

Why you should learn about Data Science @WU?



Prof. Axel Polleres, Dr. Sabrina Kirrane

- Find these slides at:
<http://polleres.net/presentations/>



SBWL Web page:



Info on our Webpage:

- description
- green card
- contact (for questions)
- registration details/dates

<https://www.wu.ac.at/en/dpkm/teaching/sbwl-data-science>

Where to find this Slidedeck & Key Dates?



Important Dates:

Important Dates:

Tutorials (Online):

Tue, 02.09.2025, 13:00-16:00
Wed, 03.09.2025, 13:00-16:00

Entry Exam (Online):

Tue, 09.09.2025, 8:00-10:30

Don't miss the LPIS registration!

<http://polleres.net/presentations/>

Why you should learn about Data Science @WU?

Harvard
Business
Review

~12
years
ago

Data Scientist: The Sexiest Job of the 21st Century

by **Thomas H. Davenport** and **D.J. Patil**

FROM THE OCTOBER 2012 ISSUE

<https://hbr.org/2012/10/data-scientist-the-sexiest-job-of-the-21st-century>

More
current
perspec
tive:

Is Data Scientist Still the Sexiest Job of the 21st Century?

by **Thomas H. Davenport** and **DJ Patil**

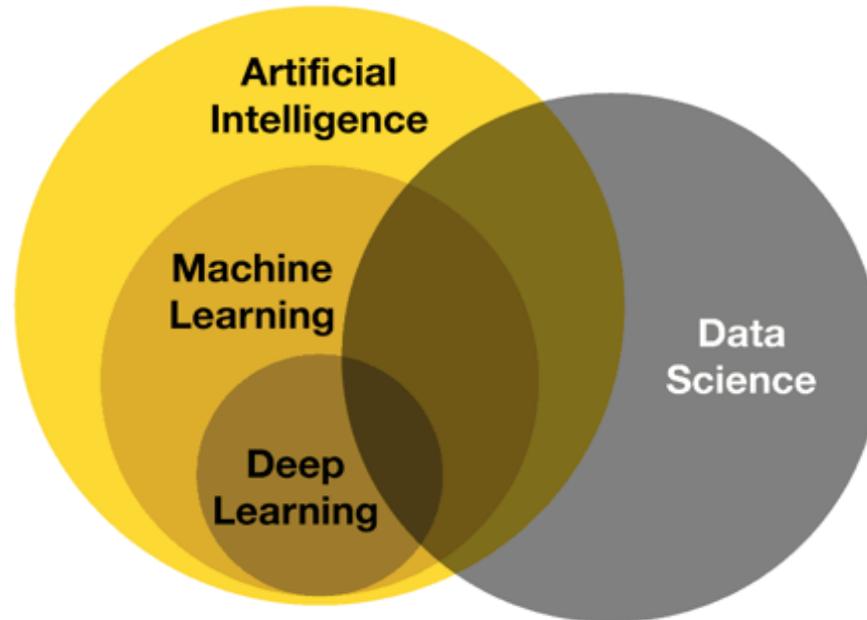
July 15, 2022

<https://hbr.org/2022/07/is-data-scientist-still-the-sexiest-job-of-the-21st-century>

“...the scope of the job has been redefined, the technology it relies on has made huge strides, and the importance of non-technical expertise, such as ethics and change management, has grown”

Why you should learn about Data Science @WU?

Data
Science
today:



Artificial Intelligence – AI is the broad concept of developing machines that can simulate human thinking, reasoning and behavior.

Data Science – *Data Science is the processing, analysis and extraction of relevant assumptions from data. It's about finding hidden patterns in the data.*

<https://www.deviq.io/insights/artificial-intelligence-vs-machine-learning-vs-data-science>

Data-driven Businesses everywhere:

 Big Data as core business: **Google** does not hire anybody without IT-knowledge

 **Apple:** from hardware company to data company (music and content)

- **Amazon:**    



FROM BOOKS TO DATA-DRIVEN BUSINESS



Red Bull: Marketing increasingly requires Data Science



BMW: Supply-Chain, Intelligente Produktion, in-car-Technologie (car-to-car communication,...), etc.



UN: One of the biggest providers of Open Data, Disaster & Crisis Management, etc.



Other known examples of data-driven businesses:



FROM BOOKS TO DATA-DRIVEN BUSINESS

Source:

<https://www.slideshare.net/laroyo/keynote-at-international-conference-of-art-libraries-2018-rijksmuseum/27>

DataScience for (Generative) AI?

Did you know that Netflix creates their contents from Data about their customers?

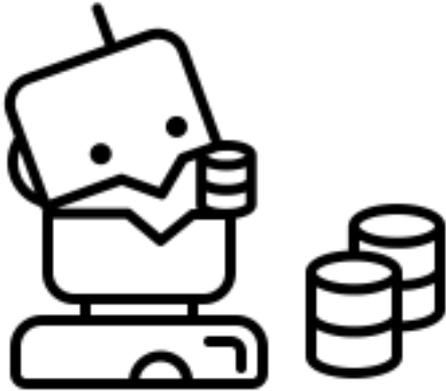
FROM DVD DISTRIBUTION TO ORIGINAL CONTENT
Granular Recommendations, Personalized Trailers, Posters, Content

<http://lora-aroyo.org> <http://slideshare.net/laroyo> @laroyo <http://crowdtruth.org> CrowdTruth 27

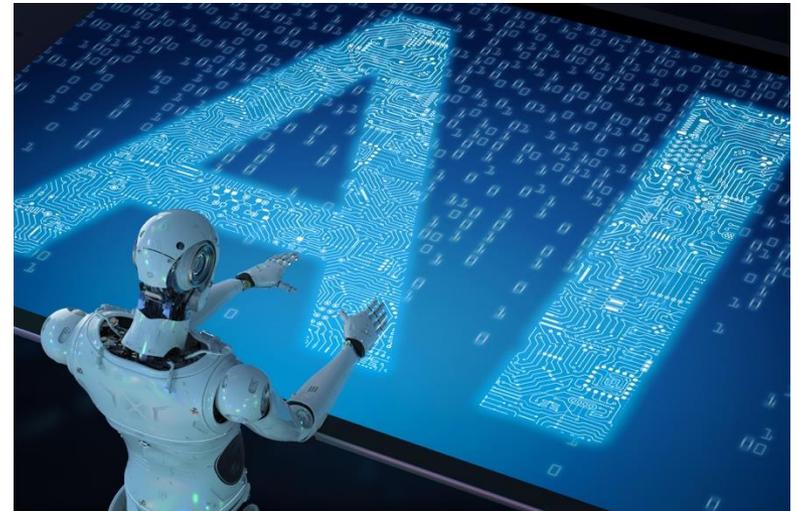
Source:

<https://www.slideshare.net/laroyo/keynote-at-international-conference-of-art-libraries-2018-rijksmuseum/27>

Last, but not least... AI is data-hungry



- AI depends on lots of data
- Understand scalability issues!
- Understand **Data Quality** & **Data Governance** requirements!
- Learn how to curate and feed data into Machine-Learning
- Understand risks and biases!



Job descriptions and roles

- Data Science is becoming at all levels, incl. the Executive level!
 - Data Stewards,
 - Chief Data Officer,
 - Chief Digital Officer

The screenshot shows a browser window with the URL <https://www.forbes.com/sites/ciocentral/2016/08/08/big-data-and-the-emergence-of-the-chief-d>. The article is dated August 8, 2016, at 01:48 PM, with 8,326 views. The author is Randy Bean, CEO and managing partner of consultancy NewVantage Partners. The article is part of 'The Little Black Book of Billionaire Secrets' series. A sidebar on the right offers a 'Download the Guidebook' from Dell Boomi. A social media sidebar on the left includes icons for Facebook, Twitter, LinkedIn, and a search icon.

The screenshot shows a browser window with the URL <https://www.wired.com/insights/2014/07/rise-chief-data-officer/>. The article is categorized under 'SCIENCE' and 'DEAR'. A navigation bar at the top lists categories: BUSINESS, CULTURE, DESIGN, DEAR, SCIENCE, SECURITY. A banner for 'WU EMERGING ACADEMY' is visible, advertising a 'PROFESSIONAL MBA IN VIENNA' with a 'FIND OUT MORE' button. The article title is 'THE RISE OF THE CHIEF DATA OFFICER' by Bob Leaper, DST Global Solutions. A photo of a man in a suit stands in front of a world map. A 'Join Today' button is present in the bottom right. The article is labeled as 'MOST POPULAR'. At the bottom right, there are accreditation logos for EQUIS, AACSB, and AMBA.

What is the new thing about Data Science?

Die Schlüsselposition „Data Scientist“ ist für Unternehmen da, wo innovative neue Lösungen entwickelt werden müssen, abseits des „Tagesgeschäfts“.

Ausbildung und Arbeit der Zukunft in der Ära von Big Data

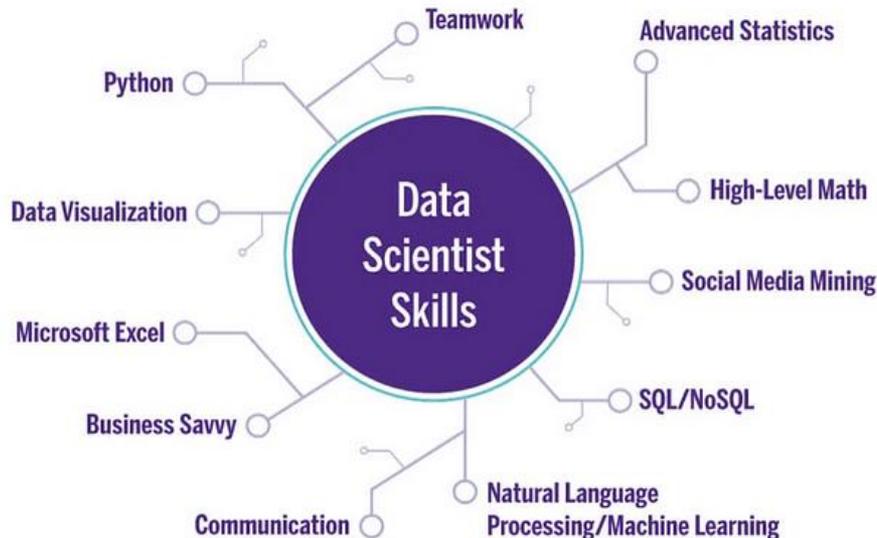
Das neue Berufsbild „Data Scientist“



<http://www.ocg.at/sites/ocg.at/files/medien/pdfs/OCG-Journal1503.pdf#13>

<https://executiveacademy.at/en/news/detail/data-governance-vs-data-science-twins-but-nothing-alike>

Data Scientists' Skills – What does it take?



<https://bootcamp.berkeley.edu/blog/data-scientist-skills/> (and several other sources ;-))

- Solid basis: Math, Statistics, Programming, Data Engineering
- **Curiosity & Creativity – find the needle in the „haystack“**
- Learn to learn *new technologies* quickly
- Develop front-to-end solutions, often adhoc
- **Domain-specific background knowledge**
- communicative skills **AND team spirit „Data Science Teams“**

Data Science SBWL – How do you get there?

<https://www.wu.ac.at/dpkm/teaching/sbwl-data-science/>

- **Interdisciplinary! International!**
 - 6 Institutes:
 - Data, Process and Knowledge Management,
 - Production Management,
 - Complex Networks,
 - Statistics & Mathematics,
 - Marketing,
 - Business Law
 - all courses taught in **English**
- 5 Courses (PI 2.0) :
 - **SBWL DS 1**: Data Processing 1
 - **SBWL DS 2**: Data Analytics
 - **SBWL DS 3**: Data Processing 2: Scalable data processing,
Legal & Ethical foundations of data science, Open Data
 - **SBWL DS 4**: Applications of Data Science
(Production Management, Supply Chain, Marketing,
Process Management, Computational Social Sciences)
 - **SBWL DS 5**: Data Science Lab,
in collaboration with real data providers!

Data Science SBWL: Organisation

<https://www.wu.ac.at/dpkm/teaching/sbwl-data-science/>

■ Schedule:

WS 2025/2026	SS 2026
<ul style="list-style-type: none">• Data Processing 1• Data Processing 2• Data Analytics	<ul style="list-style-type: none">• Applications of Data Science• Data Science Lab

- Next cohort:

SS 2026	WS 2026/2027
<ul style="list-style-type: none">• Data Processing 1• Data Processing 2• Data Analytics	<ul style="list-style-type: none">• Applications of Data Science• Data Science Lab

Steep Learning curve?

Well, yes but...

1. You can prepare!

- "Algorithmic Thinking and Programming" course ... recommended, but not strictly needed
- DataCamp python & R tutorials to get a glimpse (*access will be provided through the courses*)

2. We'll provide support!

- Our **tutors** provide help, particularly for students new to coding and programming (**New:** we'll provide separate **"bridging tutorials"** to support you in the first assignments and get **all** "up to speed")
- Group works emphasizing on mixed skills and mutual support!
- Get help through our course **online forums** (*we commit to response-within-a-day (except weekends ;-))*)

High reward, high impact!

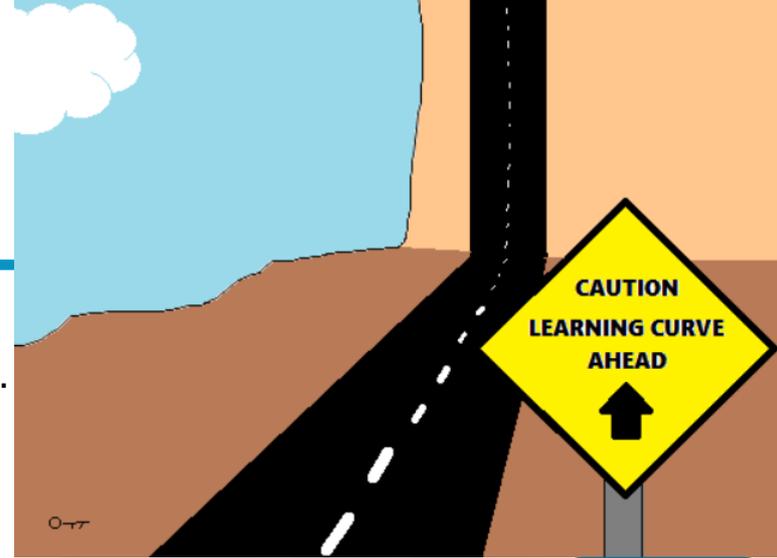
You'll be trained up to solving real use case with real partners, e.g.:



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Ingenuity for life



Data Science is a team sport!

Data Science Lab – news!

WU Innovative Teaching Award 2023

*Schwerpunkt „Gemeinsam Lehren:
Innovative Kooperationen und
Partnerschaften“*



High reward, high impact!

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Data Science SBWL: Organisation

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■ Requirements:

- Willingness & Fun to work "hands-on" with data!
 - Learn the most popular Data Science tools
- Willingness **to work in teams** and **interdisciplinary!**
- Willingness to solve (data) problems!



■ Qualification to enter the SBWL: Register for the entry test/tutorials via LPIS!!!

Factors taken into account:

- best grades transcripts/Avg grades
- plus, at max 10 "Green Cards":

BaWISO/WiRe

Avg. grade 1.5 among these courses:

- Algorithmic Thinking and Programming
- Data and Knowledge Engineering
- Statistics

BBE - Avg. grade 1,5 among these courses:

- Quantitative Methods 1
- Quantitative Methods 2
- Business Analytics 2

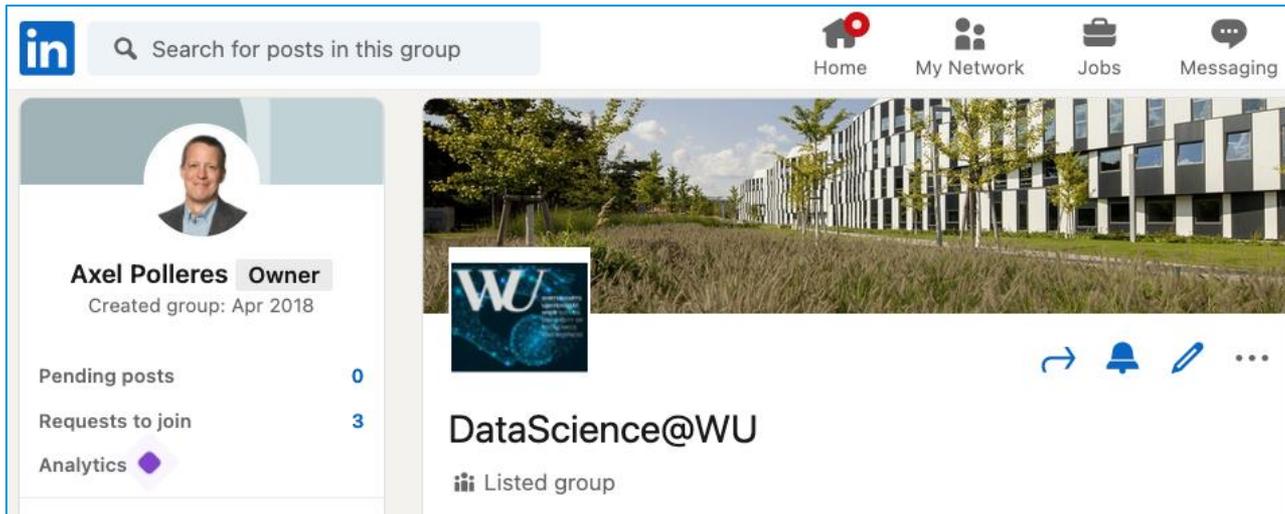
- online entry exam – all recommended to take the entry exam (even if you qualify for a green card!)

Details described on our Web page:
<https://www.wu.ac.at/dpkm/teaching/sbwl-data-science/>

Note: all (also green card holders need to register for the entry test/tutorials on LPIS! → counts as registration of interest to the SBWL)

Our Data Science@WU Community:

- DataScience@WU - Alumni network on **LinkedIn**
 - Keep in touch with our company coaches, lecturers, current students and alumni!



For our own research on Data Science, Data Quality, etc. visit <http://data.wu.ac.at>



- once per semester we meet at the "**DataScience@WU-Stammtisch**" with students, lecturers, industry coaches and alumni...



(non-privacy-violating ;-)) snapshot of our yesterday's "#DataScience @wu_vienna Stammtisch" our annual informal meetup with th #SBWL specialization students ... great discussions, thanks also to lecturers and alumni! Looking forward to the next meetup!



Ronald Hochreiter and 4 others

Our Data Science@WU Community:



Florian Jauernig · 1st

MSc Student Digital Economy | WU Vienna

1mo ***

The Data Science specialization is easily the best option for any student in the Information Systems branch of WU's bachelor program in Business and Economics. It helps students reinforce their Python expertise and analytical skills, teaches problem solving in a highly relevant area and builds bridges to interesting companies that might even follow up on the final project with job offers. While the work load is significant, the learning effect is also unparalleled. I can recommend this specialization without any limitations.



Raphael Dachs · 1st

Building and Breaking AI

1mo ***

The Data Science SBWL was easily the most valuable learning experience of my whole undergraduate degree. Not only because of the interesting courses but because of the friends and relationships formed throughout. And even though we were part of the first Data Science SBWL cohort (which is now already quite a while ago), I am still in contact with a few of them.

I was already holding positions as a working student/part-timer in companies as a data scientist/analyst but I feel like there were a lot of things introduced to me that deepened my understanding and showed me new approaches.

After finishing the course I went into consulting as a Machine Learning Engineer (actually got offered an internship pretty much at the end of course 5) and have been doing it ever since (... and founded my own AI company last year).



Corinna Häsele · 1st

Sicher und selbstbewusst mit Stress umgehen! Better linked bietet si...

1mo (edited) ***

Working with data in my whole career, made me always curious about new methods, to analyze data and gain information. The part time education in data science at WU was ideal. Great discussions with **Axel Polleres** and Daniel Dan!

Starting the education, I developed a new business idea that fully changed my life. Last year I founded **#betterlinked.eu**, a platform for stressmanagement, that is based on natural language processing. Thanks to **Ronald Hochreiter** for the co-operation.



Katarina Lucic · 1st

Developing individuals, organizations and myself has always been a c...

1mo ***

Together with **Axel** I started the Data Science Program and was responsible for it. Before that, I had a preference for statistics but no idea about what Data Science really is. My task was, among other things, to advise students on the program. To be able to do this better and out of curiosity, I visited the program myself. I found and still find that the program is very valuable and I could learn a lot.

I now work as Head of Recruitment and Personnel Development and what I learned in the program has accompanied me in every position and activity so far. It changes the way you solve problems. What has changed significantly for me is that I am now much more inclined to Data Driven Decision Making. I argue wherever possible with results from data analysis. E.g. which courses we will offer in the future but also how we will design our recruiting in the future.



Horia Stefan Dinu · 1st

Master student at WU

1mo ***

The Data Science specialisation is the best course path i took at WU during the undergraduate program. Most importantly, I had almost no knowledge in the topic at start, and after one year i built a great foundation for further learning. The SBWL certainly does not make you a senior data scientist, but it surely can spark your interest and help one find entry-level positions in the industry. Moreover, i enjoyed the professors teaching style and the materials covered, which heleped choose to continue studying at WU in the Digital Economy master (which i can also wholeheartedly recommend).

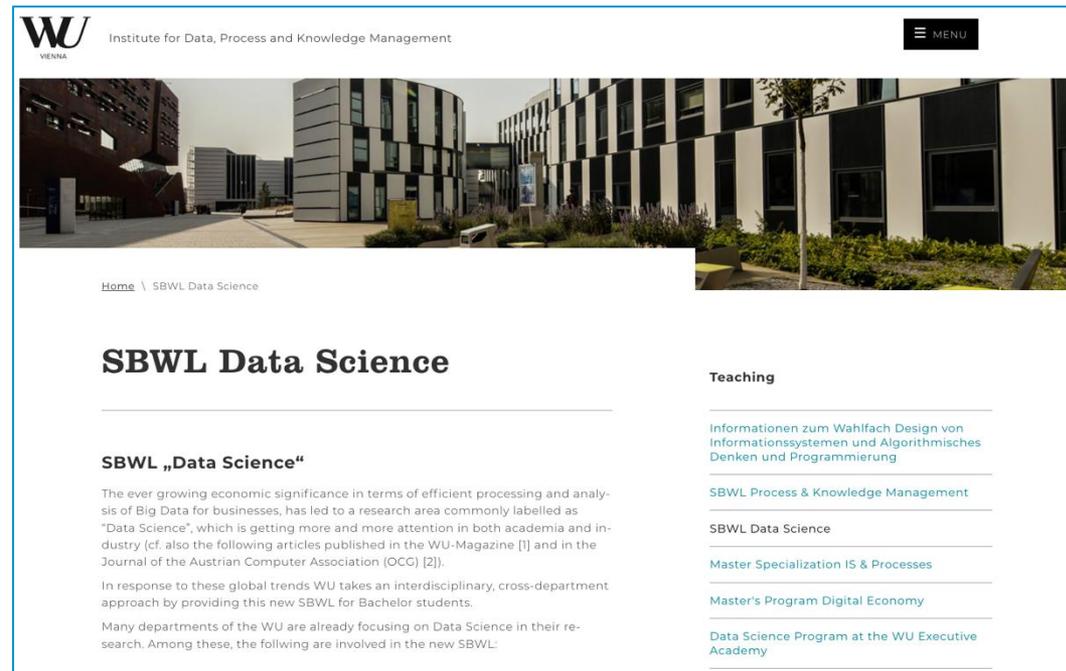
Questions?

Looking forward to seeing many of you in the coming semester!!

<https://www.wu.ac.at/en/dpkm/teaching/sbwl-data-science>

All further info on our Webpage:

- description
- green card
- contact (for questions)
- registration details/dates



The screenshot shows the website for the Institute for Data, Process and Knowledge Management at WU Vienna. The page features a header with the WU logo and a navigation menu. Below the header is a large image of a modern building. The main content area is titled "SBWL Data Science" and includes a sub-section "SBWL „Data Science“" with introductory text. On the right side, there is a "Teaching" section with links to various programs and courses.

WU VIENNA Institute for Data, Process and Knowledge Management

Home \ SBWL Data Science

SBWL Data Science

SBWL „Data Science“

The ever growing economic significance in terms of efficient processing and analysis of Big Data for businesses, has led to a research area commonly labelled as "Data Science", which is getting more and more attention in both academia and industry (cf. also the following articles published in the WU-Magazine [1] and in the Journal of the Austrian Computer Association (OCA) [2]).

In response to these global trends WU takes an interdisciplinary, cross-department approach by providing this new SBWL for Bachelor students.

Many departments of the WU are already focusing on Data Science in their research. Among these, the following are involved in the new SBWL:

Teaching

- Informationen zum Wahlfach Design von Informationssystemen und Algorithmisches Denken und Programmierung
- SBWL Process & Knowledge Management
- SBWL Data Science
- Master Specialization IS & Processes
- Master's Program Digital Economy
- Data Science Program at the WU Executive Academy