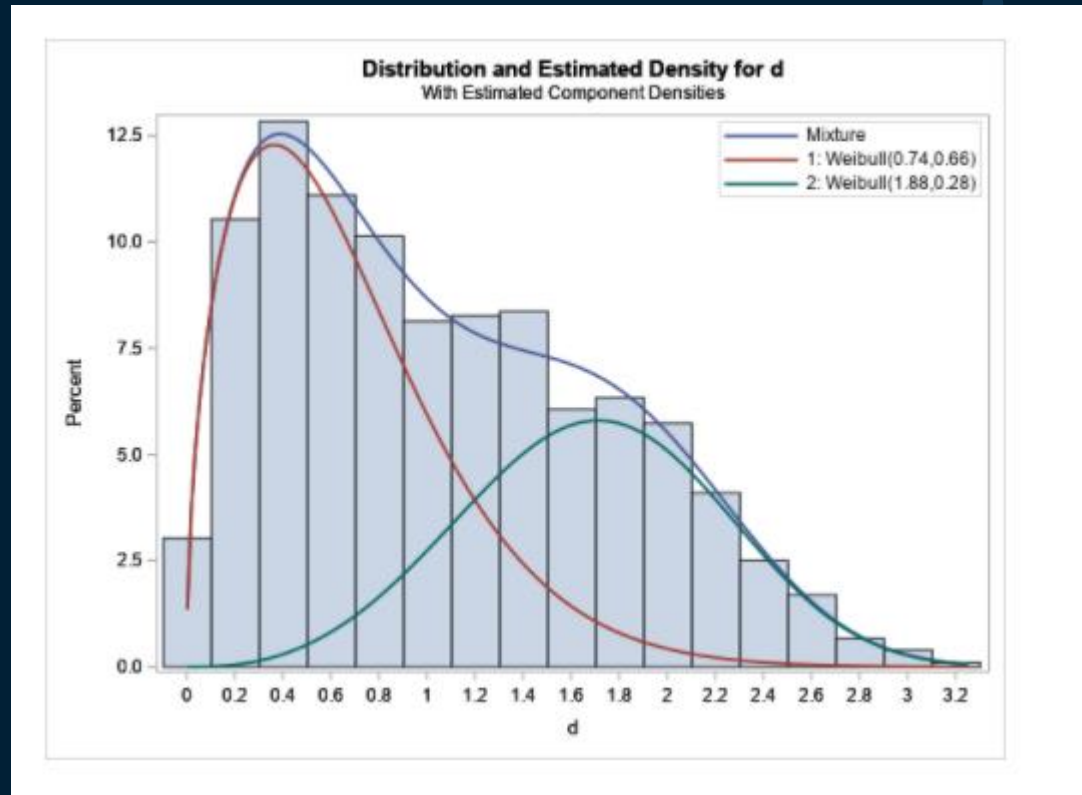
## Creating Simulated Data Sets

Function	Description
<code>rand('Uniform')</code>	Generates uniform random numbers (between 0 and 1)
<code>rand('Normal',100,20)</code>	Generates values from a normal distribution with a mean of 100 and a standard deviation of 20
<code>rand('Bernoulli',.4)</code>	Generates a 0 or 1 with a probability of a 1 equal to .4
<code>rand('Binomial',.2,5)</code>	Generates random numbers that represent the number of successes in a sample of size 5 with the probability of success equal to .2

# News!

<https://blogs.sas.com/content/iml/2021/11/01/fit-mixture-weibull-sas.html>

Fit a mixture of  
Weibull  
distributions in SAS



# News!

<https://blogs.sas.com/content/tag/analytics-rd/>

## The SAS Data Science Blog



BLOGS

## Blogs

All Topics ▾ All Industries ▾

### Tag: Analytics R&D



English

#### Advanced Analytics

October 26, 2021

Using State Space Models for the Stability Monitoring of Streaming Data

SAS' Rajesh Selukar introduces you to a new scoring feature.

[Read More](#)



Rajesh Selukar



English

#### Advanced Analytics

October 18, 2021

How SAS developed a digital twin of a supply chain

SAS' Bahar Biller, an operations researcher, details how to develop a supply chain digital twin.

[Read More](#)



Bahar Biller

# Sensitivity, specificity, positive and negative predictive values, and other 2x2 table statistics

## News!

<https://support.sas.com/kb/24/170.html>

All statistics discussed in this note are defined as follows assuming the

- The **sensitivity** (also called **recall** or **true positive rate**,  $TPR$ )<sup>Note</sup> is the percentage (Col Pct) for the (1,1) cell (84.62%).
- The **specificity** (also called the **true negative rate**,  $TNR$ )<sup>Note</sup> is the percentage (Col Pct) for the (2,2) cell (84.62%).
- The **positive predictive value (PPV)** (also called **precision**)<sup>Note</sup> is the probability of true response.
- The **negative predictive value (NPV)** is the proportion of negative test results that are true negative responders ( $4/15 = 0.267$ ).
- The definition of the **false positive probability** or rate (**FPR**) is the proportion of positive test results that are true negative responders ( $4/15 = 0.267$ ).
- Similarly, the definition of the **false negative probability** is the proportion of negative test results that are true positive responders ( $2/8 = 0.25$ ). Both focus on the proportion of test results that are not what we want.
- $F1$ <sup>Note</sup> is a combination of PPV and sensitivity ( $TPR$ ), or precision and recall.
- The **accuracy** or **correct classification rate** is the proportion of correct classifications.
- The **lift** is the ratio of the positive response proportion in a test level to the overall positive response proportion.
- The **likelihood ratio** of a positive test result (denoted  $LR^+$ ) is sensitivity divided by the false positive rate.
- The **attributable risk (AR)** (or fraction) is the fraction of event proportion that is due to the exposure.  $AR = ((11/15) - (2/8)) / (11/15) = 0.659$ . It can be estimated using the ME.
- The **population attributable risk (PAR)** (or fraction) is the reduction in event proportion that would occur if the exposure were eliminated.  $PAR = ((13/23) - (2/8)) / (13/23) = 0.558$ . Like AR, it can be estimated using the ME.
- The **number needed to treat** is the number of subjects that need to be treated to prevent one additional bad outcome.



# News!

<https://www.youtube.com/watch?v=C1s0ZXNTheo&list=PLVV6eZFA22QwrXd6nSDU18E6XgXSMOs87>

SAS Tutorial  
What is ANOVA?

# ANOVA

24:59 • Introduction and definition of ANOVA >

# Choose Your SAS Journey

<https://www.sas.com/sas/offers/choose-your-sas-journey.html?referid=CS1487>

- Become a SAS Data Ninja
- Fast Track Your Viya Adoption
- Become a Viya Admin Superhero
- The Art of Data Visualization
- Next-Gen AML & Transaction Monitoring
- SAS Starter Kit
- Unmasking Fraudsters in Banking
- Data Scientist Fast Track
- The Agile SAS Environment with DevOps
- Risk Lab Evolution

A woman with long reddish-brown hair, wearing a blue button-down shirt, is smiling and shaking hands with another person whose arm is visible from the right. The background is a blurred office environment with warm lighting.

# Collaborate with SAS Academic

## = Students that work with SAS

Project Collaborations = Extra hands

Potential new employees with SAS skills

Contact:

[Sara.Armandi@sas.com](mailto:Sara.Armandi@sas.com)

# Diverse Nyheder

IPO: Initial Public Offering

SAS will become  
IPO ready by 2024



**JIM GOODNIGHT**

CEO, SAS



MENTI

*Do you have:*

Input?

Suggestions?

Ideas?

Share good videos/papers!

# Lottery

Win a SAS gadget!

# Lottery

Today's present!



# Lottery

Sent a mail to:

[frans.holm@sas.com](mailto:frans.holm@sas.com)

Write:

Subject: Lottery

Mail: Name + Address



Drawing

How:

```
Run Cancel [Icons] Share Debug SASApp
Code Log Output Data (1)
1 *** Lodtrækning ***;
2
3 %let Antal=15;
4
5 data Vinder_af_lodtrækning;
6   call streaminit(0);
7   do until (Vinder_nr>0);
8     Vinder_nr = round(&Antal. * rand("Uniform"));
9   end;
10 run;
11
```

VINDER_AF_LODTRÆKNING	
	Vinder_nr
1	4



# Model factory - From idea to model in production in a matter of hours

by Stian Fagerli Arntsen, Sparbank 1

You can still participate in the lottery if

# Break

We start again at 14:05 CET

# DS2 coding and relation to VDMML

by Daniel Ringqvist, SAS

# From Data to Prediction on the Web

by Xavier Bizoux, SAS Global (GEL)

# From Data to Prediction on the Web

- The Git repository for the MAS only application:
- [https://github.com/xavierBizoux/heart\\_attack\\_prediction](https://github.com/xavierBizoux/heart_attack_prediction)
- The YouTube recording of the presentation:
- <https://www.youtube.com/watch?v=8tabXbpdQ2M&t=146s>
  
- The blog covering the usage of REST APIs to extract data from SAS Viya
- <https://blogs.sas.com/content/sgf/2021/10/28/creating-a-react-web-app-using-sas-viya/>
- The related Git repository:
- [https://github.com/xavierBizoux/viya\\_app](https://github.com/xavierBizoux/viya_app)

You can still participate in the lottery if

# Break

We start again at 15:20 CET

# Proc Python/Python steps

by Wilbram Hazejager, SAS R&D

# Closing & Lottery

By Frans Holm, SAS





MENTI

*Do you have:*

Input?

Suggestions?

Ideas?

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FANS

## Network meetings

# Next Data Science meeting

[sas.com/fans](https://sas.com/fans) -> Events -> All live Events

- 14/12 Customer Intelligence (Nordic) 13-14 CET
- 26/1 AML for AML users (Nordic) 9.00-12.10 CET

# Network meetings

<https://www.sas.com/sas/events/nordic/fans-nordic-sas-user-group/all-events-dk.html>



## Virtuelle FANS-netværksmøder i Danmark



## Virtual FANS Network Meetings Finland



## Virtuelle FANS nettverksmøter i Norge



## Virtuella FANS-möten i Sverige



Don't miss out – stay updated!

## Nordic SAS User Newsletter

Monthly email with  
upcoming Nordic events  
and activities.

Subscription-based.  
[Subscribe](#)

# Lottery

## Today's present!





**Thank you for  
participating**

Please give feedback

Frans.Holm@sas.com

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