Hjertelig velkommen til FANS nettverksmøte Programmering

21. oktober

Pia Skare Rønnevik, Customer Success Manager, SAS Institute pia.roennevik@sas.com



The agenda

- 13.00 13.10 Velkommen og info fra FANS/Education
- 13.10 13.30 Akademisk kvarter fra student til talent
- 13.30 14.00 Proc network

 The presentation is held by Hans De Wit, Telenor. (in English)
- 14.10 14.40 Makro programmering for å styre prosesser i Viya Presentasjonen holdes av Trond Holmen, SAS Institute.
- 14.40-14.50 Konkurranse
- 14.50 15.20 Custom transformation i DI Studio vs. Custom Step i SAS Studio Presentasjonen holdes av Tom Arne Orthe, SAS Institute.
- 15.20-15.30 Pause
- 15.30 16.00 Deep learning i Python med SAS DLPy: Hva kan vi bruke det til og hvorfor?

Presentasjonen holdes av Ina Conrado, SAS Institute.

FANS Network Meeting & Platform Overview

| • | 14/9 | FANS Anti-Money Laundering | Teams | 8.30-11.30 |
|---|-------|-------------------------------|-------|------------------|
| • | 16/9 | SAS Platform Overview | Teams | 13-16 |
| • | 23/9 | FANS Data Science (Nordic) | Teams | 9.30-12.30 |
| • | 29/9 | FANS Platform | Teams | 13-16 |
| • | 30/9 | FANS Analytics | Teams | 13-16 |
| • | 20/10 | FANS VA | Teams | 13-16 |
| • | 21/10 | FANS Programming | Teams | 13-16 |
| • | 28/10 | FANS CI (Nordic) | Teams | 12-14 |
| • | 28/10 | FANS Intro. til CI (Nordic) | Teams | 15-16 |
| • | 23/11 | FANS VA (Nordic) | Teams | 13-16 |
| • | 30/11 | FANS Data Science (Nordic) | Teams | 13-16 |
| • | 1/12 | FANS Cross Topics | Teams | 13-16 |
| • | 9/12 | FANS Platform Overview | Teams | 13-16 |
| • | 14/12 | FANS Intro. til CI (Nordic) | Teams | 13-14 <u>LIN</u> |



Thanks to those who are presenting in a Network Meeting





Topics:

- SAS Code Trouble-shooting & Optimising
- SAS Customer Intelligence 360
- SAS Visual Analytics 8.5
- CAS Programming in SAS Viya
- SAS 9 Platform Administration
- SAS Data Management and DI Studio
- SAS Enterprise Guide
- SAS Studio
- SAS Analytics, Al and Machine Learning
- SAS Architecture & Administration

Learn more and register

S.sas

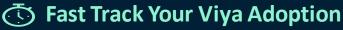
Choose Your SAS Journey

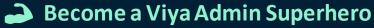
- Free personalized learning journeys for SAS Users & Admins.
- Subscription-based and delivered into your inbox weekly.
- No jargon just proven expert advice.



- √ What's New?
- √ Tips & Tricks
- ✓ Video Tutorials
- **✓** Best Practices
- ✓ Expert Blogs
- ✓ Industry Knowledge
- ✓ Connect with Experts









Next Gen AML & Transaction Monitoring

SAS Starter Kit

https://www.sas.com/sas/offers/choose-your-sas-journey.html?referid=CS1488



Artificial Intelligence Game - Play your way towards an AI strategy!



- There is a game master for each country.
- It will be used for one individual customer or
 between customer in a FANS setup.



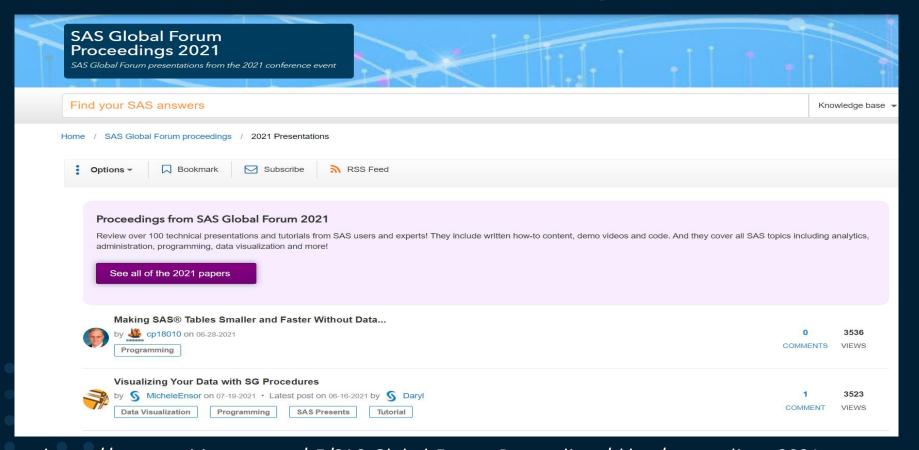
Keep yourself updated!

- The SAS documentation can be found here.
- SAS-L, the place for in-depth discussions online.
- SASENSEI, an online game where you get to test your SAS knowledge.
- Blogs, a great way to stay up to date on various fields.
- Github, where you can find SAS code that people share recommend Roger DeAngelis.
- Articles about SAS can be found here <u>Lexiansen</u>.
- SAS User Groups, many regional user groups recommend The Boston Area SAS User Groups.
- SAS Global Support Community, where you can ask questions and join discussions
- SAS Nordic Communities

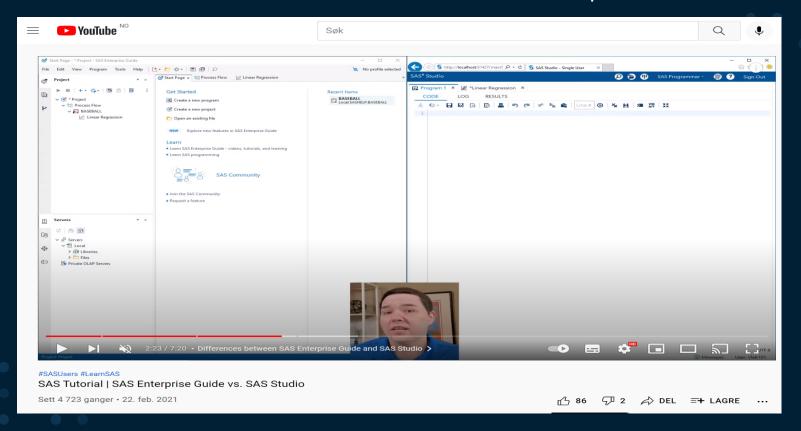




SAS Global Forum Proceedings 2021



Want to learn more about the difference between SAS Enterprise Guide vs. SAS Studio



https://www.youtube.com/watch?v=C7E4TTATfgw



Want to learn more about Advanced Functions and Perl Regular Expressions!

- A Survey of Some of the Most Useful SAS Functions, by Ron Cody: https://support.sas.com/resources/papers/proceedings12/241-2012.pdf
- Don't Be a SAS® Dinosaur: Modernizing Programs with Base SAS 9.2 Enhancements, by Warren Repole Jr.: https://support.sas.com/resources/papers/proceedings09/143-2009.pdf
- Unstructured Data Analysis: Entity Resolution and Regular Expressions in SAS, by Matthew Windham: https://support.sas.com/content/dam/SAS/support/en/books/unstructured-data-analysis/68578_excerpt.pdf
- An Introduction to Perl Regular Expressions in SAS 9, by Ron Cody and Robert Wood Johnson: https://support.sas.com/resources/papers/proceedings/proceedings/sugi29/265-29.pdf



Want to learn more about Arrays!

- Examples of Array Processing, SAS documentation: https://go.documentation.sas.com/doc/en/pgmsascdc/9.4_3.5/lrcon/p1avz8shjwgqorn1royv9tnys89y.htm
- Arrays Made Easy: An Introduction to Arrays and Array Processing, by Teresa Schudrowitz: http://www.sys-seminar.com/WISUG Presentations/Arrays Made Easy.pdf
- Adventures in Arrays: A Beginning Tutorial, by Jane Stroupe:
 https://support.sas.com/content/dam/SAS/support/en/books/unstructured-data-analysis/68578_excerpt.pdf
- Using Arrays in SAS Programming, Technical Paper: https://support.sas.com/resources/papers/97529_Using_Arrays_in_SAS_Programming.pdf

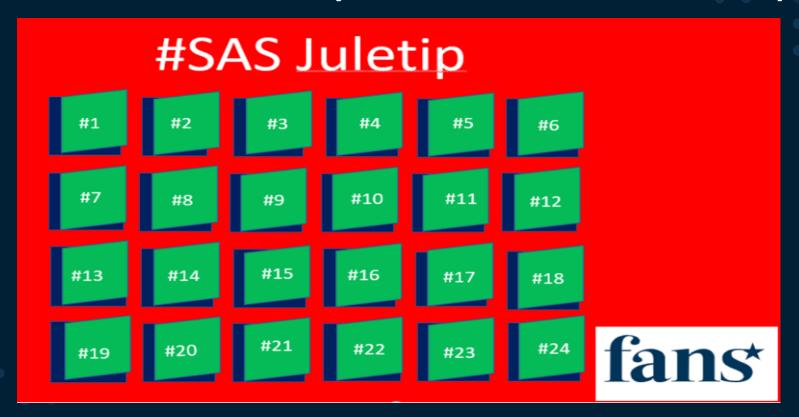


Want to learn more about Hash Objects!

- Data Step Hash Objects as Programming Tools, by Paul M. Dorfman and FL Koen Vyverman: https://www.beoptimized.be/pdf/SUGI30_236.pdf
- SAS® Hash Object Programming Made Easy, by Michele M. Burlew: https://support.sas.com/publishing/pubcat/chaps/62230.pdf
- Data Management Solutions Using SAS Hash Table Operations: A Business Intelligence Case Study, by Paul Dorfman and Don Henderson: https://www.amazon.com/Management-Solutions-Using-Table-Operations/dp/1629601438
- Hash Object Tip Sheet: https://support.sas.com/content/dam/SAS/support/en/products-solutions/base-sas/tip-sheets/hash-tip-sheet.pdf



Nordic SAS Community advent calendar 2021 – Juletips



https://communities.sas.com/t5/tag/juletip2020/tg-p/board-id/nordic-group



Juletip #5 How to add 0's before a character variable

The second demonstration show an example on how to add 0's before a numeric variable 'y':

data numeric;
 input x y;
 cards;
7886 44
5431 243
8934 1
6541 675;
 run;

data temp;
 set numeric;
 yy = put(y, z5.);
 run;

The z5, is adding 'k' zeros before the variable y, so the total length of the new variable 'yy' is 5. The 'k' is calculated as 5 - number of values in the

 Obs
 x
 y
 yy

 1
 7896
 44
 00044

 2
 5431
 243
 00243

 3
 8934
 1
 00001

 4
 6541
 675
 00675

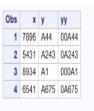
variable 'y', and gives us the following results:

The Zw.d format doesn't work on a character variable, so the last example show how to add 0's before a character variable 'y':

```
data character;
   input x y$;
   cards;
7896 A44
5431 A243
8934 A1
6541 A675
;
run;

data temp;
   set character;
   yy = cats(REPEAT('0',5-length(y)-1), y);
run;
```

The CATS function concatenates 0's with the variable 'y', while the REPEAT function calculates the repeat of 0's. The repeat of 0's is calculated as: 5 - number of letters and values in the variable y - 1. This SAS code gives the following output:



FANS Competition







FANS board Norway

2020-2021

- Chairman of the board:
 - Nils Erik Fossum, Posten Norge
- Members of the boarad:
 - Viggo Skar, Oslo universitetssykehus
 - Hans de Wit, Telenor Norge
 - Anne Wike, Verdipapirsentralen
- Deputy:
 - Tore Borge, Storebrand

- Representatives from SAS Institute:
 - Pia Rønnevik (alt. Petter Dybvig/Vegard Hansen)
- Operating partner, SAS Institute:
 - Bettina Stibolt
 - Kaja Emilie Stræte

www.sas.com/fans



FANS partners

Across the Nordics































FANS Network Meeting 21. oktober 2021

SAS Education

Ragnhild Skuland

Customer Training Advisor

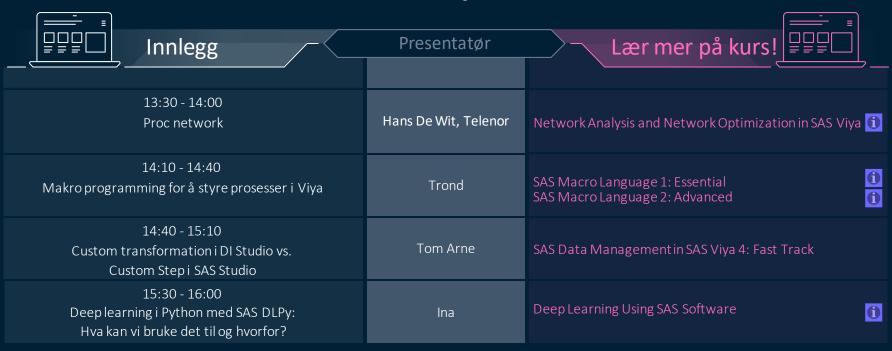
Mobile: 915 75 960



Norway course site: https://www.sas.com/no_no/training/overview.html



Hvilket kurs passer til?



Fysiske klasseromskurs + hybrid via Teams

1



Live Web med instruktør via Zoom

E-læringskurs: SAS Learning Subscription











SAS Learning Conference

The Power of Connectivity

- ✓ 18. november
- ✓ Virtuelt i 3 spor med1-times sesjoner. Duvelger fritt "der og da"!
- √ 1500,- pr. deltager FANS-rabatt 25% = 1125,-

| Time | Software & Technology | Advanced Programming | Practical Insights |
|-----------|--|---|--|
| 09 am CET | | Welcome & Key Note: Gloria J. Miller, maxmetrics | |
| 10 am CET | Enhance Your SAS* Visual Analytics Skills (Speaker: Mark Geldart) | Transitioning from SAS'9 to SAS' Viya" (Speaker: Ian Sedgwick) | Protecting the Value of Your Machine Learning Investment (Speaker: Gregoire de Lassence) |
| 11 am CET | Using DevOps to Improve Collaboration, Testing, and Deployment in SAS* Viya* (Speaker: Paul van Mol) | Enhancing Your SAS* Code with the DS2 Procedure (Speaker: Hanna Fenianos) | Practical Tips and Tricks for SAS* Viya* Administrators (Speaker: Paul Scheenaart) |
| 12 pm CET | Connecting Data in SAS* Data Integration Studio (Speaker: Jim Watson) | Go Beyond the Ordinary: Taking Full Advantage of SAS' Cloud Analytic Services Using CASL (Speakers: Bruno Müller/Peter Styliadis) | Operational, Streaming Analytics from Data Source to the Cloud (Speaker: Peter Pugh-Jones) |
| 01 pm CET | | Lunch break out sessions in local language | |
| 02 pm CET | Leveraging SAS* Visual Analytics Reports Using SAS* Add-In for Microsoft Office (Speaker: Mary Harding) | Calling Python Functions from SAS* Using the FCMP Procedure (Speaker: Marty Hultgren) | SAS" 9.4 to SAS" Viya": Snippets You Need to Know (Speaker: Judy Orr- Lawrence) |
| 03 pm CET | Using SAS/ACCESS Libraries and Viya Data Connector CASUBS in the Azure Cloud (Speaker: David Ghan) | Working with REST APIs in SAS* (Speaker: Mark Jordan) | An Introduction to ModelOps (Speaker: Peter Christie) |
| 04 pm CET | Coding Productively in SAS* Enterprise Guide* 8 (Speaker: Chris Chan) | Creating Your Own Macro Functions (Speaker: Jim Simon) | Importing SAS* Enterprise Guide* Projects or SAS* Data Integration Studio Jobs to SAS* Viya* (Speaker Su Chee Tay) |



Education is a continual process, it's like a bicycle... If you don't pedal you don't go forward.

George Weah

sas.com



Academic Quarter – From Student to Talent

Information from SAS Academic Program

FANS Network meeting – Programming October 21th 2021

Vegard Hansen,

SAS Academic Program Manager

E-mail: vegard.hansen@sas.com

Phone: +47 977 44 445





SAS Academic Programs Bridging the analytics talent gap



SAS Resources for Teaching and Learning Provided to Faculty



Build SAS Skill and Usage Among Students



Connect Students with SAS Customers for Hiring

SAS Software Certified Young Professionals (SCYP)



Build SAS Skill and Usage Among Students









Sign Up & Get Started

SAS' Software Certified Young Professionals



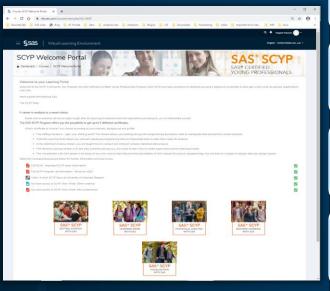
Sign Up & Get Started

The demand for individuals with SAS knowledge and expertise is growing in organizations globally. To help close the analytics skills gap, we are offering students access to software, training for free. Participation in certification exams is possible at a discounted fee.

Join students from multiple countries in the SAS Software Certified Young Professionals program to get support and guidance from expert instructors while you learn. Once you are certified, we will connect you with organisations looking for young SAS Certified professionals.

If you are not sure that SCYP is right for you at this moment, once you sign-up, you can try our **free data literacy course** which will give you an idea of what to expect if you choose to continue learning.

SAS® Software Certified Young Professionals (SCYP)



SCYP offers you the possibility to get up to 5 different certificates

The *Getting started* is... right, your starting point! This stream allows you building strong SAS programming foundation skills to manipulate data and perform simple analyses.

With the *Learning More* stream you will learn advanced skills to manipulate data to make them ready for analysis.

In the *Statistical Analysis* stream, you are taught how to conduct and interpret complex statistical data analysis.

The *Visualization* with SAS stream is for those of you who want to learn the powerful possibilities of SAS without focusing on programming. You will learn to visualize & analyze data and design reports

The *Machine Learning* stream is for the data scientists among you, who want to learn how to create supervised machine learning models.



SAS Software Certified Young Professionals – SCYP

SAS Certified Young Professionals

Get Started Today



Free SAS software for academic, noncommercial use. An interactive, online community. Free access to superior training and documentation. Free registration for the certification exam.

Gain the analytical skills you need to secure your future.



Software for Learning

SAS
OnDemand

SAS Studio
Enterprise Guide
Enterprise Miner
Forecast Server
Text Miner

AWS hosted 5gb data upload

Viya for Learners

Viya 3.5 VDMML Python & R JupyterLab

SAS hosted No data upload Available through eLearning, Coursera, and Universities

2021 Students' Segmentation Job focus

Data Engineer Data Analyst Business Analyst Data Scientist

Open door: SAS VA on V4L



Base Programming (BA) Advanced Programming (AP)

Statistical Business Analyst (SBA) Visual Modeling using SAS® VS
Or SAS VA

Machine Learning Using SAS Viya



Talent Connections

Three-way Collaborations for Talent Development



Connect Students with SAS Customers



- Articulate skills requirements
- Curriculum Inputs
- Industrial Research Projects
- Student Projects & Internships
- Guest Lectures
- Financial Support for:
 - Sustainability Funding
 - Bursaries
 - Industrial Research



- Analytics Software
- Training Curriculum
- Technical Workshops
- Certifications
- Curriculum Development



- Specialised curriculum
- Sustained Skills Pipeline
- Industry Model Validation
- Independent Research Service
- Industry Regulation Interpretation
- Knowledge & Innovation Hub
- New Technology Scan
- Thought-Leadership



SAS Norway Internship Program – Talent Connecting

What – The Internship

- Internship period of (least) 10 weeks autumn
- Students should work with issues that have both academic and industrial relevance and include components of SAS Software.
- Fulltime (100%) period.
- The Internship is a mandatory practice period in the study (non-paid), part of the curriculum and non-paid.
- As part of the study, students will summarize the results after completing the Internship - practice report with presentation.
- 6 students in 2020, 7 students in 2021
- 3 use cases each year

Qualifications:

- Completed at least one SAS e-learning course through SAS Software Certified Young Professionals (SCYP).
- Have an analytical mindset and are a passionate problem solver.
- Curious about technology, analytics and how things work.
- Ready to tackle difficult challenges, Service-minded and able to deliver excellent customer service with confidence
- Willing to ask for help and share knowledge, willing to learn new things and can work both independently and goal-oriented and be part of a team.
- Since you probably will be working with clients it is important that you are outgoing and business-focused.











Analytics Software
 Training Curriculum
 Technical Workshops
 Certifications
 Curriculum Development



Specialised curriculum
 Sustained Skills Pipeline
 Industry Model Validation
 Independent Research Service
 Industry Regulation Interpretation
 Knowledge & Innovation Hub
 New Technology Scan

SAS Norway Internship Program – Talent Connecting

Why - SAS involvement, obligations and responsibility

- Part of the partnership with the MSc Business Analytics program at BI Business School in Oslo
- The Intention and purpose Perform master and bachelor students' best practice of strategic and tactical methods and models in analytics; How to impact organizations for analytics success by real case learning formats.
- Consist three parts; Tailored services as integrated part of curriculum, access to SAS Software and e-learning courses and a volunteer part - possibility to qualify for Internships, Master Thesis, etc..
- It is SAS that enters into an agreement, with a 'Learning Contract' agreement between BI Business School, the Students and customers.
- Find tasks/projects/cases that which motivates the students, give them a good (real) work experience as junior consultants, which at the same time has business value both for the customer and for SAS.
- Provide the necessary training and follow-up of the students along the way, in the form of courses, access to mentors and the like.
- Arrange administratively for the Internship period











SAS Norway Internship Program – Talent Connecting

HOW – Working on real business cases for real customers

- The students are part of SAS' daily work and work as junior consultants on real cases being part of the "SAS family".
- The students work in teams in pairs with at least one SAS mentor (advisors) per team/use case.
- Before the Internship period starts use cases are selected and qualified and seen as important for the clients and for SAS.
- The first days (week) of their Internship there is an onboarding to prepare the students for the work more SAS learning, learn about SAS culture, intro to the customer and case.
- The Internship is finalized by presenting the results of their work to customer and SAS resources Often to people in current management.



Example - Internship 2021

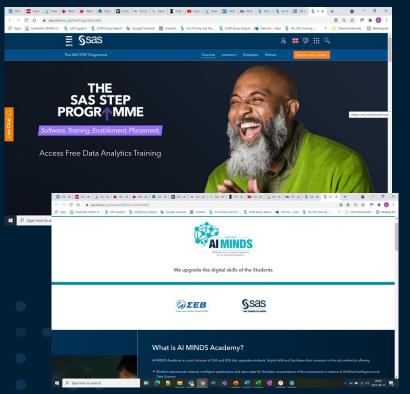
High Level Plan and activities

| Winter 2021 | Spring 2021 | Autumn 2021 | |
|--|--|---|---|
| Reqruitment | Pre-internship | Internship period | Post-internship |
| qruitment: Info Internship 2021: 17th Feb Job advertisement: 17th Feb Deadline for applying: - Sunday 14th March Regruitment and selections period: Mid March to mid April | SAS Internal: Mentors Finding and qualifying use-cases/clients Outreach SAS Customers Administrative tasks | Week 34 – 43 Onboarding Clustomer and Use Case – work tasks Get more SAS skills Mentotring Weekly stand-up/status meeting Social activities | PR/Marketing activities Linkedin posts and pulse articles SAS articles Other medias – AmCharrete. (Master Thesis) Junior/part-time consultants) |
| raining (e-learning) SAS SCYP Program Hands on workshop – 2th March E-learning and certification | Pre-intership activities: Kick-off meeting: May Qualifying use-cases/clients Meet and greet Learn more? | | |

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Bridging the gap between business and academia

Example – Insurance Company



- Persona: Ms S., Academic Relations, HR
- The company has an internship program, apprenticeships and offers dual study
- Looking for talents to fill their IT pipeline
- Although the brand is well known the students, they are looking for are not aware of the wide possibilities to work in the IT of an insurance
- They are not seeking for many SAS skilled students
- Data Science skills would fit better
- Their headquarter's location is not very attractive for young people

Possible support from SAS Academic Program:

- Train internship students online in (Basic Data Science) Skills before they start (SAS SCYP)
- Identify target universities and programs nearby where SAS is taught
- Establish connection to the existing collaboration between company and university
- Organize presentation / event together with company to attract students



Talent Connection: Bridging the gap between business and academia

Connect you with our university network and develop new ones together

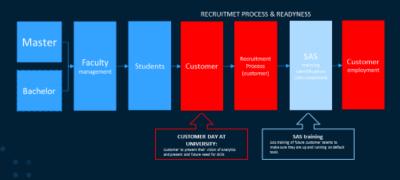
- For internships, thesis, etc.
- For new hires (full-time, part-time, student engagement)
 - identify & match by industry or topic

Upskill student internships and trainees:

- Offer online upskilling in techniques (i.e. Data Science Basics, programming, etc.)
- Ideally before interns start so they can be used differently in the company
- About methods and skills, not necessarily about SAS
- Using SCYP/Academic HUB or a customized mix of our offerings

Customer talent acquisition process endorsed by SAS

- Customer need to be presented as a attractive learning institution for young talents



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Grow Academic Engagement

Connect with Faculty and Share Job Postings

Provide
Data/Questions for
Course Projects

Participate on Advisory Boards

Plan Joint Events with SAS on Campus(es)

Post Jobs on Universities Platform

Hire Interns

Provide Guest Lectures

Conduct
Collaborative
Research with
Faculty

Identify SAS skills for curriculum integration

Engage with student professional societies on campus

Support Capstone Projects

Host Student
Business Case
Competition



Some useful links / More information

- SAS for students (Nordic)
 - https://www.facebook.com/SASforStudents/
- Register for SCYP-program here https://www.sas.com/sv_se/learn/certified-young-professionals.html
- SCYP community on facebook
 - www.facebook.com/sasscyp
- SAS Academic Programs
 - https://www.sas.com/sv_se/learn/academic-programs.html
- Documentation,
 - https://support.sas.com
- SAS Course on Coursera and LinkedIn Learning





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Wideree is one of many clients which have been heavely impacted by recovidiffschallenges this year, and we are proud of these students both for their personal achievements and what they have learn, but also for the actual business value they where able to contribute with in a challenging time for Wideree, work, work, and best of fuck on your Master thesis this spring which you are also writing about Wideree.

Also a thank you to Widerge and Nicolai Berg Johansen for your support to our #SASinterns program in partnership with BI Norwegian Business School

#mentorshipmatters #mentoringmatters #analyticseconomy #growthmindse





From theory to practice: Our journey as interns at SAS Institute – as analytics consultants

Before the Internship Started

We are II Norwegam Business School students of VMS: in Business Analytics with a deep passion for data-feritive manalytics. What we love about data science is the journey towards achieving three significant links of results discovery; insight, and innovation. Data science has been an interdisciplinary field about processes and systems to extract knowledge or insights from data in various forms, either structured or unstructured, which is a strength of the structured or unstructured, which is a single structured or unstructured, which is an and predictive analytics. Still, without the expertise of professionals who turn cutting-edge and predictive analytics. Still, without the expertise of professionals who turn cutting-edge continuous of some or structured or structured or substitution of the structured or substitution of substitution of substitution of substitution of the structured or substitution of the structured or substitution of subs

The Connection between academia and industry

Being Business Analytics students at BI, we had an opportunity to get SAS Software Certification Young Professionals (SAS SO(YP) and then also to complete an internship at SAS Institute - the leader in analytics - and to work closely with their client <u>Wideroe</u>, the largest regional airline operating in the Nordic countries.

We were placed under the customer advisory department as Junior Analytic Consultants in Norway. The department is responsible for helping potential clients of \$AS in determining which type of software package is best suited for them and also demonstrating the use of software in a use case.

Viktige lærdommer fra min dataanalyse praksis hos SAS

Over en periode på 10 uker, fra midten av august, hadde jeg den fantastiske muligheten til å være en del av SAS Institute Norway som en av deres analytics intern.

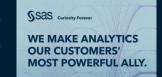
Dette var en stor mulijhet til å filegne seg viktig jandrom og nye erfaringer, og utbryttet overgikk forovertringen. Denne erfaringen og mulijheten ville gig like hatt fornden om det alademske samarbedet mellom kandelshøpsiden 81 og 58 institute, og ikke minst innssten ligt inn av Vegard hansene og hans tratem 158. Den førten belingsnen på hovorian innershøpsev tille utforme seg, ville også vise seg å være noe av han gje verdsatte mest; gjennomførelsen og arbeidet som var lagt ned i forfraat som gorde het epidevellen frijerende ge bhalgelig.

stitt oroniale

Prospikes jeg bit tidelt we et proof-of-value prospike for langues forballichrand (MET), MET has en gen audeling for breddefstrallen, som onder å at dere ansayer til det neste notiket. Honge er breddefstallen et stort tenn shorr stadig me antiker blir skrevet og diskusjoner formet - så anstrulgisk basener prospikest seg all nes om enareligende for mange. Som en note forballentusate salv, sve det en glede å være involvert i prospikets horr vi bygget brome mellom SAS's analytiske errer og NET's som om massimmer delskates innenfor treddefstrallen.

For at en skal lykkes er det viktig med støttespillere og et nettverk rundt seg, noe som fort viste seg å være en del av SAS kulturen. Gjennom å tilegne oss mentor og sette oss på et team med representanter fra ulike avdelinger erfarte vi arbeidet som reelt og viktig, og ikke «bare et internship».

You can read stories out there....



- <u>Digi.no</u> (only in Norwegian unfortunately⊕)
- MSc students making real impact on lives and business' with SAS Analytics - <u>Erlend Bjostad</u>
- My Data Analytics Internship Experience at SAS Norway -<u>Kashmeel Bisseru</u>
- Digitale kundeopplevelser (in Norwegian) Marius Karlsen
- Creating personalized digital customer experiences <u>Juan</u>
 <u>Manuel Ruiz Acosta</u>
- Lærdommer fra min dataanalyse praksis hos SAS (Norwegian) -Joakim Martinsen
- From theory to practice: Our journey as interns at SAS Institute
 - as analytics consultants Lorenz Eichorn & Abhjjeet Singh





https://www.sas.com/no_no/learn/academic-programs.html