



LUDWIG-  
MAXIMILIANS-  
UNIVERSITÄT  
MÜNCHEN

MUNICH INTERNATIONAL  
SUMMER UNIVERSITY



MUNICH **MISU** <sup>LMU</sup>  
INTERNATIONAL SUMMER  
UNIVERSITY

# Machine Learning and Data Analytics in Finance and Accounting

Munich, Germany  
August 3 - 21, 2020  
[www.mda-misu.de](http://www.mda-misu.de)



# Munich 2020

Sessions: August 3 – 21

Session will take place at: will be announced

## Patronage



### **Prof. Dr. Thorsten Sellhorn**

Institute for Accounting, Auditing and Analysis  
Munich School of Management

## Lecturer



### **Gereon Hillert**

Former Research Assistant and Doctoral Candidate;  
Institute for Accounting, Auditing and Analysis  
at the Munich School of Management at LMU Munich



### **Andreas Woltschläger**

Former Research Assistant and Doctoral Candidate;  
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<b>Date</b>				
Sat, 1				
Sun, 2	<b>Arrival Day (2:00 p.m. – 7:00 p.m. )</b>			
<b>Date</b>	<b>Block</b>	<b>10.00 a.m. – 14.00 p.m.</b>	<b>Readings</b>	<b>MISU Events</b>
Mon, 3	<b>Intro</b>	Introduction to machine learning and its application in finance and accounting (AW)  Case Introduction	MG* - Chapter 1 (p. 1 – 4)	<b>Welcome Summer Event</b> 05:30 p.m. Schellingstraße 3 on the terrace 1st floor
<b>Date</b>	<b>Block</b>	<b>9.00 a.m. – 13.30 p.m.</b>	<b>Readings</b>	<b>MISU Events</b>
Tue, 4	<b>Introduction to Python</b>	Getting ready  Python Basics for Data Science (AW)  Case – Part 1	MG* - Chapter 1 (p. 5 – 11)	<b>Munich City Tour</b> by bus departing at 5.00 p.m. Geschwister-Scholl-Platz 1 at the fountain
<b>Date</b>	<b>Block</b>	<b>9.00 a.m. – 13.30 p.m.</b>	<b>Readings</b>	<b>MISU Events</b>
Wed, 5	<b>Introduction to Python</b>	Importing, cleaning and merging data (AW)  Case – Part 2		

Date	Block	9.00 a.m. – 13.30 p.m.	Readings	MISU Events
Thu, 6	<b>Introduction to Python</b>	Natural language processing - Textual Analysis (AW)  Case – Part 3	MG* - Chapter 7 (p. 323 – 325)	
Fri, 7	<b>Machine Learning</b>	Unsupervised machine learning (AW)  Case - Part 4	MG* - Chapter 2 (p. 25– 27)	
Sat, 8				
Sun, 9	Trip to Castle Neuschwanstein (tbc)			
Date	Block	9.00 a.m. – 13.30 p.m.	Readings	MISU Events
Mon, 10	<b>Machine Learning</b>	Supervised machine learning I - Basics (GH)	MG* - Chapter 2 (p. 25– 27)	
Tue, 11	<b>Machine Learning</b>	Supervised machine learning II (GH) - Application  Case - Part 5  Wrap-up & Q&A	MG* - Chapter 3 (p. 131-134)	
Wed, 12	<b>Machine Learning</b>	Supervised machine learning II (GH) - Model evaluation  Case - Part 6	MG* - Chapter 5 (p. 251-252)	
Date	Block	15.00 p.m. – 18.00 p.m.	Readings	MISU Events
Wed, 12	<b>Recap and team event</b>	Recap and bavarian culture (Starting 15:00 p.m.)		
Thu, 13	<b>No class. Time to prepare for exam and student’s presentation.</b>			
Fri, 14	<b>No class. Time to prepare for exam and student’s presentation.</b>			
Sat, 15	Trip to the city of Nuremberg (tbc)			
Sun, 16				

Date	Block	9.00 a.m. – 13.30 p.m.	Readings	MISU Events
Mon, 17	<b>Data Analytics</b>	Data Visualization Data description Statistical analysis  Case - Part 7		
Tue, 18	<b>Wrap-up 2 &amp; Q&amp;A</b>	Summary of overall content (GH)		
Date	Block	14.00 a.m. – 17.15 p.m.	Readings	MISU Events
Tue, 18	<b>Presentations</b>	Student's Presentations (GH)		
Wed, 19	<b>No class. Time to prepare for exam.</b>			
Date	Block	9.00 a.m. – 10.00 a.m.	Readings	MISU Events
Thu, 20	<b>Exam</b>	GH/AW		
Fri, 21				
Sat, 22	Departure latest at 10:00 am			

**Note that the agenda is preliminary and may be subject to change.**

### **References:**

**\* Andreas C. Müller, Sarah Guido: Introduction to Machine Learning with Python: A Guide for Data Scientists, 1st Edition - MG (Main Textbook)**

Bird, Steven; Klein, Ewan; Loper, Edward: Natural Language Processing with Python, First edition, 2009

Géron, Aurélien: Hands-On Machine Learning with Scikit-Learn and TensorFlow: Concepts, Tools, and Techniques to Build Intelligent Systems 1st Edition